AN INVESTIGATION INTO THE DETERMINANTS AND CHARACTERISTICS OF THE ENTREPRENEURIAL UNIVERSITY: EVIDENCE FROM ENTREPRENEURIAL UNIVERSITIES IN THE UK

KAFAYAT KEHINDE LAMIDI

A thesis submitted to the University of Huddersfield in partial fulfillment of the requirements for the degree of Doctor of Philosophy

The University of Huddersfield

September 2017

Copyright statement

i. The author of this thesis (including any appendices and/or schedules to this thesis) owns any copyright in it (the "Copyright") and s/he has given The University of Huddersfield the right to use such copyright for any administrative, promotional, educational and/or teaching purposes.

ii. Copies of this thesis, either in full or in extracts, may be made only in accordance with the regulations of the University Library. Details of these regulations may be obtained from the Librarian. This page must form part of any such copies made.

iii. The ownership of any patents, designs, trademarks and all other intellectual property rights except for the Copyright (the "Intellectual Property Rights") and any reproductions of copyright works, for example graphs and tables ("Reproductions"), which may be described in this thesis, may not be owned by the author and may be owned by third parties. Such Intellectual Property Rights and Reproductions cannot and must not be made available for use without the prior written permission of the owner(s) of the relevant Intellectual Property Rights and/or Reproductions.

1

Abstract

My first major contribution to knowledge is that practically, I modified the European (EU) framework (2012) by introducing a 3x3 best practice model to advance policy and strategy of entrepreneurship in the higher education sectors. My second major contribution is that theoretically, I used evolutionary resource-based view (RBV) theory to analyse all-encompassing factors influencing how universities co-evolve with their external environment to become more entrepreneurial which has been predominantly utilised as an internal analysis only. An evolutionary view of resource-based theory argues that variation in universities' approaches toward entrepreneurialism is underpinned by their resources and capabilities. Therefore, this research draws on the evolutionary perspective of RBV to explore both internal and external factors. Thereby extending RBV with a taxonomy of factors. My third major contribution is that conceptually, I utilised the strategic corporate entrepreneurship (CE) as a complementary concept to explore how entrepreneurial practices are configured in university settings. This is essential because CE has widely been used to advance the understanding of entrepreneurial activities within established and large private firms only. The strategic view of CE argues that an organisation might not have developed a new business but understand how to explore opportunities in a highly turbulent environment involving multiple actors. In doing so, it provides a comprehensive analysis into the classification of and strategy types behind why some universities are high in entrepreneurial activities than others and how coordination of such activities results in heightening entrepreneurial edge. While branding the activities into classifications, I extend CE with local, national, EU, and international levels of impacts of the entrepreneurial engagement and strategy types. Therefore, the integration of RBV with CE is important to advance our understanding of why and how some pre-1992 (established/old) and post-1992

2

(new) of the 'self-defined' universities are considered 'entrepreneurial'. Thus, have implications for strategy and management practices.

The study develops a 3x3 practical model that can shape strategy, practice, and policy of entrepreneurship in university settings. This is essential because there is a lack of clarity in terms of how the seven components of the entrepreneurial university identified in the EU framework applies to the UK context. Therefore, this qualitative case study research is underpinned by an integrated lens of both RBV theory and CE concept to explore how fifteen (15) UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'. Through the combination of qualitative methods, thirty-two (32) key informant interviews were complemented with document analysis and participant-led visual methods. In contrast to the findings of the EU framework, my analysis generated three taxonomies of factors, three classifications of characteristics, and three typologies of the entrepreneurial university. In doing so, it highlights some policy and practice implications including having a cohesive and coherent strategy and how well-coordinated entrepreneurial activities enhance competitive position in today's higher education marketplace. Consequently, it offers valuable experience for university leaders and managers to deliberate on their strategies and management practices for entrepreneurialism. As such, the primary beneficiaries of the research contributions are universities and the secondary include funding councils, higher education policy planners, small and medium enterprises (SMEs), practitioners, and researchers.

Table of Contents

5

List of Figures

List of Tables

14

Dedications and Acknowledgements

I would like to thank Dr. Craig Barson and Kevin Ormond (my placement supervisors) who thought me to be productive, courageous and how to stand on my two feet in a period of adversity as well as Mrs. Ruth Brooks (my undergraduate supervisor). My utmost gratitude to the University for its lucrative investment in me. Thanks to the Business School management team for the empowerment to embark on this Ph.D. journey.

My special thanks to Dr. Dina Williams (my First-Year Ph.D. supervisor) for initiating this research project as well as Dr. Walter Mswaka and Dr. Kelly Smith (my Second-Year supervisors) for their guidance. My profound gratitude to my Final Year supervisory teams (Dr. Walter Mswaka, Dr. Julie Davies, and Professor Gerard McElwee) for their time, efforts, and resources in the successful completion of this thesis. Great thanks to Professor Jawad Syed (my Third-Year supervisor) for his inspirational words and motivational advice.

With great honor and appreciation, my gratitude to the NCEE CEO and the three key informants for sharing their thoughtful insights at the early stage of this project during the pre-study and all the 32-significant people who participated in this research investing their time, expertise and resources. I really appreciate the positive support and kind gestures of the PGR skills and PGR administration teams for effective coordination and career development.

My reserved indebtedness to my family home and in diaspora especially Alhaji Lamidi Gbadamosi and Alhaja Oyetunde Kudirat (my late parents) who bought me a ticket to embark on my journey of life and gave me the opportunity to be who I am. I am also very grateful to my children (Fatiat, Fatiu, Fausiyat, and Fazl) as well as friends, and colleagues for their unbeatable support, patience, and understanding. I am very grateful to my siblings for their support, prayers, and thoughts. Finally, I really appreciate the duty of care, compassion, value, and support provided by the Kirklees.

15

'Success' is the fruit of enthusiasm, focus, persistence, personal effort plus support and encouragement from like-minded people. Thanks to you all.

List of abbreviations

ACUP Catalan Association of Public Universities

Brexit British Exit

CS   Case Study

CE   Corporate Entrepreneurship

CEC   Communication for European Commission

CRM   Customer Relationship Management

DBIS Department for Business, Innovation, and Skills

DfE   Department for Education

DfEL   Department for Employment and Learning

DLHE Destinations for Leavers of Higher Education

DTI   Department of Trade and Industry

GDP   Gross Domestic Product

EC   European Commission

ECIU European Consortium of Innovative Universities

EHEA European Higher Education Area

ESAs   Entrepreneurial-Social Actors

ESIF   European Structural and Investment Fund

EULP   Entrepreneurial University Leadership Programme

EUYA   Entrepreneurial University of the Year Award

HEFCE Higher Education for Funding Council England

HEFCW Higher Education Funding Council for Wales

HEIF   Higher Education Innovation Fund

HEIs   Higher Education Institutions

17

HESA   Higher Education Statistics Agency

I3EC   Innovation, Enterprise, Entrepreneurship, Experimentation, and Creativity

IEEP   International Entrepreneurship Educators Programme

KE   Knowledge Exchange

LEED   Local Economic and Employment Development

LEPs   Local Enterprise Partnerships

MIT   Massachusetts Institute of Technology

MOOCs Massive Open Online Courses

NBAs   National Business Awards

NCUB   National Centre for Universities and Businesses

NI   Northern Ireland

NCEE   Nation Centre for Enterprise and Entrepreneurship Education

NCIHE   National Committee of Inquiry into Higher Education

NSS   National Students Survey

NUTS   Nomenclature of Units for Territorial Statistics

OECD   Organisation for Economic Co-operation and Development

ONS   Office for National Statistics

PEST   Political, Economic, Social, and Technological

PVM   Participant-led Visual Methods

P2   Planet TOO

RAE   Research Assessment Framework

REF   Research Excellence Framework

RIS3   Regional Implementation of Smart Specialisation Strategies

RBV   Resource-based View

RO   Research Objective

RQ   Research Question

SEE   Social Entrepreneurship Education

18

SIF   Social Innovation Fund

SFC   Scottish Funding Council

SMEs   Small and Medium Enterprises

SMT   Strategic/Senior Management Team

SPOOCs Small Private Online Courses

SVB   Social Venture Builder

TEF   Teaching Excellence Framework

THE   Times Higher Education

THIS   Triple Helix Innovation System

TTOs   Technology Transfer Offices

UBC   University-Business Collaboration

UBM   United Business Media

UGC   University Grant Committee

U-I-G   University-Industry-Government

UK   United Kingdom

UKSI   United Kingdom Statutory Instruments

UUK   Universities   UK

Academic Biography

Currently, I completed my Ph.D. in the Entrepreneurial University discipline. I adopt a calm and relaxed philosophical attitude to work life. I am a focused, enthusiast, ambitious, and hardworking individual who always look for both creative and innovative ways of getting things done. I love to work as both part of a team and as an individual and I strive to use my intelligence and skill to secure hard-won achievements or to sort out any tasks. I have a strong sense of commitment and strive to be successful in everything I undertake. My research is between strategy and entrepreneurship in the higher education sector. As a top-tier Ph.D. candidate, I give priority to creativity and innovation in analytical and methodological approaches to research. I have presented my work at several national and international conferences. I am an effective networker, interactive, and engaging presenter. I am very flexible in repositioning myself to changes. Recently, I shared some tips and tricks on how to prepare for an interactive presentation with the International Doctoral Consortium (IDC) 2017.

Introduction

Increasingly, universities have become key institutional actors in generating innovation and knowledge from technology-transfer based commercialisation activities (Breznitz & Etzkowitz, 2016). At the same time, universities globally are facing unprecedented challenges in responding to the expectations of different stakeholders to contribute to the social and economic development of their countries thereby becoming more entrepreneurial (Chang et al., 2016; Hofer & Dimitrov, 2014). Despite multiple drives for universities to evolve and transform into more entrepreneurial organisations, it is challenging for some universities. This is because universities in today's world operate in a knowledge-based and technology-driven economy that require a transition from teaching and research to entrepreneurial for global competitiveness. Consequently, the notion of the entrepreneurial university has become an integral aspect of socioeconomic aspirations and growth of many countries including the UK. This transition led to unprecedented challenges for universities. Besides, there is a lack of clarity in terms of the definition, determinants, and characteristics of the entrepreneurial university (EC & OECD, 2012; Guerrero et al. 2014; Hofer & Dimitrov, 2014). Therefore, research of this nature provides useful insights into the phenomenon.

It is important to open this thesis with an insight into the entrepreneur and entrepreneurial concepts. This is crucial to establishing the background of the concept 'being an entrepreneurial university'. While an entrepreneur (individual or organisation) takes risk and initiative to initiate a business (Chumas, 2014), being entrepreneurial is concerned with the entrepreneur's behaviour within a system (Clark, 1998). Such a system could be the business functioning environment (Dutta & Thornhill, 2011; Garett & Holland, 2015). Thus, the entrepreneurial university focuses on the relationship between the university, business, government, and society (Etzkowitz, 2013).

21

Consequently, it is important to have one encompassing definition in this introductory section that reflects my view of the entrepreneurial university. Therefore, this thesis refers to the entrepreneurial university as a collective, accessible and open innovation entity, where entrepreneurial activities are collaboratively performed by the involvement of diverse expertise of multiple stakeholders (individual, business, government, faculty, and university) to enhance public value creation. This definition summarises the common elements (series of knowledge, diverse expertise, internal and external environment) in my two definitions devised for this thesis in Chapter Three. Given the diversity (variations in university status/sizes and differences in location) in the UK higher education context, the integration of these commonalities is essential as the entrepreneurial university emphasises multilevel relationships.

An opening for this thesis is the outcomes of the joint international project involving 137 institutions (UK universities inclusive) by the European Commission (EC) and Organisation for Economic and Cultural Development (OECD). The analysis incorporates seven components (Figure 1- subsection 1.2.1 and Appendix 22) around the entrepreneurial university. Why I acknowledge the contribution, my argument is that there is a lack of clarity in these components and how the framework applies to the UK in relation to policy, system, and structural environments including different universities' status (Appendix 22).

Consequently, this led to the consideration of the UK practice body that contributes to the ways in which universities work toward being entrepreneurial. For example, the National Centre for Entrepreneurship in Education (NCEE) Award. Unlike the NCEE - the Times Higher Education prestigious award mainly for universities, other awards such as the National Business Award and the Queen's Enterprise Award are inherently prestigious business awards for business and non-profit firms. So, given that universities are the levels of analysis in this thesis, I consider the NCEE award for a comprehensive analysis. Further detail on these bodies is discussed in subsection 1.2.5 and section 2.4. The rest of the

thesis is organised into eight chapters. Summary of these chapters is provided in section 1.5 of Chapter One.

Chapter 1 Introduction and background

Chapter One introduces the thesis by highlighting the research gaps and objectives and outlines its overall structure. The chapter is organised as follows. Section 1.1 briefly summarises the changes and educational reforms in the UK as a background to the study. Section 1.2 sets out the major rationale and motivations for the study. Section 1.3 summarises the research objectives and section 1.4 is an outline of the contributions to knowledge and practice. Finally, section 1.5 diagrammatically summarises the chapters of the thesis.

1.1 Background: Educational reforms in the UK

The higher education (HE) sector in the UK experienced an extended period of changes including the system, structural changes and numerous educational reforms which were driven by various factors such as political, economic, cultural and technological developments in the external environment (Economist, 2015; Universities UK, 2012). One of the vital milestones of the educational reform was the Further and Higher Educational Act 1992. This Act gives large higher education colleges and polytechnics the power to award degrees thus, becoming universities. As such, understanding the Act is crucial to the educational background and historical context of UK universities route.

Following the advent of the Act, the reorganisation of the higher education brought 48 UK polytechnics into the university sector (Wyness, 2010). While this reflects widening access to educational opportunities for all in relation to a considerable acceleration of degree awarding bodies in the sector from the 1970s (Logie, 2015), higher education provision is leading to intense economic and political importance for universities (Harris, 2011). In response, universities are required to raise their profiles by becoming more

entrepreneurial. They are transforming toward entrepreneurial universities by taking part in third-leg or commercial-based activities (first-leg is teaching, second-leg is research, and third-leg is entrepreneurial and/or enterprise related activity including knowledge transfer partnerships which is within the context of my research). The universities' engagement in commercialisation activities represents their efforts at strengthening income streams.

Further to the above educational reform and structural changes, as the government plans to maximise efficiency and increase expansion of the sector, both parts reacted differently- the colleges and polytechnics increased students' number with low per capita funding for whom they were allocated tuition fees only and universities steered away from this recruitment growth (Green, 1994). While the public higher education increased students' recruitment, the universities attempted to protect their unit of resources rather than the expansion growth (Bathmaker, 2003,). This implies that in the four-year period (1988/92), the polytechnics and higher education colleges were more responsive to the government's plan.

Consequently, the entrepreneurial university, specifically in the UK, emerged as a phenomenon whereby government was encouraging universities to rely more on new sources of funding via commercialisation routes including knowledge transfer, spin-offs, and start-ups activities thereby becoming more income generating and self-financing. While these are some of the ways in which universities work toward becoming entrepreneurial, start-up is a newly set-up entrepreneurial venture with the potential to generate innovation (Spender et al., 2016) and the spin-off is a company inherently high-tech in nature (Mustar et al., 2008). This suggests that both academic start-up and academic spin-off from universities play a significant role in the country (Groth & Tierrock, 2011). Responding to this entrepreneurial university imperative is overwhelming because some universities are in a better position to be adaptive to such transformation than others. This positioning may be the ability to embrace and adapt to a dynamic external environment which reflects their

"history, educational focus, disciplinary mix, location" amongst others (Langridge, 2006, p. 2).

The complexity of the external environment makes it problematic for universities to have confidence in taking the risk associated with uncertainties: operating in new markets, investing in new business areas; tolerating failures and developing capabilities required to exploit opportunities for entrepreneurialism: new service delivery methods, new commercialisation, and technological development opportunities (Logie, 2015).

This then forms the background of the UK for this study by modifying the European framework. That is, given the differences in the origin and history of UK universities, changes were made to the EU framework considering different UK universities status (post-1992 and pre-1992 universities vis-à-vis teaching, research, and technological orientation). This modification purpose was fulfilled by exploring how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'; and in doing so, it clarifies between their determinants and characteristics. This clarification is of significance to understand the substantial differences in the entrepreneurial approaches of this 'self-defined' group of universities.

1.2 The motivation for the study: A rationale

The motive to undertake this research lies in the following parts: (i) the uniqueness of UK as a research context in terms of its educational diversity; (ii) OECD (2008) call for more clarity on how entrepreneurial actors can foster regional innovation; (iii) the limitations of the European framework ignoring national background and historical contexts (social, political and economic structures); (iv) inconsistency in the interpretation of entrepreneurial university; and (v) paucity of empirical research on the National Centre for Entrepreneurship Education (NCEE) Times Higher Education Supplement Entrepreneurial University of the Year Award (THE EUYA).

1.2.1 Introduction and limitations of the European framework

First, and as previously highlighted, the EU framework is a tool to help universities assess how innovative they are and was produced based on an international case study from a panel discussion on the theoretical debate of universities' role in developing entrepreneurial qualities (EC & OECD, 2012). This suggests a close link between the framework and the entrepreneurial university. The most recent update from OECD (2018) on the framework is that most universities are still struggling in building links between the teaching, research, and entrepreneurial missions. This suggests that the framework is still ongoing and there is a need to do more with it to support universities (See also Appendix 22).

At the European level, government commitment to supporting and encouraging universities with this entrepreneurial transformation is the attempt that brought the European Commission (EC) together with the Organisation for Economic Co-operation and Development (OECD) to develop the European framework or HEInnovate tool which was launched in 2012 (EC & OECD, 2012). Primarily, the purpose of the European Framework was to assist universities in self-assessing themselves on how innovative their institutions are (See Appendix 22), using a seven-pillar framework, shown in Figure 1 below.

For clarity on the modification done to the EU framework, I labelled (Pillars One-Seven) the components in Figure 1 because the key argument in this thesis is how it applies to the UK. This label is important for grouping the components into factors (Pillars One and Two), characteristics (Pillars Three-Six), and Pillar Seven was extended with the typologies (see Section 8:1). To establish a background of the EU framework, the components are hereunder explained.

Leadership and governance: Pillar 1 claims that strong leadership and good governance are crucial to developing an entrepreneurial culture (EC & OECD, 2012). To show the importance of leadership by utilising the European framework, Hannon (2013) exemplifies by pointing to how a Pro-Vice-Chancellor establishes the Entrepreneurial

University Development Group and Swansea Employability Agenda at the strategic level. Some scholars (e.g. Hannon, 2013) contribution was based on a personalised view of his previous role as the CEO of NCEE, a current project with the European Commission and insights from the practices he currently undertakes to develop Swansea University into an entrepreneurial institution. This suggests that there are limited scholars who have empirically tested the framework in the UK.

Organisational capacity, people, and incentives: Pillar 2 is underpinned by the financial strategy of the university, its capacity to attract and retain the appropriate personnel with an entrepreneurial background, including developing and incentivising entrepreneurial behaviour in staff and students.

As shown in Figure 1, having associated Pillars 1 and 2 with factors, prior studies (Davidsson & Wiklund, 2006) posit that staff or enterprising individuals and governance structure are recognised with certain resources. This suggests that these factors are resources.

Entrepreneurship development in teaching and learning: Pillar 3 is associated with collaborating and maintaining regular contact with external stakeholders as an important source of expertise and experience that can be used to support entrepreneurship education. Increasingly, student engagement with lived experience of practising entrepreneurs through pedagogical techniques is gaining momentum (Higgins & Refai, 2017). There are other methods including work-based learning through which employability and enterprise skills can be gained (Kenyon, 2011). However, the recent call for using experiential learning for entrepreneurial education enhancement (Higgins et al., 2018) has implications for management practices.

Pathways for entrepreneurs: Pillar 4 entails creating widespread awareness amongst staff and students to encourage entrepreneurial behaviour and develop a range of entrepreneurial abilities and skills.

University-business/external relationships: Pillar 5 posits that the entrepreneurial university puts a high value on knowledge exchange through collaboration and partnership and generate added value from the relationships.

The entrepreneurial university as an international institution: Pillar 6 emphasises international exposure. Internationalisation is the "process of integrating an international, intercultural or global dimension into the purposes, functions and delivering of education" (EC & OECD, 2012, p.14). This implies that the international strategy of the university should reflect the entrepreneurial objectives.

Given that resources (Pillars 1-2) are used to focus on certain business activities or sets of activities (Davidsson & Wiklund, 2006), Pillars 3-6 are associated with 'activity'. That is, the activities are the characteristics of the entrepreneurial university.

The impact: Pillar 7 integrates the outcomes of Pillars 1-6. The university demonstrates that it collects evidence of the effect of activities on its entrepreneurial agenda which serve as reflective and review tool for devising strategy and mission for the university. The impact could be measured through "changes in participant's motivation and level of competence acquired after undertaken entrepreneurship education activities as well monitoring and evaluating at regular interval" (EC & OECD, 2012, pp. 16-17).

Having discussed the seven components, I detect that the EU framework has three main sides: (i) factor; (ii) characteristics; and (iii) impact
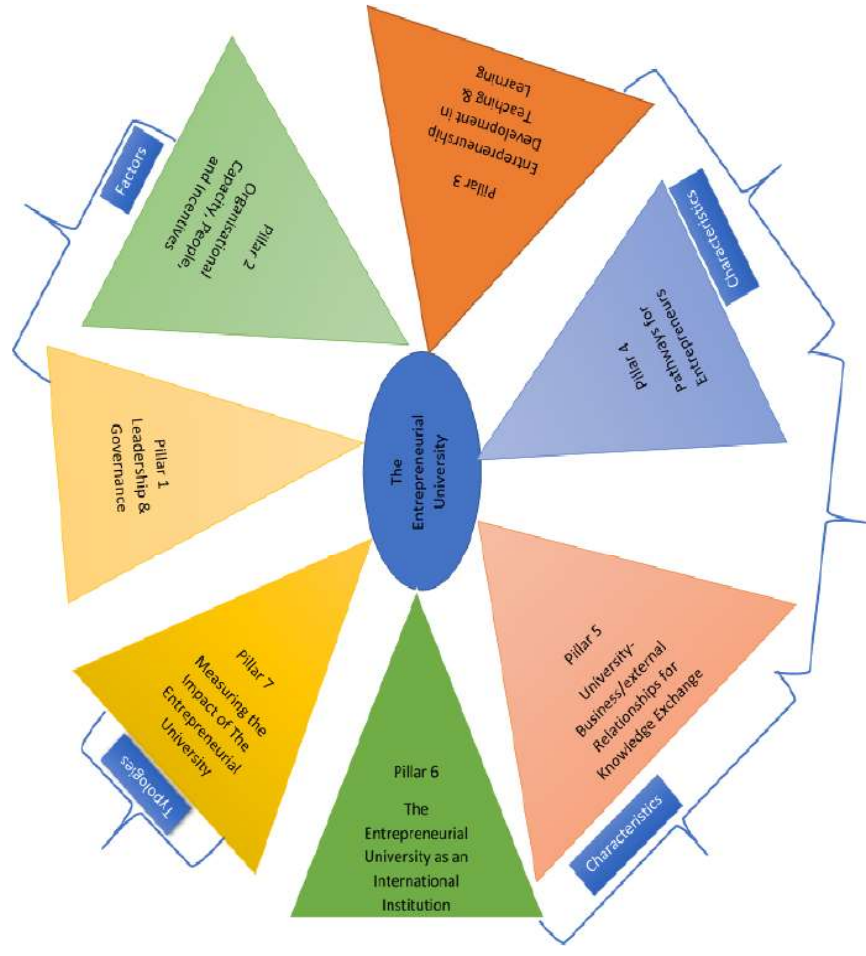
Figure 1: A modification of the European framework

Source: Adapted from the EC, OECD & (2012, p. i).

It can be deduced from the above explanation that majority of the components (Pillars 3-6) are embodied in the entrepreneurial or business 'activities' that the university may undertake, some (Pillars 1-2) are embodied in the 'resources' that can be used to focus on the activities, and other (Pillar 7) is embodied in the outcome derived from or consequence of the entrepreneurial activities. Simply, I observed three units of analysis: business activity, factor, and outcome in the EU framework and therefore, have different interpretations. Consequently, in this thesis, the factors and characteristics are the primary units of analysis and the outcome is the secondary (See Figure 9 in Chapter 5.3).

These seven pillars inform the relevance of the European framework to this research because there is a need for clarification as to how it specifically applies to the UK context. Furthermore, the EC and OECD acknowledged and claimed that these components are the likely factors that could represent features of an entrepreneurial institution. Extracts from the report read:

"These statements are factors likely to be the characteristics of the Entrepreneurial University [...] the study does not attempt to invent new models and factors but bring together existing, available literature and models, and adapt them for best use in the European Higher Education Area" (EC & OECD, 2012, p. 1).

The above statements indicate that the authors have not vividly claimed the components as either factors or characteristics or both. By using the phrase 'likely to be' is an anticipated expectation that suggests needs for clarity in the components of the entrepreneurial university. Again, while the great contribution of the authors is highly appreciated, there are two major critiques (misconception and applicability). First, this thesis argues that factors (herein refers to as shaping or determining resources) and characteristics (herein refers to as defining or underpinning business activities or practices) are two separate terms and therefore need clarification. So, there is a lack of clarity in the use of the terms factors, features, and characteristics. Second, while the framework sits on the European-level context, it lacks clarity in the UK context. As such, it ignores empirical

30

data on a specific national-level context that links these components to the historical and normative contexts in terms of the British universities' traditions, educational focus as well as UK political, economic and social structures. Perhaps, universities might be facing similar challenges (Salamzadeh et al., 2015), entrepreneurial universities in different countries approach entrepreneurialism differently (Guerrero et al., 2014; Markuerkiaga et al., 2015). As such, it is crucial to modify the EU framework by reflecting on different UK universities.

Consequently, while some entrepreneurial universities focus mainly on technology transfer and spin-offs, others emphasise more on start-ups. The variation is partly due to their cultural dimension (tradition) and unique institutional structures or status. It is as well argued that even in the same region, universities have different paths toward entrepreneurial transformation due to social, economic and political structures of the country (Williams et al., 2015). For example, in the UK, there is the higher economic impact of spin-offs activities associated with larger research-intensive universities and other universities' group economic impact is identified with knowledge transfer activities (Guerrero et al. 2015). Therefore, it is crucial to clarify the components and understand how the framework applies to the UK.

Furthermore, there is a paucity of literature that has investigated how specific environments might influence entrepreneurship in a university setting (Rasmussen et al., 2012). In the UK HE market, English universities are numerically dominant accounting for over 80% of students' enrolments which has led the England education system to be more market-oriented (Kemp & Lawton, 2013), meaning that the more students they recruit the increase in their income and vice-versa. Ultimately, the decline in enrolments is less funding for the universities, thus creating a competitive environment for them (Kemp & Lawton, 2013). This implies that while the pre-1992s have research as an alternative switch, the post-1992s are hampered because of funding capacity. Then, what are their means of survival in terms of responding entrepreneurially? So, universities engagement in entrepreneurial activities is to attract alternative income to complement their usual teaching and research income.

31

Given that the cases in this thesis are teaching-led and research-led located in the different parts (here in England and Scotland) of the same country, and even where the UK most world-class research universities such as Oxford 2nd, Cambridge 4th, and Imperial College London 8th (THE, 2015) reside, require a close scrutiny of how the market-led approach in the environment is influencing their entrepreneurial development. That is, the different location of the universities offers an insight into how they vary entrepreneurially. The implications of this are in manifolds. First, and according to the former Mayor of London, Boris Johnson, the UK capital (London) maintains its global leadership edge in education, innovation and the inspiration of top talent both nationally and internationally (Evening Standard, 2015). The point here is that by exploring universities in England which intrinsically has the highest number of higher education institutions in the country as well as an attractive place for staff, students, and businesses strengthen the rigor of the study. Secondly, the place becomes more attractive to students, entrepreneurs, firms, innovators as well as universities. Thirdly, the co-presence of more than one actors of the similar sector (business and/or education) brings about an additional dimension. This is what Audretsch et al. (2015, p. 188) refer to as "localisation economies", which they describe could facilitate among other processes the exchange of relevant information, the ways in which competition might unfold and in turn, may trigger innovations. It also provides opportunities for physical contacts which is important for innovation to take effect and new ideas to emerge. And finally, the mobility of university staff from one region to another within the same territory, for example, West Midlands to South Yorkshire (still in England) could generate knowledge spill over. Likewise, Kempton et al. (2013) commented on the relevant and important of 'places' in the capacity building of universities.

According to Audretsch et al. (2015) and RethE (2010), geography matters in innovation and entrepreneurship. There is a high growth of innovative start-up in regions with strong entrepreneurial spirits (Röhl, 2016). This is partly due to a strong cultural dimension and a can-do attitude in major economic centres or cities such as Munich

(Germany), Stockholm (Sweden), Cambridge and London (UK), Silicon Valley and Boston (U.S.). For example, while it was acknowledged that Europe has a record of successful startup clusters in places like London, yet the start-up figure remains low in Europe compared with US and Israel (EY, 2016; Röhl, 2016).

Here, these comments are relevant when we consider the 'how', 'what' and 'why' questions by exploring: how UK self-defined entrepreneurial universities are responding to the policy imperative 'to become more entrepreneurial', what self-defined entrepreneurial universities in the UK consider being entrepreneurial in their own context and why which are currently under-explored. Researching the higher education marketplace and extending the European framework is of significance to enable universities to understand better how they can be more globally competitive through best practice of the entrepreneurialism.

Having briefly highlighted the shortcomings of the European framework and background of the UK HE sectors; the next subsection details the significance of researching the UK as a study context.

1.2.2 The UK as a research context: A justification

The research context as briefly explained above, the UK arguably offers an interesting research context where the determinants and characteristics of the entrepreneurial university can be empirically explored. The UK HE sector has a heterogeneous landscape; that is, series of the diversity of the universities in terms of their sizes, missions, types, and traditions. Specifically, and following the post-Robbins expansion (1963) - the UK government launched a report that suggested an instantaneous increase in the number of universities which led to the status of universities been given to all colleges of advanced technology, the UK HE sector has a unified system in terms of funding. That is, new (colleges of higher education and polytechnics that had no record of research fund) and old (has been receiving research funding) universities are financed by similar funding body or council, governed by similar rule and judged by similar criteria (Green, 1994).

On one hand, the 1992 Act empowered polytechnics and majority of the higher education colleges the complete right to award degrees and use the title 'university', leading to the emergence of post-1992 universities. However, to be able to fund the sector under the unitary system, the Higher Education Funding Councils were created for England, Scotland and Wales. Then increasingly, funding became a severe pressing issue in the sector since the early nineties. There continue to be a consistent reduction in the unit of resources allocated to the sector (SFC, 2012) as finance and expansion are based on market-led reform (Brown & Lauder, 1995). A period described as "the decade of the market" where consumer choice and competition between HEIs are taken as effective ways of greater efficiency and reducing costs (Halsey, 1997, p.640).

Increasingly, the effect of the market philosophy on the sector has been underfunding (Bathmaker, 2003). This requires universities to be more pragmatic and innovative in their approach (SFC, 2014). This implies that majority of the UK funding allocation systems are now organised on the same market principles to facilitate competition among education providers and tighten contractual relationships between users and providers. Herein market philosophy argues that: rather than using the controlled system or bureaucratic rules, reliance on market mechanisms (including students' recruitment) allocate resources more efficiently (Atkinson, 1999). Thus, efficiency can be achieved through entrepreneurial responses to societal demand and expectations than using bureaucratic or controlled mechanisms to decide what to serve the society.

Given the need for expansion, quality and diversification of funding stream from reliance on teaching and research grants to generating income through different streams such as promoting new programmes when funding competition is heightened, the need to be more entrepreneurial become crucial for most universities. Within such a context, what are the main determinants that shape entrepreneurial university? Thus, research on the key determinants and characteristics has great potential to encourage HEIs to respond entrepreneurially to opportunities as they arise by engaging more in commercialisation activities.

34

On the other end, like other developed countries such as the United States, Canada, and Australia, the UK increasingly become a destination for overseas students to study (Logie, 2015; Browne 2010). The main argument here is that there are internationalisation opportunities for UK universities. Besides, in comparison to some other OECD countries, the UK appears to have a favourable context for innovation and a strong record of initiatives, economic and innovative activity as there is a growing interest across all levels (local, regional and national) supporting regional innovation policy (OECD, 2008). Therefore, the national background and historical context of the UK offers a unique case for undertaking this study following a series of great changes in the HE sectors.

The next subsection accounts for the gaps in the higher education settings in relation to universities' contributions to regional innovation.

1.2.3 Call for clarity on how universities foster regional innovation system

Apart from the European framework, there has been some discussion and earlier attempts to clarifying how regional innovation can be enhanced. For example, a project on competitive and innovative regions under the auspices of the '*OECD Territorial Development Policy Committee'* reported that Organisation for Economic Co-operation and Development countries and regions are struggling with how to best promote regional innovation (OECD, 2008), which therefore requires regional actors; government, industry, and universities to have adequate understanding of actions to be taken that can strengthen and support innovation capacity of their regions and have greater clarity on the most susceptible factors that influence and support innovation systems. As outlined further in subsequent sections of the same Report: "this is of significance because strong dynamics of innovation generation in regions are vital for the achievement of the goals set by national innovation policy and the outcomes of innovation can generally enhance the economic competitiveness of each region through the growth of organisational productivity" (p.11).

Arguably, the need for clarity on how regional actors (universities inclusive) can enhance their regional context through innovation becomes a significant motivation for this research. Thus, the UK as an OECD country has a heterogeneous landscape in terms of its teaching and research orientation, pre-1992 and post-1992 status that offers an exciting context where the determinants and characteristics of the entrepreneurial university can be empirically examined and learned by other universities in different countries.

The subsequent subsection outlines key debates associated with the entrepreneurial university.

1.2.4 Inconsistency in the interpretation of the entrepreneurial university

Another major motivation for this study is that though there is a considerable consensus that entrepreneurial university research is gaining momentum with a number of valuable special issues (e.g. Edmondson, 2010; Mitra & Edmondson, 2015; Shattock, 2005, 2009), dedicated to the field, yet research on the subject remains inconclusive and questionable.

The above-cited special issues are representations of different countries showing that entrepreneurial university is a topical phenomenon that widely spreads across the globe and welcomed into the higher education systems. The diversity of interest has led to a profusion of terms as will be discussed in Chapter Three that the entrepreneurial university is seen from the view of concept and context.

According to Goethner et al. (2009), little is known about the determinants of certain entrepreneurial activity such as spin-offs. Though other scholars (e.g. Bathelt et al., 2010; Beraza & Rodríguez, 2012; Mustar, et al., 2006) have researched the typologies of the spin-off, yet there is a lack of understanding based on the use of various overlapping terms (Fryges & Wright, 2014). This means that the determinants and characteristics of the entrepreneurial university remain questionable. Further to this, and while current literature

36

in the field has utilised case study approach, there is a paucity of interpretivism approach application (Packard, 2017) in entrepreneurship research, meaning that there is a methodological gap. The detail of the methodological gap is provided in Chapter Five.

In the next subsection, the gaps associated with the Times Higher Education award for entrepreneurial universities in the UK are highlighted.

1.2.5 Paucity of empirical research on the NCEE Award

Finally, and as will be discussed in detail in Chapter Four, at the national level in 2004, the UK government established the National Council for Graduate Entrepreneurship (now the National Centre for Entrepreneurship in Education- NCEE) to use its networks, partners, and resources to stimulate and encourage a more entrepreneurial education in the country. In 2008, the organisation started to award THE EUYA to an institution that outstandingly meets four key enterprise-related criteria.

To date, all the universities that have won the Award have distinctively demonstrated certain aspects of their business strengths which are unique to each of them, yet their determinants remain under-explored. Given the wider environmental impacts (economic and social) associated with the entrepreneurial university, there is the need for best practice framework to help other universities raise their entrepreneurial profile. Though the general idea- to meet social and economic need could - be a simplistic approach to a complex issue, it is challenging for some universities to transform toward entrepreneurialism.

Given that the UK government through the NCEE organisation has taken a great stride in fostering entrepreneurship using the supplement award as a measurable milestone for entrepreneurial recognition, this thesis was conducted during a period of actively engaging universities with the award (2008-2015), and because of this, signifies a unique national case. The final motivation for this study is that despite the suitability of the UK as an exciting research context, there is a dearth of in-depth empirical research that attempts

to investigate the factors shaping these self-defined entrepreneurial universities. Therefore, there is considerable potential to raise the national competitive advantage and advance the UK economy through more universities becoming entrepreneurial.

The **key issues arising from the contextual and conceptual analysis for this research** could be summed up as a lack of clarity in the components of the entrepreneurial university. Therefore, this leads to the need for a holistic perspective on the core determinants. There is insufficient empirical research across the UK countries and the paucity of literature on the taxonomy of factors of the entrepreneurial university. There is also a need to modify the European framework within the UK context by considering the local and national environments including the different universities' status. In doing so, I clarified between the determinants and characteristics of the entrepreneurial university. The paucity of empirical analysis on how important for certain universities to be self-defined as entrepreneurial is another key issue. Primarily, the motivation for this thesis is the modification of the European framework thereby advancing the understanding of the entrepreneurial university phenomenon.

It is against this contextual background, the increasing acknowledgment of engagement in entrepreneurial activities in developed countries (Farsi et al., 2012; Hewitt-Dundas, 2015; Mudde et al., 2015) that the study of UK HE context outlined in the section 1.3 was devised and constructed to fill these gaps. Therefore, the next section outlines the research objectives.

1.3 Research objectives

This research modifies the European framework in relation to how it applies to the UK by exploring how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'; and in doing so, it clarifies between their determinants and characteristics. Accordingly, the following three research objectives were formulated to achieve the stated aim:

38

Research objective 1 (RO1): To explore the key determinants influencing the development of UK self-defined entrepreneurial universities.

Research objective 2 (RO2): To identify the distinctive characteristics of UK self-defined entrepreneurial universities in their own context.

Research objective 3 (RO3): To develop typologies of UK self-defined entrepreneurial universities.

The succeeding section discusses the contributions of this study.

1.4 Research contributions to knowledge and practice

This research is one of the first to focus on detailed determinants and characteristics of UK self-defined entrepreneurial universities and therefore substantially add to the understanding of the entrepreneurial university phenomenon. The identification of the taxonomy of key factors for the entrepreneurial university is useful in both academic research and practice. The taxonomy will be useful in various ways: to track and plan progress of university transformation towards becoming more entrepreneurial, to assess and review the strengths and weaknesses of entrepreneurial transformation, and to identify a key aspect of the entrepreneurial transformation that requires the allocation of more resources (including funding).

This theory-oriented research advances theoretical knowledge at the university level by particularly contributing to entrepreneurship and strategic management literature as well as the higher education studies in general. The contributions of this study may be relevant to the higher education sector such as universities, other higher education providers, education policy planners, future researchers, and students; UK universities funding councils: HEFCE, Scottish Funding Council (SFC), Higher Education Funding Council for Wales (HEFCW) and the Department for Employment and Learning (DfEL) as well as the business sector such as SMEs with whom universities are urged to collaborate with. Thus, engagement is now a central university's business (O'Shea & McDonald, 2015) and such

business includes knowledge transfer activities (Harris, 2011). Figure 2 below summarised the potential beneficiaries of the contributions to knowledge and practice/policy.
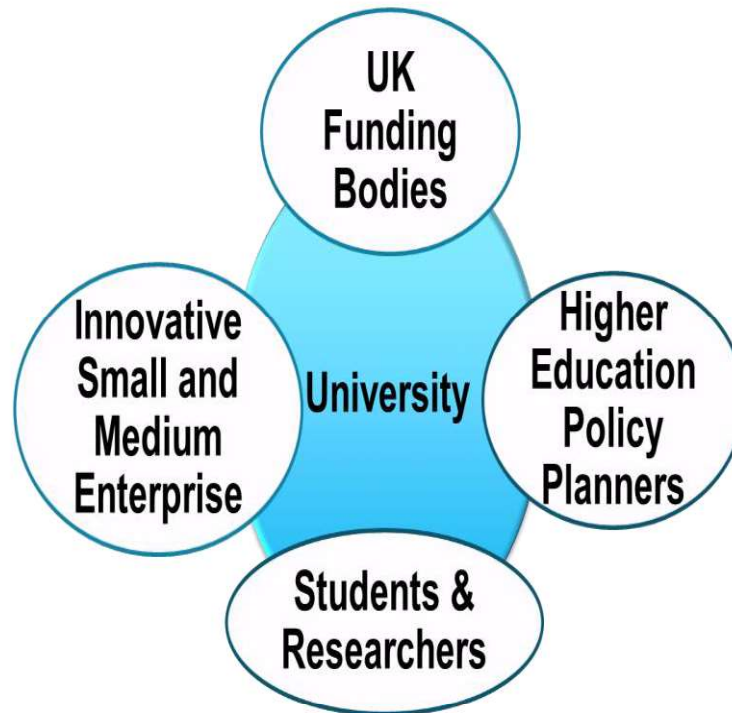
Figure 2: Beneficiaries of research contributions to practice & knowledge

Source: Author's own

The diagram provides a link between the organisations that will benefit from the research outcomes. This is crucial because it places the university in the centre as the primary beneficiary and shows the non-linear connection to other beneficiaries in the group. In doing so, it reflects on the multilevel relationships co-evolving between the individual, business, industry, university, and government.

The significance of the study to SMEs is that their innovative ability is hindered by size limitations, the inadequacy of resources in terms of financial, intellectual property

protection, small innovation portfolios, insufficient networks to utilise internal and external knowledge (Narula, 2004; Witty, 2013) amongst others. These deficiencies continue to trigger their working relationships with universities. However, their potential roles in providing employment opportunities have given them priority in the Horizon 2020 initiative to strengthen their innovation capacity (European Commission, 2015). For example, in England, 39 local enterprise partnerships (LEPs) were established to support university-SMEs engagement (Bonner et al., 2015; HEFCE, 2015). Besides, 90% of university-related companies are SMEs (Mitra & Edmondson, 2015).

The link is that while universities are involved in the creation or co-creation of knowledge and innovation, SMEs utilise their outputs and results through job creation and innovation. In this regard, the Higher Education Funding Council for England (HEFCE) initiative, particularly the Higher Education Innovation Fund (HEIF) is being initiated to support university-SMEs collaborations (HEFCE, 2015; Witty, 2013). Therefore, the study will enhance their understanding of the entrepreneurial university setting by helping SMEs in their choice-making of and decision-making on collaborations as well as where to train and educate their employees. However, the primary beneficiaries of the study will be universities in the UK.

Logically, whilst the lack of precision in the definition may render it difficult to arrive at a single, generally accepted definition for the concept, there is great potential to advance the phenomenon, in theory, in practice, and in the method. Theoretically, the emerging themes inform the basis of theoretical contribution in advancing entrepreneurial university by developing a taxonomy of factors of the entrepreneurial university, which may lead to a unified framework for understanding the entrepreneurial university phenomenon. Given that the selected institutions are located in the same country but in different parts (England and Scotland) with the broad consensus that geography and location matter in innovative and entrepreneurship activities (Audretsch et al., 2015; Feldman, 1994a, 1994b; Gjerding, 2005; Guerrero et al., 2014; Kempton et al., 2013), the development of theoretical insights from the case materials of multiple university models is a unique contribution of this study.

41

It reflects the diversity of universities (pre/post-1992 and research/teaching universities). In doing so, the research provides the beneficiaries with insights into the key determinants that interact to influence the development of and the elements of practices that characterise entrepreneurial universities.

Practically, being entrepreneurial and innovative in promoting and supporting enterprise-related activities are currently challenging task for many universities (Mitra & Edmondson, 2015). Consequently, having the capability to be involved in any entrepreneurial activity require innovativeness, proactiveness, visionary and risk-taking (Chandy & Narasimhan, 2011; El-Annan, 2013; Eyal & Kark, 2004). Therefore, universities need help in building synergies between education, research and entrepreneurial missions (OECD, 2015). Here, innovative and impactful research of this nature plays a crucial role by providing in-depth scrutiny of the self-defined entrepreneurial universities hoping to encourage other universities in the transformation of becoming more entrepreneurial. Besides, in terms of diversity, this research could aid education policy for entrepreneurship in other countries because it provides detailed insights into different university orientations (teaching-oriented and research-oriented). Feasibly, the European Commission has advocated for the sharing of good practices to stimulate entrepreneurship in the society across all levels (CEC, 2003). As such, this thesis makes a timely contribution to the ongoing debates on how to make universities more entrepreneurial by analysing the UK universities with the hope to propose best practice framework that may improve the entrepreneurial practices and conditions for universities.

Also, methodologically by conducting an in-depth exploratory multiple case studies with focus on the determinants and characteristics of self-defined entrepreneurial universities, this study has implications to strengthen university entrepreneurship policy which again could help more universities to become entrepreneurial thereby increase the numbers of entrepreneurial campuses in the country which in turn will have positive entrepreneurial outcomes on the economy in terms of developing entrepreneurial talents and opportunities.

42

Further to this, while various scholars (e.g. Farsi et al., 2014; Guerrero et al., 2014; Salamzadeh et al., 2015; Williams et al., 2015) adopted institutional economy theory to identify formal and informal factors affecting academic entrepreneurship, some studies (e.g. Farsi et al., 2012) have applied the RBV only to conceptualise entrepreneurial university considering internal factors only. Others (e.g. Logie, 2015; Yusof et al., 2012) have utilised the CE concept only to focus on organisational factors of academic entrepreneurship in large organisations only. So, integrating both theory and concept is substantial.

Given the ways by which these authors have unpacked the application of these theories to the entrepreneurial university, there remains the issue of inconsistency in the academic literature.

Thus, there is a dearth of research: (i) utilising the CE as a conceptual framing (Yusof et al., 2012); (ii) applying the integration of the RBV with CE in entrepreneurial university literature; and (ii) taking into consideration both small and large organisations, which in this thesis, are universities of different institutional status (pre-1992 research-intensive and post-1992 teaching-oriented) and various sizes by total number of students' enrolment. Prior studies (e.g. Kuratko & Audretsch, 2013) have acknowledged that little is done on how the CE domains appear in practice. Others (e.g. Ireland et al., 2009; Sakhdari, 2016) highlighted that the understanding of the CE remains fragmented and non-cumulative. Some (e.g. Corbett et al., 2013) summoned researchers to explore how some of the most common forms (e.g. strategic renewal and venturing activities) of the CE are linked in practice. Thus, an important yet poorly understood phenomenon. Herein, I consider the evolutionary perspective of the RBV which is embodied in how the 'capabilities' of the organisations evolve in high levels changing context (Barney, 2001; Barnett, 2005; Makadok, 2001) with the strategic perspective of CE which is embodied in why some organisations outperform others (Sakhdari, 2016). This is considered as a novel combination to provide an innovative contribution to advancing knowledge and to inspiring future research in entrepreneurship outlet. Therefore, this research conceptually and

43

theoretically advances the entrepreneurial university phenomenon by providing an integrative best practice model.

Another methodological contribution is the use of diagrams as innovative research methods to probe thoughts differently and to generate fresh ideas (Waren, 2009), which is rarely applied to entrepreneurial studies. Previous studies (e.g. Logie, 2015) highlighted the need to advance qualitative methods in entrepreneurship research. Therefore, the application of such method is coherent with the social constructivist and interpretivism paradigm adopted in this thesis. This is because the emphasis is on the meaning and understanding of the entrepreneurial university phenomenon. In doing so, the use of diagram helps to capture and make sense of the different interpretations interviewee ascribed to the same question. Thus, the robustness of the research is grounded in developing best practice model from data.

Arguably, universities are engines of social and economic growth (DTI, 2006; Etzkowitz, 2013; EUA, 2003; Harris, 2011; Kempton et al., 2013; Lambert, 2003; Leitch, 2007; Witty, 2013), meaning that the more entrepreneurial the universities are the more the society become entrepreneurial for competitiveness. This then gives the country leading edge at international level and in turn a global impact. Therefore, research of this kind contributes to the entrepreneurship literature and higher education studies by introducing a best practice framework that could advance policies and practices of entrepreneurship in universities.

Having identified the gaps and discussed the contributions to knowledge and practice, the Table 1 below provides a summary highlighting the gaps, contributions, and implications.

Table 1: Summary of gaps, contributions, and beneficiaries

Gap in knowledge	Contribution (major or minor)	Section	Whom and why
The EC and OECD (2012) advocated for the need to take the framework further into a comprehensive and an innovative model. The lack of clarity on how the seven components of the EU framework apply to the UK (EC & OECD, 2012).	Major practical	1.2.1	Universities, policymakers, and government- to identify ways to be more globally competitive, to assess the weaknesses and strengths of entrepreneurial practices, and to suggest ways to plan and track progress.
The lack of data comparing sectors within a specific context (Lerchenmueller, 2015). This suggests exploring how the UK pre and post-1992 universities are considered 'entrepreneurial'.	Major empirical	1.2.2	UK funding councils and universities- to know what resources are required, where to put resources, and how to help them manage limited resources.
The OECD (2008) called for clarity on how universities can foster regional innovation system.	Major practical	1.2.3	The government, business organisations, and universities. For example, to help SMEs to decide about where to train and trade (provision of business space).
The paucity of interpretivism approach application in	Minor methodological	1.2.4	Entrepreneurship scholars- to advance qualitative research

45

Gap in knowledge	Contribution (major or minor)	Section	Whom and why
entrepreneurship study (Packard, 2017).			methods.
A few literature considered the application of the EU framework. For example, Hanon's (2013) personal experience of how the EU framework applies to the UK suggests a shortage of empirical analysis.	Major empirical	1.2.5	Universities and policy planners
The lack of visual collection and presentation of data in entrepreneurship research (e.g. Logie, 2015).	Minor methodological	5.5.2	Students and academic researchers.
Limited application of evolutionary RBV (e.g. Barney, 2001b; Barnett et al, 1994; Makadok, 2001). A need for more to be done with RBV as both internal and external analysis (e.g. Lavie, 2006; Venkatraman et al., 2008) and as strategic actions (e.g. Anggraeni, 2014).	Major theoretical	Abstract and Chapter 4	Students, academic researchers, professional practitioners.
A lack of coherent differentiation	Major		

46

Gap in knowledge	Contribution (major or minor)	Section	Whom and why
of CE activities (e.g. Corbett et al. 2013; Hind & Steyn, 2015) and the limited application of CE as a strategy (e.g. Sakhdari, 2016; Kuratko & Morris, 2018) suggest a need to understand the configuration of entrepreneurial activities within universities.	conceptual		

The following section sketches the structure of the overall thesis.

1.5 Thesis structure

This thesis is organised into eight chapters complemented and supported by charts, tables, and figures in the appendices for clarity and quality. Thus, the layout of the thesis is diagrammatically summarised in Figure 3.

Research gaps and contributions:

There is a lack of empirical research verifying the European framework in the UK HEIs context.

There is a lack of agreement on the definition and core components of entrepreneurial university.

There is a paucity of academic literature on the taxonomy of factors shaping Entrepreneurial University.

There is a profusion of terms and confusion of elements determining and characterising entrepreneurial university.

There are gaps in distinct model for understanding entrepreneurial university phenomenon.

There is a need to understand why certain universities are self-defined as entrepreneurial.

Research objectives:

Explore the key determinants of self-defined entrepreneurial universities in the UK.

Identify factors influencing the development of UK self-defined entrepreneurial universities.

Develop typologies of UK self-defined entrepreneurial universities.

Chapter 1
Introduction

Chapters 2, 3, & 4
Literature review

Contextual and conceptual

Resource-based

Corporate entrepreneurship

Conceptual and theoretical analysis

Propositions

Chapter 5
Research methodology

In-depth qualitative methods and exploratory multiple case

Desk exercise

Participant-led visual method

Semi-structured interviews

Chapter 6
Results

Thematic exploratory analysis and qualitative cluster analysis

Chapter 7
Discussion and analysis

Chapter 8
Conclusion & recommendations

Figure 3: An overview of thesis structure

Chapter 2 Literature review: Contextual background of the UK

Having sketched the structure of the whole thesis, this chapter provides a contextual and historical analysis of the UK higher education sector. The layout of Chapter Two is structured in the following ways. Section 2.1 focuses on UK Higher Education (HE) institutional context. Section 2.2 offers a scrutiny of contemporary literature on the key issues, challenges, and opportunities in the UK HE sectors. Section 2.3 presents literature on the roles and contributions of universities to the UK economy. Section 2.4 discusses the background of the UK Times Higher Education Entrepreneurial Award. Section 2.5 explains the relevance of the ASHOKA accreditation to the university domain. Section 2.6 provides a summary of the chapter.

2.1 UK higher education institutional context

Universities in today's world operate in a knowledge-based and technology-driven economy that require a transition from teaching and research to entrepreneurial for global competitiveness. Consequently, the notion of the entrepreneurial university has become an integral aspect of socioeconomic aspirations and growth of many countries including the UK. This transition led to unprecedented challenges for universities. The investigation of the UK as a research context has a well-established industry link, is mature with a well-developed higher education system and has differentiated characteristics of old and new universities in terms of post-1992 and pre-1992. From a total of 28 self-defined entrepreneurial universities in the UK, this study examines 15 self-defined entrepreneurial universities across England and Scotland selected via the National Centre for Entrepreneurship Education (NCEE) Times Higher Education Entrepreneurial University of the Year Award (THE EUYA). Before proceeding to discuss this award, it is important to discuss what constitutes the UK higher education setting. Therefore, the next subsection looks at the historical background and composition of the UK higher education institutions as well as where universities sit.

49

2.1.1 Historical background and composition of the UK HEIs

Higher education institutions (HEIs) are independent, self-governing bodies established by Royal Charter or legislation and are mostly funded by the government with active roles in education, research, and scholarship (ECCTIS, 2012). The UK higher education (HE) providers comprise higher education colleges, universities colleges, universities and specialist HEIs (UUK, 2012a), whose charters and statutes are made through the Privy Council. The Privy Councils are advisory bodies to her Royal Highness for granting Royal Charters and Incorporation to universities (ECCTIS, 2012).

There are 166 HEIs in the UK, of which 119 are universities including two private universities (Guardian League Tables, 2016), meaning that the majority of UK universities are publicly-funded which has implication on this research in terms of the selected case institutions all been publicly funded universities.

The title 'university' is a legal power bestowed on any HE designated or recognised body to design its own courses and award its own degrees. The term 'new university' is applied to the former polytechnics such as "Huddersfield and Portsmouth" amongst others (Committee on Standards, 2010, p. 23). UK Universities are named after the place in which they are based (Committee on Higher Education, 1963).

As indicated earlier, the majority of the UK universities are public; that is, they are government-funded, the total HEFCE grants allocated for the 2015-16 academic year was £3,971 million (HEFCE, 2015a), the total HEFCW grants allocated for the 2015-16 academic year was £3,617 million (HEFCW, 2015b) and the total SFC grants allocated for the 2015-16 academic year was £1,041 million (SFC, 2015b). It is not surprising that the allocations vary between the countries and one of the reasons seem to be based on their sizes as shown in Table 2 (subsection 2.1.2). However, universities are competing for funds.

The funding issue is linked to size, diversity, and complexity in the sector, which has an influence on how the fund is allocated. This was reinforced in the letter of guidance to the SFC in September 2011, when indicating by examples about Highlands and Islands University and the Crichton Campus targeting local population, it states "…rather than the

old-style fixed method I would encourage a shift to a more distinguished and outcome-oriented method, with emphasis on retention" (SFC, 2011, p.5). While this has been suggested as a transformation in funding from income-based to outcome-focus method, using retention as a metric, there may be biased on the basis that some universities are in the high-density area while others are not, and that the choice to remain or engage in further study with the same university is contingent on the students. Therefore, the contingency based approach may be taken into consideration.

Such instruction has been outlined in paragraph 23 of the same letter whereby the Scottish Government clearly stated that "My expectation of the knowledge exchange investment is to support pre-1992 and post-1992 universities in a more strategic manner" (SFC, 2011, p. 5). Whilst the size of individual university considerably varies in terms of average size of students' numbers as depicted in Table 2 (subsection 2.1.2), it may be observed that each university is significantly unique in their local context and of significance to the UK national economy either individually or taken collectively as a sector.

The next paragraph details how various universities are positioned based on their traditional power and status.

2.1.2 Pre-1992 and Post-1992 universities vis-à-vis research and teaching

The need to "provide more students' places" brought about the advent of The Further Education and Higher Education Act 1992 (Committee on Standards, 2010, p. 23). The Act has not only granted university status to "48 polytechnics" (Wyness, 2010, p. 9) but also explicitly divided UK universities into two main groups: the "Pre-1992s and Post-1992s" (Bathmaker, 2003; Harris, 2011, p. 4). Therefore, the next paragraph explains the differences between these two major universities groups.

The pre-1992s include the universities that claim to be research-intensive and to reflect their size and quality of research contributions; they are sub-divided into- Russell Group which are classified as the "24 major research-intensive" universities (Boliver, 2015, p. 608) and the 1994 Group which are the "small research-intensive" institutions (Shattock, 2013, p. 217). The post-1992 universities are more teaching orientated reflecting their polytechnics past, which are considered as the modern or 'New Universities' with a change of university status criteria. Most of these universities identify themselves as the Million+ Group; that is, institutions working towards solving complex issues and some are members of the University Alliance Group having a broad-based collection.

Similarly, some scholars (Bathmaker, 2003, p. 4; Boliver, 2015, p. 608) classified UK universities into two distinct "clusters". First, the pre-1992s as 'Old universities' which are characterised by higher levels of research activity, greater wealth, more academically successful and socio-economically advantaged student intakes with some of them identified as the higher status universities (Oxford and Cambridge) that emerged to be distinctive elite tier but have similar levels of teaching with their co-institutions. Second, the post-1992s as 'New Universities' with around a quarter of them being clustered as lower tier. These different groups evolved because of changes in the university sector in the nineties and thus, represent institutional history for that period. Yet, there remains a dearth of academic literature on how different types of universities are evolving through changes in

the UK university sector in the twenties. Therefore, one of the objectives of this thesis is to identify a typology of British self-defined entrepreneurial university. In doing so, this thesis tends to reflect the UK HE system of today.

Table 2: Overview of the UK university sector and key measures

Country	Number of Universities (2013/14)	Average Size of Institutions by student numbers (2010)	% of UK Research Council Money secured (2009/10)	% of UK Research Money from Industry (2009/10)	% of 3* and 4* Research in 2008 RAE	Number of Universities in Times Higher Education World University Rankings Top 200 (2015/16) **	Number of Universities in Times Higher Education World University Rankings Top 400 (2011/12)	Spin-off Companies Created (2007/11)
England	129	15, 982	80.4%	77.9%	55%	27	39	346
Scotland	19*	11, 627	14.7%	17%	52%	5	8	70
Wales	10	11, 626	3.3%	3.9%	49%	1	4	5
Northern Ireland	4	12, 748	1.5%	1.5%	50%	1	1	11
Total	162					34	52	432

Source: Times Higher Education (2012, p. 1); Total numbers of UK HEIs- GRAPHIQ (2015) and REF (2014); * Kemp & Lawton (2013, p. 68); ** Sellgren (2015)

54

Table 2 shows that most UK universities (approximately 80%) are in England which is not unexpected given its relative size and income figures amongst others. Although it simply appears to highlight statistics associated with universities, it might be argued that Wales underperforms in terms of spin-offs. The Table does not only show the numbers of universities by each country but also conveys that the competitive elements of teaching, research and entrepreneurial are research funding, students' recruitment or attraction and industrial engagement via commercialisation activities.

As an example, in terms of teaching, students and employers expect universities to take the employability agenda into consideration when developing their curricular and extra-curricular activities; in terms of research, the research excellence framework (REF) requires universities to consider the impacts of their research on the wider environment; and in terms of enterprise, governments across different levels consider universities as key drivers of economic progression providing pipeline of innovative or new business start-ups. For universities to meet these demands, they need to embrace enterprise and entrepreneurship in a unique approach (Mason, 2014).

In addition, the Table seems to summarise the distinctive characteristics, needs, and traditions of the provisions of HE in different parts of the UK and the extent to which universities need to meet the circumstances of the country and beyond. With the measures used to organise the Table, it could be argued that whilst there are commonalities between the countries there are also some differences. In common, Scotland, Wales and Northern Ireland have a relatively small number of institutions which differentiated them from England. Based on the commonalities between the three countries, paragraph 23.5 of a National Report outlines that:

"It encourages mutual interaction between the universities, coupled with a sense of belongingness and a strong belief that they have a responsibility towards the cultural and economic contribution of their countries. While there is competition between universities, small number fosters closeness which in turn provides collaboration opportunities and readiness to explore those opportunities. […] the sense of identity is a crucial aspect that

shape how institutions respond to regional problems and relate to one another" (National Report, Website, p. 23.5).

This gives a message that while there is mutual engagement between universities; they are operating in a competitive environment. Consequently, universities compete for research funds, students, and reputation for excellence. It is a competition for both human and financial resources involving more institutions cannibalising to attract the brightest students and striving for limited research funds. Besides, working within an innovation system based on the interaction between the industry and government institutions is another complex relationship for universities.

Therefore, the following section outlines the issues and challenges in the UK HE context in relation to teaching, research, and public (external) engagement.

2.2 UK higher education: Key issues, challenges, and opportunities

In the UK, the most notable issues and challenges are underfunding expansion and government requirements. In the 1990s, the financial crisis in HE sector led to a combined effect of expansion and underfunding (Watson & Taylor, 1998), which was the immediate issue the Dearing Committee was commissioned to look into (Bathmaker, 2003). While the country continues to face significant periods of austerity, the UK government intends to further reduce public spending by £20 billion but in contrast, the Scottish Government signaled an intention to "adopt different approach" (SFC, 2015a, p. 1). The Scottish approach is a continued effort to explore every opportunity and work with various stakeholders across and beyond the public sector for the advancement of the country in a fair manner.

The changes in the funding system led the university sector to work differently. By examining the English Higher Education context, Goddard et al. (2014) described this as moments of uncharted waters for the sector following the 2010 Spending Review. Likewise, the most recent Scottish Government's letter of guidance addressed to SFC expresses clearly that entrepreneurial approach is a way out to solve this issue when it states that:

"The current constitutional context, however, requires universities to be hard-headed about the resources available. Therefore, it is a priority for all our public bodies and those receiving funding from the public purse to examine continuously and creatively, through clever collaboration and a learner-centred approach, we can focus on improving the delivery of transformative services, such as education, which can make a difference to our lives" (SFC, 2015a, p. 1).

It was further reported that since 2011, UK universities are undergoing prolonged turbulence time in their environmental contexts in terms of policy, funding arrangements as well as recruitment patterns (UUK, 2013). In the light of these changes and taken together with all these new directions in government policy with a greater focus on both fees and consumerism, increasingly this is leading to intense competition and market segmentation in the sector. Competition for funds now become an integral part of university management (Committee on Standards, 2010). This suggests that the UK HE sector is not only challenged on maintaining research quality but also improving teaching standards and increasing external engagement activities.

Therefore, the significant challenges currently facing UK universities ensued from (i) REF- an impact assessment as a tool for funding university research (Martin, 2011). The relevance of REF to this thesis lies in two parts. First, the notion that research leads to innovation and second, the increased expectations of universities in public engagement activities by funders and policymakers; (ii) Teaching Excellence Framework (TEF)- a continuous effort to improve teaching and learning quality (Mellor et al., 2016); and (iii) the outcome of the 2016 EU Referendum (BREXIT)- the issue around employability agenda and employment market in terms of the UK university sector operating in a globally competitive market. The concern is that the presence of the Brexit may disintegrate UK from the rest of the EU thereby resulting in a major challenge for the HE sectors. Especially, for universities, it is in terms of access to EU grants and funding, their collaborative initiatives with other EU universities and organisations as well as future international students' attraction and retention. Also, it has begun to influence top academics relocating to universities outside

57

the UK because they have not been able to recently undertake joint research with their mates in the EU horizon, said Phil Baty (BBC, 2016).

Another point for consideration is that the academic community constitutes EU, international and home students and staff, the deep concern is about what the decision to leave the EU will mean for the UK universities. Specifically, within the context of this research, what it will mean for EU funding and collaboration as well as the UK HEIs participation in EU programmes (ERASMUS+ and HORIZON 2020). Answers to this significant question are yet to be widely published (Burnett, 2016). This could be an avenue for further research to consider how EU research funding, network, and collaboration will be negotiated and protected. These three main issues, their requirements and outcomes in terms of universities becoming more entrepreneurial could be diagrammatically interpreted and presented as thus:
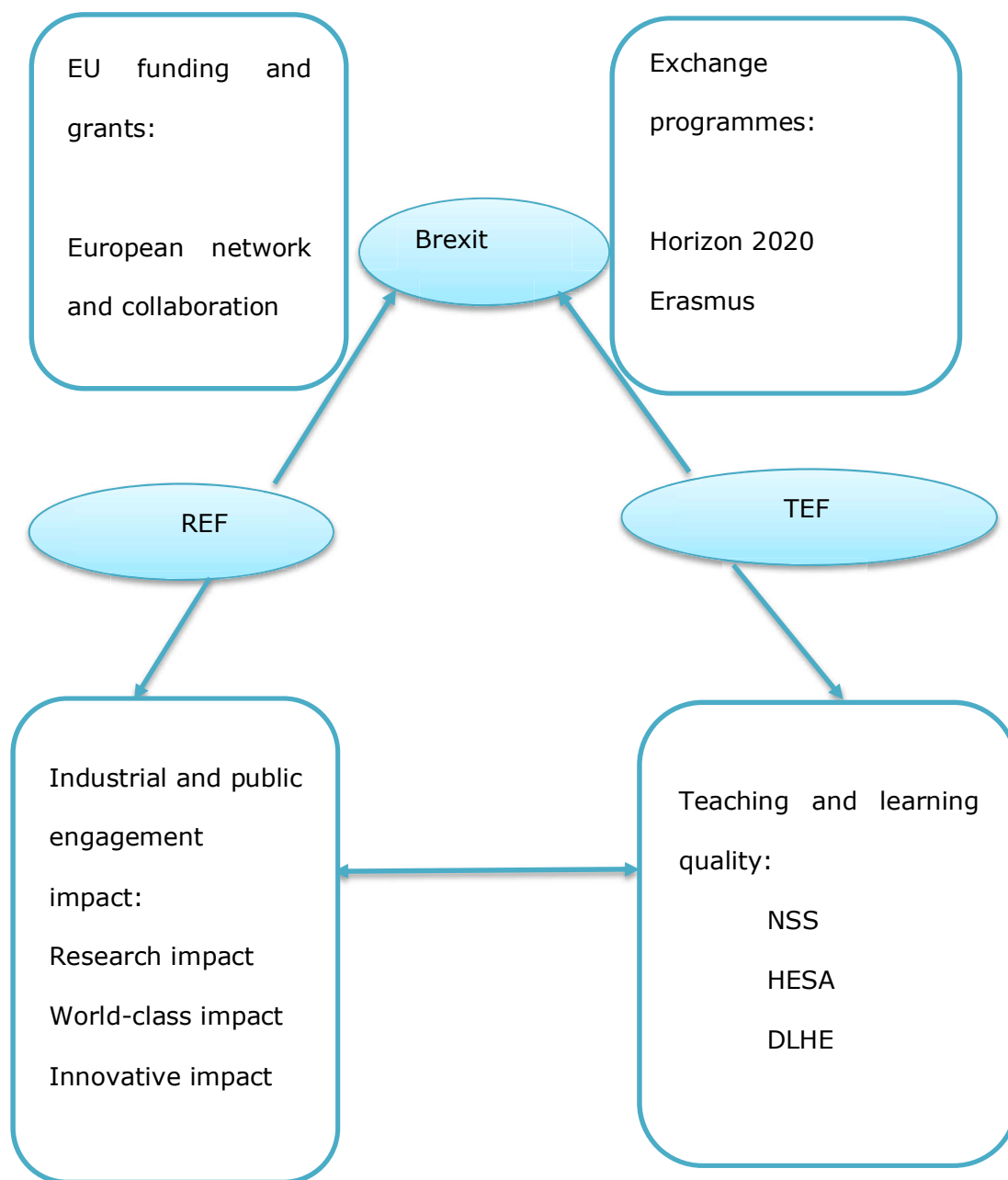
Figure 4: Market and competitive environment facing UK HE sectors

Source: Author's own

As shown in Figure 4, providing quality education, improving research quality and maintaining research capacity as well as fulfilling the industrial engagement agenda is a significant achievement in a knowledge-intensive competitive environment at regional, national and international level (Mitra & Edmondson, 2015; Philbin, 2015).

These demands led the UK HEIs to be strongly involved in an internationalised student market. In a globalised student market context, teaching and research alone cannot assist universities in sustaining the entrepreneurial and market-led struggle (Clark, 2004; Geiger, 2004) and as such diversification of HEIs income stream become a concern for universities. By reflecting on this complexity, Logie (2015) reports that it requires universities to adopt a business-like method and can cope with the ambiguities of a changing context.

On the basis of the globalisation of the student marketplace and diversification of funding streams, the HE sector is heavily characterised by customer-focused placing emphasis on meeting customers' need (Stromquist & Monkman, 2000). These political and economic changes are complemented by more and more threats in the external environment of the HE sectors. In such uncertain business dynamism, there is a tendency for the "proliferation of for-profit commercial UK HEIs" (Logie, 2015, p.17). This becomes a great issue for university leadership and management to have planned strategies that assist their institutions in driving from a short-term agitation to long-term stability. Thus, it becomes essential for HE providers to reorganise their hierarchical bureaucracies to more adaptive organisational forms that can respond swiftly to changes and opportunities as they arise (Logie, 2015). In this regard, one of the major "market differentiators may be a changed culture" that facilitates "quick decision-making, immediate action-taking, collaborative engagement or empowerment, and constant learning" (Universities Human Resources, 2012, p. 10).

In terms of income diversification, universities are increasingly looking for alternative ways to attract income than relying on government for most of their funding. It has been reported that overcoming funding issue and "maintaining a healthy level of diversity in the way funding is allocated" is a prime priority for European institutions (Esterman & Pruvot,

2011, p. 8). Likewise, it was highlighted that the UK universities have been "able to embrace change through the modification of their financial strategies" to help them tackle unforeseen circumstances as well as continuous "focus on achieving excellent performance" (UUK, 2013a, p. 2). Williams (2009) outlines that universities adopt different mechanisms for income diversification such as developmental fund, tuition increase, relationship with enterprises, knowledge commercialisation, alumni and charity donations.

One other means of diversification is externally generated research income, as the Welsh Government states that "…to increase both the quality and volume of both industry-led and internationally-renowned research undertaken by Welsh universities and our level of externally-derived research income, especially, in our priority sectors and to exploit more effectively the research for the gain of the Welsh economy" (HEFCW, 2011, p.6). In doing so, universities must respond "entrepreneurially in a highly competitive environment" (Gibb et al. 2009, p. 7). The issue of diversifying funding sources requires university leaders and managers to provide support for the identification of opportunities for new national and international marketplaces and find innovative means for the commercialisation of knowledge (Logie, 2015).

In a highly demanding business context, opportunity exploitation and exploration for IEEC within the HE sectors becomes a significant issue for universities to consider. Given that the two most commonly cited economists are: the Schumpeterian and the Kirznerian, the former sees opportunity as business-oriented of radically new inventions which are aimed towards economic growth (Schumpeter, 1934); that is, the radical approach to innovation. The latter sees opportunity as arbitrage without any innovative activity (Kirzner, 1973) thus, move the economy towards "production possibilities frontiers" (Sanders, 2007, p. 340); that is, the incremental approach to innovation.

This sets the background for the UK national context in terms of the most challenging periods faced by the higher education sector. The next section considers the roles and contributions of UK HE sectors to the society.

2.3 Roles and contributions of universities to the UK economy

Various policy documents (Browne, 2010; Committee on Higher Education, 1963; Dearing & NCIHE, 1997; Jones, 2008, 2009; Wilson, 2012), practitioner materials (DBIS, 2013, 2014; UUK, 2014b) and some academic works (e.g. Nelles & Vorley, 2010) have sought to provide in-depth discussion about the roles and contributions of UK HEIs to the social and economic well-being. As a starting point, the first officially-sponsored Dearing Report of 1997 after the Robins Report of 1963 to investigate the UK HE system, to provide a solution to immediate problems and to predict the future, envisioned:

"In 20 years to come, Britain must develop a community with a commitment to learning throughout life. This all-level commitment includes education and training providers. Education is life-enhancing and as such, it becomes a central aspect to achieve an enriching life" (Dearing & NCIHE, 1997, p. 1). These statements emphasise universities' role in economic development via a pioneering teaching and education. The evidence that such vision has taken effect is reflected in the funding and high-level objectives of the Scottish Government when paragraph 5 of the 2015-2016 Letter of Guidance to SFC states that:

"A strong and effective higher and further education sector, delivering social and economic benefits for Scotland, is a key overarching objective for the Scottish Government. That is why, notwithstanding financial constraints and pressures, funding levels have been maintained…"(SFC, 2014, p. 2). These are proven comments appropriate to describe how HEIs fostering entrepreneurial mindsets leading to an entrepreneurial and innovative nation. To crystalise the HE role, one of the HEFCW reports, highlights that through teaching and research the HE sector "contributes significantly to social justice by developing people with skills and attributes to succeed and prosper" (DfCELS, 2009, p. 1). Extending beyond education and research, Altbach (2009, p. 5) reports that there is the hype surrounding the "call for universities to accomplish complex roles in the society with limited resources" which has shifted their education and research roles to active engagement in entrepreneurship. As such, for universities to optimise their performance in a competitive market environment

offering business support to organisations, they must demonstrate their ground-breaking capabilities and innovative activities (Wilson, 2012).

The UK HEIs teach over two million students yearly with an annual income of more than £30 million (HESA, 2015). As such, the sector has a wider economic impact as well as individual university success. For example, between the periods 2007-08 universities contributed approximately £60 billion to the UK economy (Faust, 2010) and are anticipated to generate £17 billion of annual export earnings by 2025 (UUK, 2012b). Though this has a national impact, it also carries a global implication perhaps, Britain is recognised as the second country after the U.S in terms of high-quality education (Browne, 2010).

In the last two decades, the third mission idea has been welcomed into the HE context as an articulation of the commercial engagement of universities (Nelles & Vorley, 2010). Increasingly, the business involvement becomes the backbone of both regional and national innovation strategies. UK HEIs have broad contributions that extend well beyond the development of individuals to knowledge advancement for societal and economic benefits (Committee on Higher Education, 1963; Dearing & NCIHE, 1997). From 1997-2007, the growth rate averaged 3.2%, a major contribution from the knowledge-intensive sector which accounted for half of the real growth and the fastest growth was in the information economy such as that of the education. Thus, the sector has increasingly become the centerpiece of economic growth.

In 2013, UK GDP amounted to £1.6trillion, the 5th highest in the Group of Seven advanced economies; above Canada and Italy but behind the USA, Germany, Japan, and France. Despite this trend, the education sector is challenged to maintain its stance considering it transition from education and researching towards the entrepreneurial objective, particularly, working with multiple agencies. Another significant contribution is the drive away from manufacturing towards services industry, especially, the shift towards the knowledge-intensive services. The knowledge services which is described as a most innovative sector (OECD, 2014c), well known for contributing a third of output and a quarter of total employment in the UK.

63

Despite these significant contributions, the education sector is often perceived as reluctant to change and averse to innovate (OECD, 2014c) therefore requires some encouragement which may be attained through research dissemination. It is in this context that the determinants of British self-defined entrepreneurial universities examined in this thesis have a substantial contribution.

In view of the above observation, since there is a link between the education sector and the UK economic growth and performance, such sector needs to be properly guided through innovative research of this kind to preserve its novel entrepreneurial edge. Next, institutional changes in terms of the awards that specifically reflect entrepreneurialism are discussed.

2.4 The times higher education entrepreneurial university award

In 2004, UK government established National Centre for Entrepreneurship in Education (NCEE) to use its networks, partners, and resources to stimulate and encourage a more entrepreneurial education in the country with its administrative headquarters based within Coventry University Technology Park in West Midlands.

Technology or science parks is a defining characteristic of the university being entrepreneurial (Etzkowitz, 2013c; Kirby, Guerrero, & Urbano, 2011) and by locating the Head Office within Coventry University is an explicit demonstration of its entrepreneurial edge. Besides, by many measures, the West Midlands is one of the most innovative regions of the UK economy after London (THE, 2015). As well as being a high place for employment, which is historically dominated by manufacturing with major employers such as Rover, Jaguar, Wedgwood, JCB, and Cadbury. The region has the largest exhibition center in the UK, the National Exhibition Centre with an estimated income of over £20 million generated into the regional economy (Medlan, 2012), meaning that it is an attractive place for individuals and organisations both within and outside the country.

Despite these benefits, and with 12 HEIs in the region, in the second quarter of 2009, it has the highest proportion of working-age population (14.5%) with no qualification

in comparison with the national figure of 11.2% for England (Medlan, 2012, p. 18). Therefore, West Midland is remarkably known for "less engagement in HE and entrepreneurial ambition" (Lockyer & George, 2012, p. 179). This shows that there are less qualified people in the region at that time. In 2007, it was one of the four English regions (others being North East, North West and Yorkshire and the Humber) to receive the highest allocations in terms of "enterprise and economic development (101) and education and training (1,131) GBP per capital" (OECD, 2008a, p. 123). The statistics indicate that it is a high need region for entrepreneurial talent development.

Consequently, the continuous support of enterprise-related activities by the UK government is shaping how the region (universities inclusive) serves the society by producing entrepreneurial talents. By having the NCEE administrative office in a region approximately 96 miles (via M1) from London, which is the country's capital facilitates the connection with and access to businesses, universities and innovators both internally and externally. Perhaps, networks and connection are significant in the entrepreneurial agenda of universities. Etzkowitz and Dzisah (2015, p. 10) capture this well stating that "permeated with entrepreneurial motives and strategic image, an institution cooperates with other players to connect discovery with the application".

The reason for using this award was because as at of the time of writing other national awards, particularly those focusing on entrepreneurial universities have not been well-established to obtain adequate information needed for a comprehensive analysis. Also, there is scanty literature focusing on both entrepreneurial and un-entrepreneurial university. However, this thesis is limited to comparing entrepreneurial and un-entrepreneurial institutions, however, this can be an avenue for further research.

Each year from the list of six finalists shortlisted, an institution is chosen by the judges as the one that best exemplifies the tenets of an entrepreneurial university in its achievements. As published on the NCEE official web page, the most outstanding university is selected based on four criteria: (i) entrepreneurial impact on the society and university itself; (ii) innovative and entrepreneurial staff- culture and mindset that inspire entrepreneurial staff; (iii) student engagement- strategy and vision on enterprise and

65

entrepreneurship education; and (iv) institutional environment- policy and practice capable to be responsive and adaptive to wider institutional environment (NCEE, 2015).

According to the Chief Executive Officer of NCEE, "the number of universities entering varies from year to year typically between 12 and 20" (Email message, 2014) and since the Award has been initiated in 2008, out of nearly 166 (BUFDG, 2015; Jarboe, 2013; Logie, 2015; Stevenson & Mercer, 2013; THE, 2014; UUK, 2014a) HEIs, twenty-eight have been shortlisted out of which eight universities have won. Though relatively small number; meaning that some universities out there are entrepreneurial but not have applied. So, this generates the question of how important the award is for these twenty-eight universities to be self-defined as entrepreneurial. While this will be explored in this study, however, it is neither within the scope of this study to identify those not applying nor investigate why they are not applying but could be an avenue for future research.

It was observed that these universities represented various UK university status particularly pre-1992 and post-1992. These mission groups correlate well with this research as it aims to establish the dominant determinants of the self-defined entrepreneurial university. By having a combination of the different mission groups with their different subject orientations, the result has the generalisability potential. More detail on the generalisability of the study is provided in Chapter Five. An insight into the comparison of these university groups is a substantial response to the call for advancing entrepreneurship research with the comparison of sectors within a specific context (Lerchenmueller, 2015).

Further to this, to date, the universities that have won the Award all have distinctively demonstrated certain aspects of their business strengths which are unique to each of them, yet their determinants remain under-explored. Given the wider environmental impacts (economic, social and academic) associated with the entrepreneurial university, there is the need for best practice framework to help other universities raise their profiles in this aspect. Therefore, it is of significance to understand the determinants shaping entrepreneurial universities development and the characteristics epitomising them within the UK context.

66

As indicated earlier, there are other awards. For example, the newly introduced University Entrepreneurship Award for the November 2015 Lloyds Bank National Business Awards organised by United Business Media (UBM), a global event-led organisation connecting businesses with a targeted and qualified audience (UBM, 2015). This award was designed to inspire and measure university commitment to enterprise and entrepreneurship education. It was set up to recognise universities' effort for enterprise-related activities including enterprise societies, use of alumni entrepreneurs, small business internships to the extent to which the careers service offers start-up advice. Judgment is proposed to be made through the assessment of departmental or faculty support and entrepreneurship teaching or module available to students and graduates starting their own business each year including ongoing support for alumni start-ups (NBAs, 2015a). That is, the NBA focuses on a fraction aspect of the entrepreneurial university while the NCEE focuses on entrepreneurship across the university. The University of Leeds, the first winner of this Award, was pronounced in November 2015. However, while the NCEE award focuses on entrepreneurial elements across the institution, the NBA emphasises more students' enterprise.

Further study may be conducted on a comparative analysis of the two awards. As documented on the official web page of the awarding organisation, the award is to reinforce the spirit of competition across all sector and amongst universities to drive continuous improvement in their commitment to student entrepreneurship and for them to be assessed against their peers annually (NBAs, 2015b). Agreeably, these awards are creating a competitive atmosphere for UK universities because as the winners are publicised in the media or through other publicity forms such as having the badge on the cover page of their prospectuses (University Website, 2015), they are creating reputational images which allow them to be compared against competitors thereby making them stand out in the sector. For example, it was very interesting that the first NCEE winner, Nottingham shortlisted again in 2015 (NCEE, 2015). So, as fascinating as that is, why would it go back again? Outwardly, Nottingham continues to create an interesting impression about what it does in terms of

67

entrepreneurialism and that being entrepreneurial is a continuous approach. UUK (2014) captures this well stating that:

"Many overseas governments are continuing to finance and implement bold strategies to develop their countries' higher education sectors and their position on global stage. In this increasingly competitive international environment, the UK HE sector will continue working harder to rebalance its position, attract students, staff, funding, and partnerships that are central to its success" (UUK, 2014a, p. 27).

Henceforth, the entrepreneurial university idea sits within the capacity of generating structured strategy meaning (Clark, 1998), which may assist universities to be innovative (Hitt et al., 2001), gain leading edges and create wealth (Ireland et al., 2003). The entrepreneurial university is an approach to address the need to reconfigure the university to adapt to the competitive environment of the 21st century (Mainardes et al. 2011). Ferguson et al. (2015) summed this as: "Universities are competing in an environment in which only the most adaptable to sustainable change will prosper. In order to evolve in this challenging time, universities must embrace strategies for transformational change" (Ferguson et al.2015, p. 29).

Having scrutinised the political interventions and economic dimensions in the UK, the social factors contributing to the entrepreneurialism environment can now be discussed subsequently.

2.5 ASHOKA social innovation: Fostering entrepreneurialism

In today's HE sectors, there is potential for social entrepreneurship as a global movement to solve the world most urgent social problems. Thus, universities are pursuing the goal of social enterprise with the potential to fetch them the ASHOKA accreditation. ASHOKA was founded in 1981 by William Drayton as a not-for-profit organisation missioned to support social entrepreneurship related ideas and venture-capital organisations (Surie & Ashley, 2008). Its vision is to "develop the profession of social entrepreneurship around the globe" (Ruvio et al., 2010, p. 144). This vision expresses the wide-ranging values and hopes of ASHOKA without the expectation of instant tangible returns. ASHOKA is a network of

social entrepreneurs. By adopting the 'change making' approach, it is premised that building a network of a pattern-changing social innovator is the only way to solve the world's most pressing problems and challenges. The vision of the initiative is having the world where everyone is a changemaker.

The relevance of innovation in HE is reflected in the emergence of ASHOKA-U launched in 2008 as a leading global movement of social entrepreneurship (ASHOKA, Website). The ASHOKA-U networks constitute schools, universities, parents, students, and strategists with more than 3,000 fellows across 80 countries. At the institutional level, ASHOKA-U recognises designated colleges and universities as campuses taking an 'institutional change' approach to advance an education that develops interdisciplinary entrepreneurial and solution-oriented skills. Currently, the network has 30 colleges and universities, three currently from the UK. These are leading institutions in social innovation education. University of Northampton (England) is the first UK Social Enterprise University to acquire the ASHOKA status followed by Glasgow Caledonian University (Scotland) and Dublin City University (Northern Ireland).

Having discussed the economic, social and political arrangements of the UK HE context, the next section provides a summary of the chapter.

2.6 Summary

Despite the contributions and growth in the sector, universities are undergoing tremendous challenges in their roles due to various political, cultural, technological and economic factors (UUK, 2012a). The UK universities are on a transition from teaching and research to entrepreneurial. Where teaching is monitored and assessed by TEF, research is highly regulated by REF and entrepreneurial requires them to do more with less funding support. By being entrepreneurial, they must be flexible and open to engaging with multiple stakeholders including businesses. Complementing this entrepreneurial mission with the usual teaching and research functions that universities are well-known for is challenging for many universities across the globe including the UK. So, British universities could be more

69

globally competitive by operating through a best practice framework to advance policies and practices of entrepreneurship. Having provided an analysis of the UK context, the following chapter scrutinises the historical analysis of the entrepreneurial university conceptualisation.

Chapter 3 Conceptualisation of the entrepreneurial university

This chapter focuses on the conceptualisation of the entrepreneurial university. Taking into consideration the international context, the chapter also explains the differences and similarities in the definitions of different countries. The chapter highlights the challenges and debates associated with the different concepts used to describe the term. This chapter provides a detailed explanation of the strengths and critiques of the European framework. Since the meaning and interpretation of key terms are important to the understanding of the entrepreneurial university, the next section presents the term 'entrepreneurial' in both generic and academic perspectives.

3.1 An entrepreneur and the entrepreneurial: An overview

An entrepreneur is someone who takes risk and initiatives to organise and undertake any business (Chumas, 2014). Some scholars distinguished between entrepreneurs. For example, Dutta and Thornhill (2008) call corporate entrepreneur the analytic entrepreneurs who are relatively risk-averse thereby having an incremental approach to decision-making and problem-solving and an independent entrepreneur as the holistic individual who is less risk-averse thereby having a quantum approach to making decisions and solving problems. Extending on their view, Garrett and Holland (2015) describe corporate entrepreneurs as being faced with organisational, market and industry risks because they function within the prevailing framework, norm, and asset preservation context whereas independent entrepreneurs are confronted with personal risk because they operate on their own assets and are norm breaker. This implies that the decision to engage in entrepreneurial activities is determined by the cognitive styles of different entrepreneurs. Then, herein, an entrepreneur is associated with an organisation (university), indeed, corporate entrepreneur rather than embodied in the individual.

Autio et al. (2014) and Zahra et al. (2014) considered the term 'entrepreneurial' as a highly contextual phenomenon. Context influences and is also affected by entrepreneurial activities. Therefore, context can be a multi-level and bi-directional interaction within entrepreneurship (Welter, 2011). This contextualisation means that universities must actively engage with their external environment. This external engagement involves establishing working relationships with business organisations, industry, government, and the civil society. This attribute offers a contribution to the entrepreneurial university setting even more substantial, where the presence of different entrepreneurs and initiatives generate an added value to the economy. For example, while collaborative research is helping innovative-active small and medium-sized enterprises (SMEs) to increase their capability (absorptive capacity), it is changing the nature of HEI engagement from unidirectional knowledge transfer- consultancy to multi-dimensional- more interactive engagement (Bonner et al., 2015). The detail information on the relevance of this study to SMEs was provided earlier in section 1.4.

While in a general sense, the term 'entrepreneurial' is a way of maximising effective utilisation of entrepreneurial behaviour suitable for managing the task environment of any organisation (Covin & Slevin, 1991), in the academic world, the term 'entrepreneurial' is associated with the social systems (units, departments, faculties, and schools) of the entire universities (Clark, 1998). The social system (herein refers to as an entrepreneurial social actor) includes the interaction between the universities and other organisations they are working with. Consequently, the term 'Entrepreneurial University' is used to address how institutions are contributing towards their national socioeconomic advancement (Guerrero et al., 2014; Hofer & Dimitrov, 2014). Therefore, understanding how the words contextualisation and social systems are used in this study is of significance because they permeate into the entrepreneurial university definition (see p.21, Introductory Section) devised for this thesis in terms of 'an entity with diverse expertise of multiple stakeholders'.

To simplify and aid the understanding of how the entrepreneurial university research takes an interesting avenue in other outlets, the sets of literature utilised in this thesis were diagrammatically presented in Figure 5 below.

72
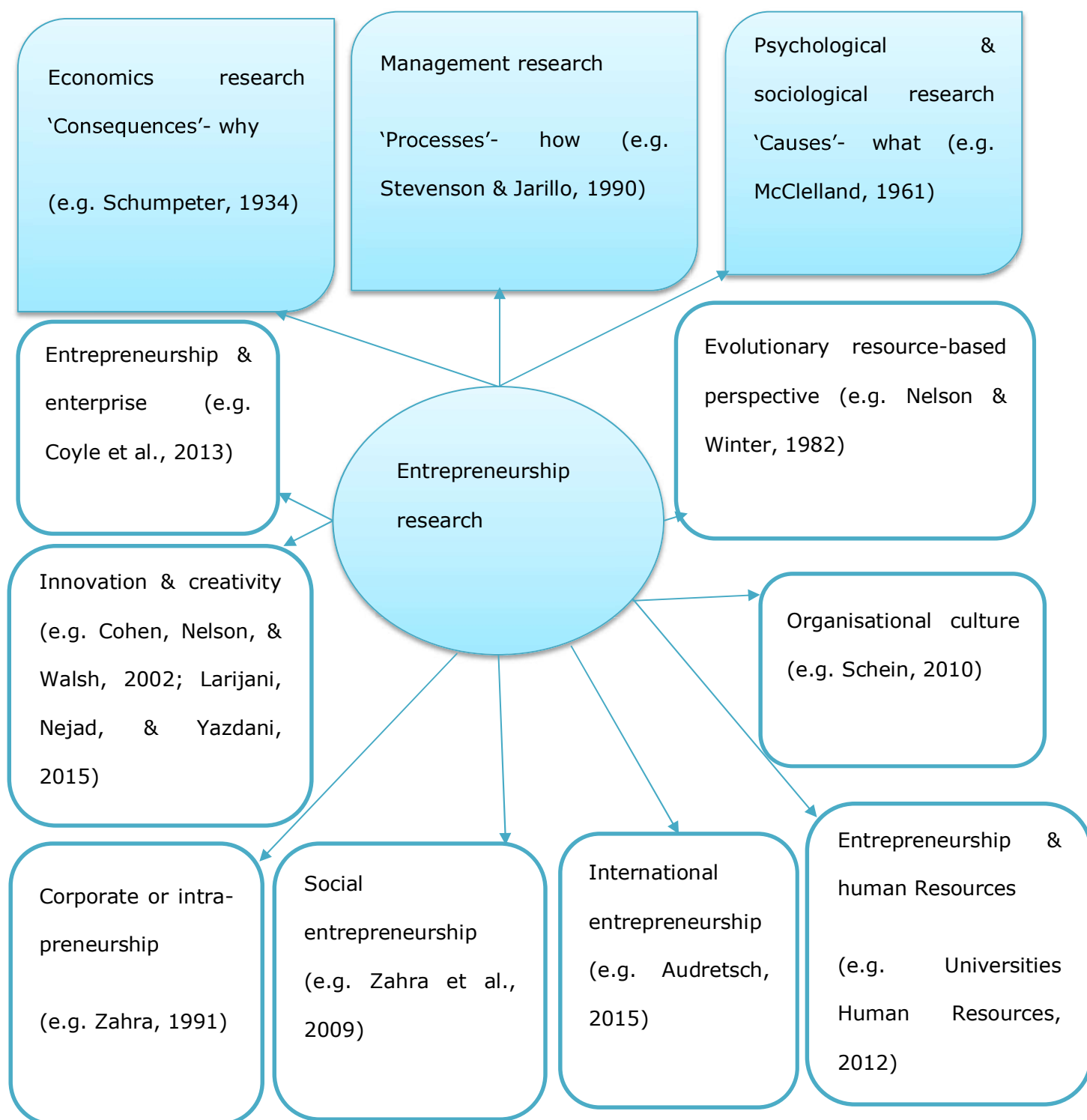
Figure 5: Three overlapping interests of the entrepreneurial university research

Source: Author's own

From the above diagram, it can be deduced that entrepreneurship research takes an overlapping interest in management, economics, and sociological or psychological studies.

73

The economics research is about macro-level analysis; that is, its core focus is primarily on 'why' value creation influences the societal level and it is embodied in the outcome or consequential effect. The management research is about micro-level analysis; that is, it primarily focuses on 'how' business organisations are performing, and it is embodied in the process. The psychological or sociological research is also about micro-level but fundamentally at factor level which is embodied in the cause; that is, its core concern is primarily on 'what' can be done by management to shape performance. As such, entrepreneurship research is interested in the "characteristics and behaviour of people" who undertake initiatives which are vital to the economy (Davidsson et al., 2006, p. 50). In a similar way, since universities are corporate entrepreneurs, I posit that the entrepreneurial university inquiry provides an interesting assumption that organisational initiative as a crucial force in the economy takes an interest in the factors and characteristics of the organisation. This implies that the understanding of the entrepreneurial university in this thesis favours the activities and factors as the units of analysis. Therefore, RBV theory (factors) and CE concept (characteristics) are the appropriate analytical lens.

3.2 The entrepreneurial university: A historical analysis

The transition from teaching and research to becoming entrepreneurial universities has been highly emphasised and given considerable attention (Etzkowitz, 2003). The transformation towards becoming more entrepreneurial evolved from the ivory tower- a situation when the academia is to bridge the gap between science and technology in more innovative ways through the commercialisation of technologies that are generated from research (Etzkowitz, 2014; Guenther & Wagner, 2008). Accordingly, the increased engagement in knowledge exchange activities, globalisation and structural adjustments (economic rationalism and managerialism) triggered a new interpretation of the meaning and purpose of universities in different countries across the globe (Mok & Welch, 2003).

However, the interpretation given to the entrepreneurial university notion varies in context and concept. That is, there is variation in terms of what entrepreneurial university

means for different countries and how it is used to describe different sets of activities. Therefore, the next subsection discusses the origin and presents a scrutiny of the contextualisation of the entrepreneurial university from different countries.

3.2.1 Contextualising the entrepreneurial university

Originated in the U.S, the entrepreneurial university entails transformation from research-oriented institution to the third academic revolution; that is, becoming more entrepreneurial because there is limited research funding system, which induced the academia to source for other alternatives funding sources (Etzkowitz, 2004). This led to the development of unusual structures like incubators and science parks, as well as involvement in innovative activities like academic spin-offs (Rothaermel et al., 2007). Consequently, the introduction of the Bayh-Dole Act 1980 as the U.S intellectual property protection legislation provides mechanisms for institutions to transfer and commercialise scientific research (Grimaldi et al., 2011; Henderson & Smith, 2002; Shane, 2004). This further pushed American universities towards entrepreneurial activities, particularly patenting (Guenther & Wagner, 2008). As such, some American scholars, for example, Audretsch (2014) consider entrepreneurial university as the focus of universities in developing new enterprises, promoting the entrepreneurial environment and commercialising knowledge transfer.

Unlike the U.S where many universities are private, UK universities are public (either teaching or research); that is, they are publicly funded. Therefore, the need for the universities to strengthen and develop partnerships with enterprise support providers to attract new sources of financing transcends universities' role beyond teaching and research only but toward entrepreneurialism.

In Europe, the Bologna Declaration 1999 flourished academic conditions to encourage innovation, entrepreneurship, enterprise, and creativity (IEEC) and universities' ability to think out of the box to solve problems (EHEA, 1999). As such, this policy triggered most European universities to strongly increase their entrepreneurial activities, especially the creation of spin-offs (Mustar, et al., 2006). In the search for answers to address the proposed question: *what does the entrepreneurial university mean*? Through a German

75

university, Marburg University Röpke asserts three components: (i) the organisational design of the university is itself entrepreneurial, (ii) entrepreneurial members (staff, students, and faculty) and (iii) entrepreneurial relationship with the university environment (Röpke, 2000). In the analysis of the case of the Politechnica University of Bucharest in Romania, Militaru (2014) expresses that organisational innovation, pro-activity and risk-taking are conditional factors of the entrepreneurial university. Indeed, a University that is entrepreneurial has willingly pursued opportunities that have the potential likelihood to result in a loss.

In the UK context, Gibb & Hannon (2006) offer a guideline for entrepreneurial organisations by recommending a range of components including ownership, autonomy, management, networks, and commitments amongst others. Some British scholars including Coyle et al. (2013) in the development of the Entrepreneurial University Leadership Programme (EULP) review and distinguish between the three key themes associated with the entrepreneurial university. These scholars consider *enterprise* as an emphasis on the development of (i) an enterprising individual (skill, attributes, behavioural and motivational capacities require for work, leisure and social context) such as capacity to make things happen independently, networking, self-efficacy, taking initiatives, identifying opportunities, strategic thinking and creative problem solving; and (ii) an entrepreneurial mindset with focus on the ability of an individual to adapt to uncertainties such as thinking, communicating, feeling, learning and organising in an entrepreneurial manner. *Entrepreneurship* is the application of the enterprising characteristics to starting or growing an established venture. *Innovation* in an entrepreneurial context is associated with new organisation and leadership development initiatives amongst others. These definitions are important to understanding their application and use in the higher education sector.

It appears that while universities in developed nations are more actively inclined to the organisational elements, their developing counterparts are struggling to have a landmark record (Farsi et al., 2012; Powers & McDougall, 2005; Rothaermel et al., 2007). This could be that the developed nations have adequate capabilities to respond swiftly to

76

changes in administration, governance, culture (William et al., 2011) including mission, management, and funding than their developing counterparts.

Similar to the varied interpretations of entrepreneurship (Bronstein & Reihlen, 2014) such as corporate entrepreneurship (Audretsch, 2015; Zahra, 2015); serial entrepreneurship (Audretsch et al., 2015); collaborative entrepreneurship (Ratten, 2014); women/female entrepreneurship (Ramadani et al., 2015); social entrepreneurship (Scheuerle & Münscher, 2013) and many more, which represent a broad spectrum of activities, career paths and types of businesses that can be undertaken. These concepts show that numerous definitions and approaches exist and therefore suggest that entrepreneurship is a multifaceted phenomenon (Beugelsdijk, 2007). Similarly, the entrepreneurial university is a multifaceted phenomenon and as such, there is also diversity in the academic literature on what it constitutes (Kirby et al., 2011).

This diversity goes along in different lines; in the line of context (country) and concept (meaning). In the preceding paragraph, the interpretations of the entrepreneurial university in different contexts have been considered. Now, the concepts used in the literature to describe the entrepreneurial university term are looked at in the next subsection.

3.2.2 Conceptualising the entrepreneurial university

The entrepreneurial university is an evolving high-profile concept that is inherently complex and debatable. Furthermore, the bureaucratic nature of higher education (Williams et al., 2015) partly contributes to its complexity, which generates conflicting and contradictory views (European Commission & OECD, 2012). Besides the lack of concurrency in the definition (Bronstein & Reihlen, 2014; Kirby et al., 2011), there is also the issue of theoretical and methodological gaps (Rothaermel et al., 2007) and these will be thoroughly reviewed in Chapters Four and Five. Thus, it is not surprising as there are tensions around the concept both in theory and practice (Ranga & Etzkowitz, 2013).

In the line of concepts used in addressing the entrepreneurial university, scholars are applying different terms to express their ideas. For example Davies (1987) 'Adaptive', Slaughter & Leslie (1997) 'Academic Capitalism' and 'Market Universities', Clark (1998) 'Self-reliant University', Clark (2001), Duderstadt (2000) and Marginson (1999) 'Enterprising and University Transformation', Marginson & Considine (2000) 'Enterprise University, Röpke (2000) 'Entrepreneur Organisation', Sporn (2001) 'Adaptive Universities' as a construct of new universities, Shattock (2003) 'Innovative and Responsive', Williams (2003) 'Enterprising University', Clark (2004) 'Adaptive and Proactive universities', Shattock (2005) Entrepreneurialism and Third Mission', Shattock (2009) 'Entrepreneurial Universities', Wissema (2009) 'Third-generation Universities', and named to Mitra (2012) is the concept of 'Growing Firms'.

While some authors (E.g. Mowery & Shane, 2002; Powers & McDougall, 2005; Rothaermel et al., 2007; Wood, 2011) adopted the 'Academic Entrepreneurship' or 'University Entrepreneurship' term as an expansion of technology transfer activities to inform practice, others (Lakitan, 2013; Meyer, 2015; Phillip & Der Foo, 2004; Shane, 2003; Venkataraman, 2004; Walker, 2012) associate the term with 'Technological Entrepreneurship' or 'Technopreneurship' as the commercialisation of innovations (science and technology) for commercial purposes. In his usual way, Etzkowitz uses 'Entrepreneurial University' and 'University (Academic) Entrepreneurship'(Etzkowitz, 2013a, 2013b) as the shift from second (research) to third academic (entrepreneurial) revolution.

In the study of five European institutions, Clark (1998) introduces a guiding framework entitled 'Pathways of Transformation' organised around five key components. Clark's approach has been adopted in some entrepreneurial studies (Gjerding, 2005; Langridge, 2006) as a template for explaining the entrepreneurialism phenomenon and widely acknowledged as a critical avenue in the entrepreneurial field. However, there are some shortcomings including inconsistency in terminologies as well as a lack of clarity in terms of characteristics and determinants. These drawbacks are highlighted underneath.

Clark (1998) delineates enterprising universities as those that actively seek to transit from "traditional closed system of standardisation to distinct organisational identities by

78

taking chances in the market and risk being different" (p. xiv). While this is an interesting comment because it emphasises universities' openness to innovation, Clark's analyses draw on different terminologies including 'enterprising', 'entrepreneurial', 'proactive', and 'self-reliant' universities, By enterprising, Clark refers to the active involvement of university in innovative and entrepreneurial activities; entrepreneurial as an innovative approach adopted by the institutions taking proactive caution in taking a risk and self-reliant as being independent. This leads to a profusion of terms.

Further to this, Clark consistently endowed his five pathways (steering core, developmental periphery, funding base, academic heartland, and entrepreneurial culture) as organisational characteristics (Clark, 1998, 2001, 2004). Whereas, factors and characteristics are two different terms but have been presented in the pathways as one element. Such pitfalls were observed in other literature including the European framework (EC & OECD, 2012) which is outlined in Section 3.3 herein. Therefore, Clark has not actually given a definition to the entrepreneurial university concept in his initial framework but rather provides extensive criteria of what he claimed as characteristics. However, in his later published work in 2001, Clark tries to elaborate on the meaning of this subject matter emphasising a more fine-grained perspective and consider entrepreneurial university as new and emerging organisational forms capable of reconstructing and re-arranging the academic and administrative activities (Clark, 2001).

From the stance of 'innovative universities', van Vught (1999) conceptualises entrepreneurial university as the inclination of institutions to adjust to the dynamism in the environment and pursue this through teaching, research, knowledge transfer activities amongst others. The idea of innovation represents the university's openness to new practices and readiness to make the necessary adjustment. This could include the application of new resources, technology, skills, management practices and new knowledge creation (Zhon, 2007) and new entrepreneurship courses (Kirby et al., 2011).

Applying the same 'innovative entrepreneurship university' concept, Diaconu & DUŢU (2015) claimed that innovative entrepreneurship in universities is a critical aspect of change management and that its successful implementation is determined by the improvement in

79

organisational procedural systems. The authors proceed to identify the components of entrepreneurial culture as entrepreneurs, entrepreneurship, innovation, competition, entrepreneurial ecosystem, and entrepreneurial attitude.

Drawing on a cross-national empirical study of six universities; 3 American, 1 Switzerland, 1 Italian and 1 Austrian, Sporn points out seven series of elements (see Appendix 15) that may influence entrepreneurial activity. Sporn defines the entrepreneurial university as adaptive institutions consisting of academic divisions with revised and differentiated roles and responsibilities. Despite that Sporn studied four different countries, it did not slice these influencers into core categories that could be developed into the taxonomy of factors to enhance the understanding of the entrepreneurial university phenomenon.

These concepts are interchangeably used in place of the entrepreneurial university term on the basis of the kind of activity certain universities engage with (Jacob et al., 2003). On the notion that entrepreneurial university is relatively an evolving and complex phenomenon (Lakitan, 2013), possibly analysts in the field may ascribe various terms as qualifiers to present their ideas. Though as different concepts are applied, they all show the importance of entrepreneurial university and the different understanding presented in different countries. Yet, they all head towards explaining the same entrepreneurial university term.

However, since this research encompasses the extension of the European framework, therefore, it is appropriate to use the parental term- entrepreneurial university itself as the overarching concept. Hence, 'Entrepreneurial University' is the broader term in which academic, innovative, adaptive, technology and technopreneurship are rooted in implementing any entrepreneurial activity and how entrepreneurial institutions have sustained the environmental changes. Therefore, in this thesis, the entrepreneurial university construct is considered.

Some leading writers (e.g. Gibb et al., 2009) delineate the entrepreneurial university concept from the Schumpeterian view. The understanding of the entrepreneurial university concept from this perspective is based on the assumption that entrepreneurial concept is

80

wholly concerned with creating and handling of "ground-breaking factors of production" and how things are getting done (Gibb et al. 2009, p. 5). As such, entrepreneurial activity extends beyond the explanation of meso, micro, and macro level factors. Entrepreneurial activity is an important source of innovation in a dynamic task environment with intense changes. On this ground, the present researcher subscribes to the Schumpeterian view and draws on the definition of the entrepreneurial university from this stance as will be outlined in subsection 3.2.3

The next subsection draws a connection between the contextualisation and conceptualisation of the entrepreneurial university.

3.2.3 Link between entrepreneurial university context and concept

An important observation is that the term 'Third Mission' becomes widely adopted as a broad term expressing the knowledge and technology transfer activities in U.S universities (Hackett & Dilts, 2004; Henderson & Smith, 2002), it applies to social and economic engagement in UK universities (Nelles & Vorley, 2010) and has been used by the UK government since 1998. Concisely, it is the evolving social and economic role of universities.

Another observation is that some British scholars (Mitra & Edmondson, 2015; Williams, 2003; Woollard et al., 2007) are applying the term enterprise or enterprising university more frequently than scholars conducting research in other contexts. Possibly, this could be because it is what some UK universities used in their corporate or strategic plan (e.g. Coventry, 2010; Queens University Belfast, 2011; Hertfordshire, 2015) and it is what some policy planners (Davies, 2002; Price & Rae, 2012; Witty, 2013) adopted in their agenda to addressing the competitiveness goal of the country. This term manifests itself in the application as has adopted by some lead enterprise educators. For example, in the expression of the great achievement winning the NCEE 2015 Award, Director of Enterprise Learning Leeds, Professor Nigel Lockett, expressed that "this award is the ultimate accolade

81

for any **enterprising university** and the culmination of years of hard work across the whole university" (University Website, 2015).

The above range of conceptualisations shows the diversity and the extent to which the entrepreneurial university phenomenon is being addressed globally. The contextual diversity is an indication that an entrepreneurial university is a "multidimensional concept" (Audretsch, 2003, p. 2) and a multilevel relationship. The forms of entrepreneurial activities within certain universities in their unique context may be considered as the base for the definitional issues. Given this popularity and diversity, there is inconsistency and confusion in the array of terminology on the entrepreneurial university as well as its key associated themes including innovation, enterprise, entrepreneurship, and creativity.

Various literature (e.g. Audretsch, 2003; Bygrave & Minniti, 2000; Coyle et al., 2013; Etzkowitz, 2004, 2013; Etzkowitz & Viale, 2010; Ferreira et al., 2006; Gibb et al., 2009; Lazányi, 2014; Mitra, 2012; Oncu, 2010; Ranga & Etzkowitz, 2013) have widely cited the Schumpeterian economic development definition developed by Joseph Schumpeter (1934:92) "breaking up old and creating *new* tradition".

Accordingly, *creative reconstruction* occurs "through a continuous *series* of organisational *innovation* that infuses society with *new* activities to replace those lost through creative destruction". Schumpeter went further highlighting that entrepreneurial function needs "not to be embodied in a physical person and in particular in a single physical person" (Schumpeter, 1949, p. 255). In addition, the entrepreneurial university cannot be used to address a single activity; that is, it defines many forms of entrepreneurial activities within HEIs. It is within these contexts that the present researcher adds to and reconstructs the meaning of the entrepreneurial university by being mindful of the key concepts (italicised) in the above definitions of Joseph Schumpeter.

Now that we understand what the entrepreneurial university is in the general sense, this thesis will be underpinned by two definitions that I develop purposely for this research based on the variations in UK universities. Therefore, the two entrepreneurial university **definitions I developed and adopted for this thesis are**:

82

It is a collective, accessible and open innovation entity that accommodates diverse expertise and series of knowledge to enhance teaching, research and entrepreneurial activities to create public values (economic, political, academic and sociocultural impacts).

It is a flexible, self-reliant and innovative institution that continuously incorporates new approaches and distinct strategies through its internal-external environment to keep up with students' demand and societal expectations to generate entrepreneurial outcomes.

Though two different definitions, in common, they are composed to emphasise the notion of the entrepreneurial university as multilevel interactions. Nevertheless, on the basis that the Schumpeter's work predominantly influences today's analysis of innovation and entrepreneurship as well as entrepreneurialism in HEIs, clearly developing the definitions of the entrepreneurial university from this domain is profoundly acceptable. However, it is important to devise two definitions in this thesis because of the differentiated characteristics of the UK universities in relation to old and new universities as well as their teaching and research orientations.

This thesis adopts the term 'entrepreneurialism' to explain the transformational 'process' (how resources are generated) through which the universities become more involved in entrepreneurial activities and the 'practice' (what activities are in place) undertaken to respond to hyper-competition. However, the term 'entrepreneurial activities' in this study are multilevel practices (individual, organisational, industry, government and societal) undertaken by the universities to respond to both internal demands and changes in the external environment. These practices are wide-ranging and extend beyond research publication and consultancy services to include setting up business corporations and providing services that contribute to regional economy development (Yokoyama, 2006), spinning off companies, licensing out technology and commercial contracts (Wright et al., 2008; Wright et al., 2007), various innovative forms of teaching embodied in internationalisation programmes (Shattock, 2009) as well as students' business start-up activities. Despite all the variety of terms aligned with the entrepreneurial university, the four main themes are enterprise, entrepreneurship, creativity, and innovation.

The next section elaborates on the grounds for modifying the EU framework.

83

3.3 Overview, critiques, and strengths of the European framework

The entrepreneurial university is a universal phenomenon that converges and spreads across the globe and considerably welcomed into the higher education systems. In response to this call, and since the 80s, Europe major contribution is reflected through the development both in concept and practice of the entrepreneurial university. This contribution is underpinned by "innovation via teaching and learning, research, knowledge exchange, governance and external relations" (EC & OECD, 2012, p. 1). Indeed, a substantial effort by the European government was the birth of the 2012 'European Guiding Framework'.

As depicted in Figure 1 (subsection 1.2.1), the European framework identifies seven (herein labelled as Pillar One to Seven) components of the entrepreneurial university. Thus, this thesis argues that there is a lack of clarity in terms of how these pillars apply to the UK and that there are several other components unaccounted for. Apart from this, there are several conceptual and methodological challenges and limitations that can be attributed to the European framework.

First, and like other literature (e.g. Siegel et al., 2003) where 'organisational practices' and 'organisational characteristics' (Huyghe et al., 2013) were considered as 'determinants', the European framework makes the same claim. European Commission and the OECD (2012) claim to have produced seven pillars defining the characteristics of the entrepreneurial university. This suggests that these components have elements of factors. For clarification in this thesis, the first two pillars, i.e. (i) and (ii) are factors, and pillars (iii) to (vi) are characteristics. Perhaps, characteristics and factors are two big and different terms that have been brought together without any justification for it. Hence, the framework does not attempt to clarify between entrepreneurial university factors and characteristics. However, not to be a victim of the same flaw, this thesis tries as much as possible to define these terms, clarify their meanings and distinguish between them by unraveling their elements.

84

Another weak aspect of the framework is that while leadership and governance are taken as the first key pillar, it ignores their complementarities with management. Thus, this thesis argues that leadership, management, and governance play complementary roles. Besides, there is no effort to produce a typology of leadership, management and governance roles; and where possible to identify leadership styles or even suggest a viable style for leading and managing in a multifaceted, highly turbulence and dynamic business environment like universities, as a call for by Lamidi & Williams (2014).

Nevertheless, the framework is a great tool that provides a broad orienting topic for universities to explore by self-assessing their entrepreneurial journeys identifying their strengths, weaknesses, and way forward. However, it is a framework developed by the European government from 137 European universities for European universities. As such, it is an EU-level framework and the methodological challenge is that it is not a country-specific tool. Besides, it is not a specific university model because each country and university are being affected by a given set of conditions in different ways. Therefore, it neglects the historical context, political, social and economic structures which can show the empirical interpretations of specific conditions that link to the seven pillars of individual institutions. Though the member states are tied together as Europe the argument is that geographically, every country and university in it is unique.

"…Legal framework, government, and management explicitly have a significant influence on the nature and categories of entrepreneurial activities HEIs are able to undertake. British universities are independent property-owning institutions with their legal independence guaranteed by Royal Charter or Parliamentary Statute. The individual university has the responsibility to manage its own financial, administrative and academic affairs" (Williams & Kitaev, 2005, p. 137).

Based on geographical location, it could be deduced that different countries with the same national focus on entrepreneurial ambitions and aspirations have different ways of achieving entrepreneurial goals. For instance, while the Europeans may have similar innovation focus, the individual country will apply different mechanisms, initiatives, and approaches to reaching this objective. Similarly, universities in the same and even in

85

different countries may have responded to entrepreneurialism differently (Guerrero et al., 2014; Williams et al., 2015).

Further to this, the European Commission and the OECD noted a gap in the literature, which this study attempts to fill. They highlighted that "every effort to conceptualise entrepreneurial university reach no consensus. The framework is not attempting to develop innovative model and factors but integrates current models in the literature for application in the European Higher Education Area" (p.1-2). This suggests there is a need to do more with the EU framework. The authors also advocate for further elaboration on the framework as they acknowledged "it is not yet a comprehensive model" (p.3).

The limitations of the European framework are the basis to explore how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'. Following the introduction of the framework in 2012, EC & OECD have called for more work to be done on it.

3.4 Summary

Over the last few decades, the entrepreneurial university concept has evolved, and its definitions have considerably varied. Scholars in the U.S. have applied the term third mission university to focus on knowledge and technology transfer activities and scholars in the UK have considered the enterprise/enterprising (business) university to focus on social and economic innovative actions. That is, different terms have been utilised to express a kind of activities. However, prior studies have called for clarifications about how universities can foster innovation (e.g. OECD, 2008) and what the entrepreneurial university constitutes (EC & OECD, 2012). Having looked at the concept in terms of where and how the entrepreneurial university originated, the next chapter focuses on the theoretical and conceptual framing of the factors and characteristics aspects of the entrepreneurial university.

Chapter 4 Theory and concept for analysing

Increasingly, there has been attention to the notion of the entrepreneurial university including the EC and OECD's (2012) invitation for a distinct model and consistency in the meaning of entrepreneurial university. Therefore, this chapter reviews the entrepreneurial university from an integrated perspective combining the resource-based view (RBV) with corporate entrepreneurship (CE). The chapter scrutinises the frameworks and models that have attempted the understanding of the entrepreneurial university. It also discusses the key constructs of RBV and CE perspectives adopted in the study respectively. Then, it integrates the components of both theory and concept followed by a summary of the discussion.

4.1 The contemporary entrepreneurial university frameworks and models

As outlined in subsection 1.2.1, the primary units of analysis are factors and characteristics. Thus, naturally from these units of analysis, different perspectives (herein RBV and CE) must be combined. This is essential because I critique the EU framework for a lack of clarity and thorough clarification implies a focus on meaning. Therefore, while the RBV fits into the 'factors' (Pillars 1-2), CE is embedded into the 'characteristics' (Pillars 3-6) components of the EU framework. Perhaps, some scholars (Davidsson et al., 2006) have suggested that different lens needs to be used to address different units of analysis. This integrative combination of the analytical lens is conducive to this study because I adopt a constructivist and interpretive paradigm (see Chapter 5.2.2) and an axiological perspective (see Chapter 5.2.3) which are embodied in the creation of knowledge from multiple realities.

As summarised in Appendix 15 (Table 28: scholars who have extended RBV), the majority (e.g. Zaheer & Bell, 2005; Wong, 2011) have extended it within private firms, some (e.g. Arya & Lin, 2007) within public firms, and others (e.g. Clarke & MacDonald, 2016) within both private and public companies with external resources or networked

environments or strategic actions. But a few have considered extending it within university establishments and even looking at it both internally and externally. Therefore, this suggests that more needs to be done with RBV in the higher education sectors.

Similarly, as summarised in Appendix 15 (Table 29: scholars who have classified or expanded CE), the majority (e.g. Zahra, 1999; Romero-Martinez et al., 2010; Burgers & Covin, 2014; Behres & Patzelt, 2015) have expanded CE with innovation, renewal, and ventures. Some scholars (e.g. Wang et al, 2015; Naldi et al., 2015) have extend CE with international venturing, others (e.g. Ireland et al., 2009; Lerchenmueller, 2015) with the strategy and a few (e.g. Kuratko & Morris, 2018) with internal and external venturing. Yet, scholars (e.g. Corbett et al., 2013) have highlighted the need for practical exploratory studies about the relationship between the CE domains. Further justifications for the RBV and CE choices are discussed in the rest of this chapter.

The emergence of the entrepreneurial university concept from the broad nature of the Schumpeterian stance has allowed the entrepreneurship literature to span various issues that can be addressed from many fields (Sanders, 2007). As indicated earlier, in the entrepreneurial university research outlet, there is a series of framework trying to define the concept such as the triple helix thesis describing it as 'innovation in innovation' (Etzkowitz, 2003). Some examples of existing entrepreneurial university frameworks and models are amassed and provided in Appendix 15 (Table 27).

As illustrated in Appendix 15, while some scholars have used a theoretical lens to develop their models, others were underpinned by entrepreneurship concepts only. Yet, there is a call for an innovative and comprehensive model (EC & OECD, 2012). Given these theoretical and conceptual gaps, I complemented RBV theory with the CE concept to develop a 3x3 practical model to advance entrepreneurship in universities. Also, as the factors and characteristics elements were not clearly distinguished in the existing models/frameworks, the RBV theory was fitted into the factors and CE concept was fitted into the characteristics components. Establishing clarity between these two terms is essential because this thesis is an amendment to the EU framework.

Slaughter & Leslie (1997) explain academic capitalism of universities from the economic perspectives, drawing on the resource dependency theory. Some authors (e.g. O'Shea et al., 2007; Rothaermel et al., 2007) give interpretation to determinants of spin-offs from the RBV perspective, or offer explanation to the factors contributing to the transition toward entrepreneurship from the institutional economics view (e.g. Thornton et al., 2011) while others (e.g. Guerrero et al., 2014; Guerrero, & Urbano, 2012) combine RBV with institutional economics as a complementary theory to examine the conditioning factors that determine entrepreneurial university.

Sporn (2001) acknowledges that the institutional context of HE has been examined from diverse perspectives, national dynamics that help in identifying the key factors in the period of change. Similarly, in the entrepreneurial university literature, analysts have explained the phenomenon using a wide variety of theories drawing from many disciplines ranging from economics, cognitive psychology, organisational behaviour and innovation management to strategic management (see also Rothaermel et al., 2007; Morris, 2014).

Following the pioneering work of Clark in 1998, the entrepreneurial university has significantly evolved. Globally, HEIs are key actors contributing a paramount aspect to the economic development especially the entrepreneurial ones (Farsi et al., 2012). Undoubtedly, there are varieties of entrepreneurial university models in the literature but remains fragmented (Rothaermel et al., 2007), lack comprehensiveness and systematic propositions (Salamzadeh et al., 2011).

In a comparative analysis between Italy, Germany, Latin American, and Japan, Etzkowitz and others employed the Triple Helix perspective to conceptualise the emergence of entrepreneurial campus (Etzkowitz et al., 2000). They consider entrepreneurial university as the reconfiguration and reorganisation of existing institutions to match with the Massachusetts Institute of Technology prototype (see further explanation in subsection 4.2.2). This suggests a transition in the university sector to becoming more entrepreneurial. In this sense, the authors considered entrepreneurial university as the latecomer strategy. On the notion of latecomer strategy, since the modern or post-1992 universities are in a less favorable position to attract extensive research funding (Clarke, 2015; Goddard &

89

Vallance, 2013; Stevenson & Mercer, 2013), they have the opportunities to attract income from other unique sources including internationalisation.

In the surveying of four special issues, Thornton et al. (2011) drew on the institutional economic theory to identify three elements of network relations in entrepreneurial organisations as: (i) the nature of the content exchanged in the relationship between the actors including social capital and imperceptible resources such as emotive support, (ii) the governance mechanisms in network interactions such as trust between entrepreneurs and venturing partners, and (iii) network structure developed by the coupling interactions between the actors such as ability to adapt cohesion and structure to seek and generate entrepreneurial returns. The implication is that these patterns of components shape entrepreneurial activity.

Hence, both internal and environmental factors may affect entrepreneurialism and only those universities with the ability to adapt their assets to the evolving contexts will survive (Williams & Kitaev, 2005). While some universities are proactive in exploiting opportunities (Coyle et al., 2013) for new ventures, for example, taking more active steps to start new businesses (Yasin & Osman, 2015) others are taking different initiatives.

As initially reinforced, there are other theories that are used to explaining the entrepreneurial concept including the Kuhnian economic growth theory (e.g. Sanders, 2007), Innovation systems theory (e.g. Van Vught, 2009) and academic capitalism theory (e.g. Gonzales et al., 2013). Though the authors use these theories to explain the factors contributing to the development of the entrepreneurial concept, they specifically focus on a certain aspect. For example, from an economic position, Sanders uses the theory of economic growth to explain the endogenous factors that connect scientific knowledge creation with entrepreneurial opportunity recognition and innovation emphasising on externalities factors at the institutional level, thereby perceives entrepreneurial function as coinciding with knowledge creation for an economic purpose. From a political stance, van Vught employs the innovative approach to explaining the collaborative characteristics of generating of ideas, scientific researching and introducing new products and processes focusing on national factors at the macro level, thereby considers entrepreneurial action as

90

means to international competitiveness for political reason. While from an academic point of view, Gonzales and colleagues adopt the academic capitalism perspective to explore the work lives and experiences of faculty in striving institutions focusing on organisational characteristics at the academic level, thereby see the entrepreneurial activity as the changing conditions of the academic profession for academic aim.

Following the Triple Helix model proposition by Etzkowitz (1993) and Etzkowitz & Leydesdorff (1995) as a transition from a dominant two-way relation to an increasing three-way university-business-government interactions, universities particularly entrepreneurial ones are playing fundamental roles in the innovative spheres of the model. The triple helix concept accounts for the indispensable structure needed for a successful regional development in commercialising knowledge.

Although the triple helix genesis offers a pioneering analytical model upon which many of the entrepreneurial university published works are written on in the understanding of the underlying complexities of the phenomenon, it conspicuously ignores the individual and other meso factors influencing the institutional spheres. This weakness portrayed the model as having no relationships or interactions with the inner circuit of the university.

Unfortunately, like many other organisations, entrepreneurial universities are open systems and social entities that constitute a series of components, relationships, and functions determining their development and survival. Furthermore, the model overlooks the interactive nature of the players congregating for knowledge commercialisation within a university set-up (Walker, 2012). Based on this limitation, it is more suitable to augment the model with other relevant theories to provide a detailed analysis of the phenomenon. However, this drawback was later addressed by Ranga & Etzkowitz (2013, p. 238) who proposed the Triple Helix Innovation System (THIS), as a framework to analyse and scrutinise main elements of the triple helices interaction into an "innovation system".

The upgraded THIS proposes five key types of relationships: (i) technology transfer; (ii) collaboration and conflict moderation; (iii) collaborative leadership; (iv) substitution; and (v) networking. By drawing on the distinction between the key components including single and multiple innovators, it overtly shows the systemic interconnections between the Triple

91

Helix actors thereby conquering some of the drawbacks of the triple helix thesis. This is a welcomed idea for entrepreneurial scholars especially when the initial model tends to focus predominantly on the prominent role of the university in innovation.

Extant literature on the triple helix model was analytically examined and synthesised by Ranga & Etzkowitz (2013) to reconcile its definitional gap and suggest prospects. The significance of Ranga & Etzkowitz's (2013) model is that of soliciting for the universal acceptance of the Triple Helix Systems framework in advancing innovation theory and practice. Doing this invariably humbles the innovators, originators, and creators of new knowledge and continuously reminds them that the entrepreneurial university development is a collaborative effort. Indeed, this entrepreneurial attitude reflects the prime tenets of the entrepreneurial university. Undoubtedly, the triple helix models offer a well-grounded analytical base for explaining the phenomenon of the entrepreneurial university as they explicitly show that the creation and application of knowledge need to be interactive with the wider society.

Similarly, utilising the Triple Helix model, Etzkowitz (2013) in his analysis of the evolution of the entrepreneurial university asserts that the academic involvement in commercial activity (technology transfer), business formation (start-up and spin-off) and regional development are characteristics of an entrepreneurial university. Similarly, in his early publication, Etzkowitz (2003) claimed that entrepreneurial university is embedded in the relationship between university, business, and government, highlighting that their interaction is a major requirement for innovation in today's knowledge-based economy. Etzkowitz acknowledges that entrepreneurial university is a transition from the first academic revolution (teaching and research) to the second mutiny in the entrepreneurial mission (Etzkowitz, 2013). As such, the entrepreneurial university is considered as an ideal academic place to fulfill the new role of higher institutions. Etzkowitz went further to epitomise entrepreneurial university in four aspects: (i) academic independence (ii) university-business interaction (iii) entrepreneurship education, and (iv) an entrepreneurial philosophy (attitude and behaviour). The triple helix relations suggest the importance of academic in the capitalisation of knowledge, especially in terms of their engagement in the

commercialisation of research activity to spin-out innovative companies (Etzkowitz, 2003). Given that triple helix focuses on three levels of relationships that exist between industry, university and government only, it would be great to see an extension of it that reflects multiple relationships thereby considered as multi-helix relations. This is important because in this thesis entrepreneurial university is conceded beyond three levels to encompass multiple stakeholders other than business organisations, government, and the university.

Adjacent to the triple helix is the entrepreneurial university framework proposed by a prominent writer in the field, Burton Clark (1998). Clark analysed the organisational and cultural transformations inside the universities. As earlier mentioned, he identified five organisational characteristics of an entrepreneurial institution: an expanded financial base, an enthused academic hub, a supported managerial backup, an entrepreneurial culture and an enhanced developmental peripheral. However, while the framework involves an examination of changes at the university level, it chiefly focuses on universities' roles thereby underrating the function of key actors within the university (Fogelberg & Lundqvist, 2013).

In contrast, Etzkowitz (2003b) examined the research group in his analysis of the shift from Research to Entrepreneurial of Stanford University in the U.S characterising it as 'quasi-firms'. The model is based on the notion that "research groups act like business organizations, but without motivation for profitability to make them business entities" (Etzkowitz, 2003b, p. 111). While the entrepreneurial academic model considers the actors (entrepreneurial scientists) in an entrepreneurial university, it emphasises primarily only one activity of an entrepreneurial organisation- research.

Though these theories are relevant to the purpose of the studies they are meant to analyse, the implicit rationale is that the present research ensues from the findings of the 'HEInnovate Tool' or European framework and as such it is considered as a starting point for this study.

Furthermore, previous studies (e.g. Riviezzo & Napolitano, 2010) have indicated that despite varied entrepreneurial university models, there are scanty studies to confirm the actual application of these models as explained in the literature. Consistently, since the

93

inception of the HEInnovate tool, there are hardly any empirical studies that have validated the use of the framework within the UK self-defined entrepreneurial universities. This, therefore, suggests that there is the need for more research showing how the tool informs the British self-defined entrepreneurial universities. Besides, Guerrero et al. (2014) concluded that future research is required for the refinement of the entrepreneurial university models.

While there are different theories such as the institutional economics that has helped us to understand the concept, I have selected the evolutionary RBV and strategic CE because of their relevance in terms of their competitiveness and heterogeneous components which align well with the notion of the entrepreneurial university. Thus, evolutionary RBV and strategic CE help us to understand how companies compete based on their strengths (resources and capabilities). Consequently, it is important to understand what this theory and concept entail.

Having reviewed existing models and frameworks for the entrepreneurial university, this thesis will focus on evolutionary RBV and strategic CE as the theory and concept essential to constructing a theoretically grounded understanding of the entrepreneurial university. As such, the next section first details the origin and meaning of the RBV theory.

4.2 Resource-based view

RBV as a theoretical framework focuses on the organisation as a bundle of resources to undertake specific or sets of business activities (Davidsson & Wiklund, 2006). While there is a limitation that scholars utilise RBV to analyse the 'resource' factors only (Davidsson & Wiklund, 2006), I found justification for utilising the theory within university settings because some scholars (e.g. Chumas, 2014) considered 'entrepreneurial' as a business. Thus, the engagement of universities in business practices makes RBV a conducive and suitable theoretical framing for the research. Therefore, the resources and capabilities components of RBV helped in addressing research objective 1- to explore the key factors.

By reviewing the theoretical firms, Davidsson et al. (2006) identified four firm views: RBV, motivation, strategic adaptation, and configuration perspectives based on their underlying assumptions, concepts, and the relationship among concepts. The first three views are associated with "factor theories" and the last was considered as a "process" theory (p. 46). This suggests that different units of analysis require different views appropriately designed to address them. Thus, considering the primary units of analysis (determinants and characteristics) in this thesis as outlined in the research objectives (Chapter 1.3), RBV is appropriate to address the first objective. Therefore, if RBV can only be applied to examine the factor side (research objective one) of the EU framework what lens can underpin the characteristics side (research objective two)? As such, I consider the strategic view of corporate entrepreneurship concept as my second perspective to address other objectives.

Prahalad & Hamel (1990) adopt the term core competence to explain a resource-based perspective as an inside-out approach of a firm to utilise a bundle of valuable physical and non-physical assets. On the notion of the inside-out, the Prahalad and Hamel argued against the position-based approach claiming that a firm responds to the dynamism in the external environments from its internal impetuses such as strategic capability, core competencies and unique resources (ACCA, 2010). This suggests that an organisation's resources and capabilities could identify and explain the persistent performance differences and competitive behaviour among entrepreneurial universities. Therefore, it is important to understand the narratives behind the bundle of capabilities that make a university to become more entrepreneurial.

Although RBV is a theory for corporate organisations but given that the existence of universities are no longer for social values only but to also have economic impact through the creation of spin-offs from science and technology for commercial uses by business organisations (Lakitan, 2013), make RBV a relevant and an appropriate theoretical basis for this research. Its application within the university settings provides insights into entrepreneurial university as an organisational phenomenon where different entrepreneurial

(business practices) activities occur. Besides, the higher education sector of today operates in a dynamic business environment.

Similar to for-profit firms, the higher education environment has increasingly become competitive and market-like; that is, in the presence of more institutions they compete for financial capital (limited fund), human resources (top quality students and star faculty) and be known for excellence (Powers & McDougall, 2005).

From the resource perspective, Powers & McDougall (2005) believed that academic and/or university entrepreneurship is aligned with the expertise element (knowledge and talent) for the development of technologies such as spin-off or firm formation while others considered using technopreneurship and/or technological entrepreneurship as representation of the technology element such as patenting/licensing of intellectual property, technology transfer and many more academic scientific productivity in the resource domain of the theory (Lakitan, 2013).

In an investigation of the University of Tehran, Farsi et al. (2012) applied RBV to comprehend the internal analysis of entrepreneurialism and discovered that mission, resources, capabilities and impeding factors are the four key dimensions in conceptualising the entrepreneurial university. Hence, it was identified that the resource elements of HEIs may include technology, creative art, expertise, ideas, concept, and others (Lakitan, 2013). That is, taking a resource-based stance emphasises a focus more on the internal aspects of entrepreneurialism.

4.2.1 Components of the resource-based view

In his novel article, Barney (1991) claimed that 'resources and capabilities' of a firm may be heterogeneous but may not be perfectly distributed across the organisation. This shows the extent to which these idiosyncratic strategic resources may be long lasting to generate superior performance and sustainable competitive advantage for the firms. These assumptions suggest that irreplaceable resources provide an organisation the capability to pursue different opportunities that could generate unique strategic choices for the

96

organisation (Rindova & Fombrun, 1999), particularly encouraging the development of the competitive entrepreneurial strategy. That is, a university that is entrepreneurial capitalises on its heterogeneous resources which give it the capability to implement special strategic choices in responding to the challenges in the environment.

His assumptions positioned the theory in relation to earlier views on resource-based (Barney et al., 2001), including Ricardo's neoclassical microeconomics (Ricardo, 1817), Michael Porter's sustained competitive advantage based theories (Porter, 1980), and Nelson & Winter's evolutionary economics (Nelson & Winter, 1982).

Given that there are three versions of RBV (Barney, 2001), first, the competitive advantage based that focuses on the positioning of a firm in the market with attention to prospects and pressures in the organisation's competitive environment. Second, the neoclassical microeconomics that emphasises the way business factors regulate the quality, quantity, and price of products and services (elastic). Finally, the evolutionary RBV that shift from positioning and strategic market factors to how organisations vary in their routines (Barney, 2001; Nelson & Winter, 1982), in what Makadok (2001) describes as capability building theories. The application and relevance of the third version is under-utilised (Aldrich, 1999; Aldrich & Reuf, 2006; Barnett & Hansen, 1996; Barnette & McKendrick, 2004; Barnett et al., 1994; Barney, 2001; Baum & McKelvey, 1999; Karim & Mitchell, 2000; Levinthal & Myatt, 1994; Nelson & Winter, 1982), particularly, in entrepreneurship research in terms of understanding how 'entrepreneurial' are some universities than others. Although all these perspectives place emphasis on the same assumptions outlined above, to take a stance, this research utilises the evolutionary RBV.

As indicated earlier, the main components of the theory constitute resources and capabilities. According to Wernerfelt (1984), in his investigation of diversified firms, a firm's resources could be its strengths or weaknesses. Thus, these resources and capabilities are a cluster of physical and non-physical assets, such as technological skills (Wernerfelt, 1984), organisational processes and routines, information and knowledge, management skills amongst others (Barney et al., 2001). Barney (1997) grouped resources into four categories namely: human, financial, physical and organisational capital. However, entrepreneurship

97

scientists focus on certain types of resources, especially social capital and entrepreneurial experiences (Michael et al., 2002) to understand differences in organisational performance in terms of the ability to recognise entrepreneurial opportunities (Brush et al., 2001). Of interest to this study are the determinants shaping entrepreneurial university development and could be any or combination of these resources rather than concentrating on specific types of resources.

According to Zahra & Nielsen (2002) in their analysis of technology commercialisation, resources are the internal and external sources of capabilities that organisations use in pursuit of a competitive advantage. From the internal sources of capabilities, the authors hold that human resources components of internal manufacturing capabilities constitute knowledge, expertise, talents, creativity, and skills. Likewise, Logie (2015) reports that the dynamic environmental contexts have pushed universities to the extent of increasingly becoming more entrepreneurial with the drive to generating funding sources and developing new markets. In this regard, understanding the main influential factors underpinning the development of entrepreneurialism in the university settings are of significance to encourage other institutions to embrace innovation, enterprise, entrepreneurship, and creativity (IEEC as explained in subsection 3.2.1).

Various entrepreneurship authors consider resources as *human capital* in terms of strong managerial core as well as managerial skills (Guerrero et al., 2014; Wright et al., 2007); some as social capital in terms of trans-disciplinary, heterogeneous structures (Guerrero et al., 2014); others as *financial capital* in terms of diversifying their funding base and autonomy of faculty and the university (Clark, 1998b); *technological capital* in terms of infrastructures as well as physical resources (Clark, 1998b; O'Shea et al., 2005); and status and prestige which is defined by social entities and historical backgrounds (Guerrero & Urbano, 2012).

Then given that the elements that epitomise resources and capabilities in business or corporate organisation settings are the same with those of the higher education institutions and that if these factors determine the innovative capabilities of businesses and universities, utilising the application of the evolutionary RBV to understand the adapting and interacting

factors of the entrepreneurial university model in higher education system need greater attention.

Empirical research has confirmed that in an effort to embrace third mission widely accepted as entrepreneurial, universities demonstrate differences in relation to their engagement in intellectual property in entrepreneurship (Annelore et al., 2015). Intellectual entrepreneurship highlights four constructs: creative ideas, open-mindedness to knowledge, ownership, and accountability, and collaborative effort (Chumas, 2014). That is, the concept connects academic disciplines and academics' strategies and ideas with private and public sectors to solve environmental issues. This suggests that universities' products (e.g. research outputs and/or intellectual properties) are some of the sources of external engagement. If these sources are used in strengthening and developing partnerships, then teaching, research, and entrepreneurial must go hand in hand.

However, despite the vast research on institutional factors of entrepreneurial university, the heterogeneity of the internal and external sources of resources and capabilities that UK self-defined entrepreneurial universities embark on in pursuit of their global competitiveness (here in entrepreneurial university) are under-researched. Therefore, grounded in the evolutionary RBV; this thesis amends the European framework by exploring how self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'.

Therefore, the next subsection discusses how the RBV components have been applied.

4.2.2 Application of resource-based view

Here, the resources and capabilities components of the RBV were incorporated into the shaping factors of the entrepreneurial university in terms of the extent to which the dominant determinants identified in this thesis (see Chapters Six and Seven) contribute to the competitiveness and heterogeneity of the self-defined entrepreneurial universities.

The potential application of the evolutionary RBV in the university context was overseen by Barney et al. (2001) in terms of technology transfer by spinning out

companies. Shane and Stuart (2002) assert that some universities are significantly more successful in creating spin-out than others based on human capital and technical assets in their possessions, with an indication to the U.S. based research university, Massachusetts Institute of Technology (MIT). Likewise, in the UK, some universities (e.g. Coventry and Huddersfield) are considered leaders in the sector in incorporating venture creation programs than others. In addition, other universities may be highly competitive by introducing new programmes into the curriculum. However, these universities are pursuing their entrepreneurial agendas by applying different methods which are influenced by various reasons. Then by researching beyond technology transfer activities, the generic question for this study- what the determinants are influencing the various entrepreneurial initiatives and practices undertaken by UK self-defined entrepreneurial universities.

More so, as becoming more entrepreneurial has helped the universities in question to be innovative; somehow it is an issue that becomes sources of competitiveness in the sector. Universities that are well-renowned for established knowledge transfer activities and/or venture creation programmes could be opportunities (role models) for others to follow. In effect, it could also be threats generating tensions within, between and outside the university in the process of trying to act entrepreneurially in the present of teaching and research mission that institutions must undertake concurrently. In this sense, RBV posits that an organisation's ability to develop an innovative and unique way of utilising resources could lead to competitive-edge (Zahra & Nielsen, 2002). Then this raises the question about on what premise are universities competitive.

Regarding the most popular examples, Stanford University and MIT become highly competitive in the U.S higher education context based on their prominent roles in supporting academic entrepreneurship since the 60s. The academic entrepreneurs include researchers, doctors, and Ph.D. students who commercialise their research results (Yasin & Osman, 2015). These are the unique human resources for these universities which now become their sources of competitiveness. To the extent that one could easily identify an academic entrepreneur with the specific University. For example, Professor James Clark

100

along with other workforce and students at Stanford University founded Silicon Graphics International (SGI) in 1980 (Finkle, 2012; SGI, 1980).

On the notion of competitive advantage, evolutionary RBV particularly emphasises the understanding of why some organisations relentlessly outperform others (Barney, 2001). In a similar context, the theory has the academic ground to understand what some universities considered entrepreneurial in their own environment and why they are becoming more entrepreneurial than others. For example, a university may seek competitive advantage through strategic partnerships and/or corporate collaborations and another one may create space for SMEs to run their businesses. Aristei et al. (2015) refer to this as inter-organisational linkages; thus collaborative, absorptive and relational abilities are organisation's capabilities towards the formation of alliances, managing networks and absorbing knowledge created by other organisations (Di Guardo & Harrigan, 2015; Morandi, 2013; Nielsen, 2015).

Both conceptual and empirical literature such as Etzkowitz, (2003c) and Guerrero et al. (2014) has revealed that universities face similar challenges despite the significant differences in their environmental context. Therefore, deriving meaning into the varying factors determining the 'routines' (herein refers to as corporate entrepreneurial activities) undertaken to respond to the dynamism in the external environment is not inappropriate.

Given that universities are challenged by complex environment and high level of uncertainty that required them to be more proactive and entrepreneurial in exploiting opportunities (Coyle et al., 2013), they steadily compete for research funding, research quality by considering the impact of their research on the wider economy via the REF, courses, teaching quality, number of students, acquisitions and collaboration with private-public and third sector organisations amongst others. In this vein, universities are competing to be the best type of schools by finding a niche such as the establishment of innovation and/or entrepreneurship centre, technology transfer office to the extent of going out of their localised comfort zones to internationalise.

According to the proponents of evolutionary RBV, (e.g. Nelson & Winter, 1982 and Barney, 2001), a routine is considered as the mechanism through which an organisation

101

carries out its business. In higher education, routines may be associated with those mechanisms for transformation such as university-business collaboration (Power & McDougall, 2005); incubators, science parks, and technology transfer offices (Etzkowitz, 1998; Kirby, 2006); entrepreneurial offerings (Audretsch & Phillips, 2007; Farsi et al., 2014); and courses and programmes (Blenker et al., 2008) amongst others that are undertaken by universities to fulfil their entrepreneurial mission.

Therefore, the primary reason for summoning the evolutionary RBV is that increasingly universities are adopting the market-oriented or business-like approach which allows them to act more entrepreneurially. This view is supported by Yasin & Osman (2015, p. 135), highlighting that "academic spin-out is established to transform scientific discoveries created into commercialising products for profits generation". Traditionally, universities are not-for-profit organisations but the modern academic world that requires them to contribute to the socioeconomic advancement of their countries have diverted their mission to include profit-generating organisations. Hence, reaction to this change is different for universities. Thus, the questions raised include: why are universities responding so differently? What are the prime determinants shaping the entrepreneurial edge of some universities over the other? Henceforth, other reasons for applying evolutionary RBV include:

First, the varying degree of the corporate entrepreneurial activities of the universities connotes that they have different approaches toward entrepreneurialism. Second, the resource is one of the essential components of an entrepreneurial university (Farsi et al., 2012; Guerrero et al., 2014; Guerrero & Urbano, 2010). Third, universities compete on series of activities ranging from teaching (best students, new programmes, excellent reputation), research (funding and quality) to entrepreneurial such as cost-effective technology transfer (Powers & McDougall, 2005) and international students' income (Logie, 2015; Martinez & Kitaev, 2009). Fourth, giving that resource contributes to sustaining competitive edge (Priem & Butler, 2001), then adjusting to the entrepreneurial university paradigm helps universities to sustain competitive advantage (Guerrero & Urbano, 2010). Fifth, the resource is a critical factor of innovation (Hadjimanolis, 2000) and innovation itself

102

is a prerequisite for entrepreneurial university development (Clark, 1998; Sam & van der Sijde, 2014; Van Vught, 1999), which is embedded into the daily routines and interactions of HEIs. Besides, the ongoing global crisis made innovation and enterprise a key focus on improving public services (Brown & Osborne, 2013), especially the HE sector.

Finally, the term entrepreneurship is often associated with private sector activities, for example, commercialisation is a mechanism to transform the knowledge into products, services, and institutes in order to have 'competitive advantage' and to drive regional economic growth (Mueller, 2005). The commercialisation of knowledge and other facets of it led to entrepreneurship to frequently appear in public sector literature. Audretsch (2014) summarised these points when he wrote that universities have evolved as entrepreneurial to support the commercialisation of research and knowledge for a 'sustainable and progressive' ecosystem. Therefore, the integration of both private and public-sector activities into the objectives of HEIs created challenges for university leaders and managers with a growing interest for them to adjust their institutions in a more flexible and adaptable way.

Further to this, "the main activities (teaching and research) of universities cover a broad spectrum of studies [...] regardless of where these activities lie on the spectrum, the fact that they are conducted in the dynamic business environment of the higher education (HE) sector presumably means that they are directly and indirectly relevant to business" (Simon, 1967, p.1). On the notion of relevance for business, the emergence of the entrepreneurial university is focused on business/industry relationships as well as regional community engagement to provide unique solutions to societal problems for social and economic advancement. Perhaps, in today's HE context, the goals of a university are no longer limited to the pursuit of knowledge for its own sake rather it is to apply the knowledge in the pursuit of practical solutions (Simon, 1967). In this vein, RBV is substantially an appropriate theory to investigate and understand the determinants underpinning the development of British self-defined entrepreneurial university.

Considering the above, utilising the evolutionary RBV perspective to focus on the determinants influencing corporate entrepreneurial activities of a university that generate

an entrepreneurial edge is crucial; that is, understanding the unique determinants and characteristics underpinning the entrepreneurial universities is the unit of analysis in this study. The limitation of the RBV theory is that it does not sufficiently explain the characteristics components of the entrepreneurial university because it mainly captures internal analysis and factors tenets only. This internal analysis issue has been raised by many scholars (e.g. Lavie, 2006; Zaheer & Bell, 2005).

Though it is deemed apt that RBV is a substantially relevant theory which has also been adopted by some entrepreneurial researchers such as Salamzadeh et al. (2011); Farsi et al. (2012); and Guerrero et al. (2014), the perspective is limited to internal impetuses only. This suggests the need for a combined analytical approach for this study. Therefore, the following section explains the origin and meaning of CE as the concept that complements evolutionary RBV constructs.

4.3 Corporate entre (intra) preneurship

Certainly, since universities are corporate entrepreneurs as defined in subsection 3.1, the use of CE as an analytical concept becomes legitimised in the study. The core reason for using CE in this thesis as an analytical lens lies in its value in terms of how it can be utilised as a "strategy" to engage in entrepreneurial practices for competitiveness (Kuratko & Morris, 2018, p. 42). Some entrepreneurship scholars (e.g. Kuratko & Morris, 2018) have acknowledged that organisations struggle with thoughtful strategies to induce their entrepreneurial activities. Other scholars (e.g. Ireland et al., 2009; Morris et al., 2011; Lerchenmueller, 2015) have called for the need to do more with CE looking into the strategy aspect. Seeking to account for and highlighting the strategy aspect of entrepreneurial activities is of significance to managerial practice as well as advancing theory with corporate entrepreneurial strategies.

Furthermore, by testing the validity of the CE concepts, some scholars (e.g. Hind & Steyn, 2015) have found a relationship between strategy renewal and venturing activities. Here, then, I am talking about how entrepreneurial activities are grounded in strategy and

how the strategy is facilitating the university to respond to the dynamism in the environment. As such, different strategies are recognised to offer insight into how universities are strategically evolving toward entrepreneurialism.

Therefore, while the RBV can provide a detailed examination of the organisational resources, it is narrow and minuscule in shedding light to the external environmental factors and strategy types underpinning the evolution of the entrepreneurial university and therefore could not provide holistic coverages for the study. There are external factors influencing the entrepreneurial university from the outside environment, which has been observed has had relatively a few kinds of literature reporting how nature of certain societal environment may impact on entrepreneurship (Rasmussen et al., 2012). As such, the evolutionary RBV was employed to take care of the wider business-external environmental aspects of the entrepreneurial university.

Given that the evolutionary RBV is a theoretical lens used in this study to account for the factors side of the entrepreneurial university as an external analysis, CE was summoned to account for the characteristics (entrepreneurial practices) side. The considerable potential for CE to 'renew' universities through entrepreneurial activities has led to its application in this thesis as an analytical concept. Besides, the belief that CE is a result of combining the entrepreneurial activities of multiple participants (Brizek, 2013) permeates the thesis definition in Chapter One.

Some scholars (e.g. Guth & Ginsberg, 1990; Zahra, 1996; Corbett et al. 2013; Sakhdari, 2016) have acknowledged the inadequate and lack of coherent differentiation in entrepreneurial activities. As summarised in Appendix 15 (Table 29- scholars who have categorised CE activities), it was observed that this lack of clarity could be due to the extensive use of traditional theories. This suggests that more needs to be done with CE in terms of clearly classifying the activities with attention to strategies adopted by different universities using contemporary views (herein the evolutionary RBV combined with the strategic CE and other concepts as shown in Figure 6 and Table 3 below). Also, the inadequate categorisation could be due to fragmentation in the unit of analysis, Appendix 15, Table 29 suggests. This is because scholars have not vividly considered bringing

together all hierarchical levels (individual, organisation, society) of impact. Therefore, entrepreneurial activities need to be clearly branded with all impact levels.

However, adopting intrapreneurship, Kirby (2006) suggested that in addition to the senior management's commitment towards entrepreneurialism, the academics self-belief in the strength to apply entrepreneurship in order to allow their universities to have favorable attitudes towards the transformation process is of significance. Furthermore, Kirby (2006) identified assistance and rewards as crucial to entrepreneurial university development. While Kirby's contribution focused on the internal aspect of CE, this thesis integrates the concept to look at how entrepreneurial practices are configured and how the strategic side of the universities shape entrepreneurialism.

As such, CE was embedded into the characteristics side and the strategic renewal component of CE was incorporated into the strategic facets.

Otache & Mahmood (2015) conceived that CE is an organisational level entrepreneurship; that is, corporate entrepreneurial activities within an existing organisation. Although this is a precise definition of CE, it is not broadly conceptualised.

The most widely cited and pioneering scholar on CE so far is Professor Shaker Zahra. CE considers that a firm's external environment, corporate strategy, and internal influences may shape the extent of commercial venturing activities (Zahra, 1991). The term CE is appropriately considered in this thesis on its notion of the three key concepts: intrapreneurship, corporate venturing and strategic renewal which are explained later in the succeeding section. Furthermore, unlike prior scholarship (Zahra, 1986) that considered that organisations innovate as a call from their external environment only, the 1991 version of CE shows the interaction between external, strategic and organisation's tangible and intangible elements vis-à-vis expected organisational outcomes (see Figure 6).

In the academic environment, CE has materialised since the 90s at Stanford University where Sergey Brin and Larry Page invented Google idea as a research project in January 1995 as Ph.D. students and Google Inc. has become a pioneering organisation across the globe since its establishment in 1998 (Finkle, 2012). This indicates that innovation and creativity are core components of CE by transforming ideas into the

development of new and valuable resources. This sets the background on the relevance of the theory in this research. Perhaps, CE has been utilised to address entrepreneurial behavior within reputable mid-sized and large-sized establishments (Guth & Ginsberg, 1990). This definition may apply to universities in terms of numbers of employees and students' enrolment as well as their teaching orientation and research intensiveness in terms of pre-1992 and post-1992 institutions.

Further to this, and from the CE perspective, Yusof et al. (2012) attempted the entrepreneurial university as an institution that adapts its strategies to the entrepreneurial mindset across the university with extensive practices of academic entrepreneurship that extend to academic-business technology transfer activities. While using the term academic entrepreneurship, the authors identified people management, control, culture and entrepreneurial leadership as the main factors. This suggests that Yusof et al. (2012) provided a one-sided view in terms of focusing on internal analysis only.

On a similar ground, Burgelman (1983) defines CE as the diversification of a firm's activity through internal development which involves new resources that enable the organisation to extend its activities in the new opportunity paradigm. From a similar perspective, Sharma & Chrisman (1999) describe CE as a process where individuals or groups within an existing organisation set-up an enterprise or introduce some strategic enhancements to ongoing organisational activities and routines.

Also, from an internal perspective, Logie (2015) asserts that CE phenomenon is an avenue for initiating entrepreneurial activities inside established organisations. Adopting entrepreneurial orientation and entrepreneurial management (management structure, entrepreneurial culture, reward philosophy, growth, strategic and resource orientation) terms, Otache & Mahmood (2015) conceptualised CE as the entrepreneurial posture demonstrating the organisational activities, processes, practices and administrative routines of an organisation.

By extending the concept beyond internal impetuses to study the ability of an organisation to act entrepreneurially, Zahra (1991, 1995) delineates CE as set of activities to strengthen an organisation's ability to innovate, exploit opportunities and take risk (see

107

also Karacaoglu et al., 2013; Shamsuddin et al., 2012). In agreement with Zahra's definitions, some scholars (e.g. Ireland et al., 2006; Stevenson & Jarillo, 1990) considered that CE is the ability of a firm (inclusive of people) identifying and pursuing opportunities without limitation of organisational possessions.

Taking a combinatorial stance, Brizek (2013) asserts that CE is an outcome of the integration of entrepreneurial activities utilising diverse expertise. Although Brizek's definition has similarities with the definition devised in this thesis for the entrepreneurial university in terms of 'utilising diverse expertise', it particularly emphasises more on outcomes only, whereas this thesis inclines more to provide an insightful contribution to both internal and external elements. While the current research acknowledges and appreciates these views, they provide a contemporary base suggesting that both internal and external environmental factors mediate to constrain or enhance entrepreneurial and innovative activities within a university. Also, by amassing the conceptualisation of CE, its tenets are well-suited to explore both the determinants and characteristics of the entrepreneurial university as the theory underlines internal and external indicators.

According to Zahra (1991), either internal or external oriented CE could possibly be either formal or informal activity, with the aim to create new businesses within an established organisation. This expression is appropriate for the entrepreneurial university in terms of forming new ventures and introducing new venture creation programmes into the curricula agenda aimed at encouraging start-ups among students and graduates. Zahra adds that such activities may be carried out at various levels (corporate, business, functional, or project) with the collaborative purpose to improve competitive position and financial performance of the organisation. On the notion of collaboration, CE aligns well with the entrepreneurial university in terms of university-business engagement. In support of this view, Brizek states that:

"...firms' level of entrepreneurial activity varies between different entities. This fact is influenced by both internal and external contexts. Some firms are more innovative and proactive than others which prefer stability to risk-taking" (Brizek, 2013, p. 3).

The key terms in the above statements - innovative, proactive and risk-taking, internal and external context well captured the essence of heterogeneity resources among entrepreneurial universities hence reflecting why universities may vary in their approaches towards entrepreneurialism. To further substantiate his claim, Zahra (1991) offered a framework for CE to show the correlations between the factors influencing the pursuit of CE activities. Figure 6 presents the framework with some modifications to its elements to aid understanding when applying it to the entrepreneurial university sphere and to be easily aligned with the purpose of this study.

Having discussed the meaning and relevance of CE, its components are explained in the subsequent sub-subsection.

4.3.1 Components of corporate entrepreneurship

As summarised in Table 29, Appendix 15, there are scholars who have expanded CE with strategic aspect (e.g. Lerchenmueller, 2015), some classified corporate entrepreneurial activities into internal and external (e.g. Kuratko & Morris, 2018), and others (e.g. Hind and Steyn, 2015) have found that venturing and renewal have similar interpretations distinguished to intrapreneurship. Yet, little is known about the strategies (Appendix 19) that universities are adapting to embrace their distinctive entrepreneurial activities (Appendix 20). Also, Table 29 shows that some scholars have categorised CE on multidimensional activities and others based on single dimensional activity within private firms only and little is done on reporting the strategies underneath the specialisation and differentiation in such activities. Also, most of the scholars have considered the individual level (e.g. senior management team), some looked at the firm level (e.g. an organisation), and others measured environmental level (e.g. network) as the unit of analysis. These gaps provide an avenue for expanding CE with levels of impact and strategy types underpinning the entrepreneurial activities within public organisations.

The scrutiny of the definitions of CE takes into consideration three major components namely intrapreneurship, corporate venturing and strategic renewal (Seerden, 2015; Wang & Zhang, 2009).

First, CE is entrepreneurship, knowledge creation and exploitation with focus on how the entrepreneurial process might create different types of knowledge, the interaction between specific forms of entrepreneurial activities and kinds of knowledge, and how particular organisational mechanisms are more effective in transforming certain types of knowledge into innovative activity than others (Audretsch, 2015). Some scholars (Logie, 2015; Seerden, 2015) who took advantage of CE often refer to this first part as intrapreneurship, which is associated with the academic entrepreneurship concept within the entrepreneurial university domain. With reference to Pinchot (1985), both Logie and Seerden equate 'intrapreneurship' with entrepreneurship within the university settings pointing to an example such as business start-ups. This aspect of the theory was utilised in this study to explore the various characteristics profiling the entrepreneurial activities undertaken by universities.

Second, CE emphasises the abilities of entrepreneurial organisations (new or established) to build and use capabilities and how these capabilities shape their organisational outcomes including internationalisation (Zahra et al., 2006).

The 'strategic renewal' concept is used to describe the aspect referring to the process of transformation of corporations through the renewal of their main ideas (Seerden, 2015) utilising new combinations of resources (Guth & Ginsberg, 1990). According to Zahra (1996), strategic renewal involves the redefinition of an organisation's mission through the creative deployment of resources which result in new combinations of goods and know-how that are distinguished in the market (Hornsby et al., 2013). Such renewal and development have to do with the repertoire of managerial capabilities (Kuratko et al., 2014) to deal with opportunities and threats as they emerged and the responsiveness of the organisation through its culture, structure, and technology (Volberda, 1996). In describing the strategic perspective of CE, Corbett et al. (2013) and O'Connor and Rice (2013) posit that firms do not necessarily need to have created a new business but understand how to execute

110

opportunities in high levels of uncertainty of multiple dimensions. This strategic perspective is where this thesis conceptual view of utilising CE sits. In a concise term, strategic renewal is equivalent to redesigning the universities' mission to reflect entrepreneurial objectives. Seerden (2015) suggests that this effort is leading to significant strategic and structural changes. This area could provide an understanding of the distinguishing features that allow universities to pursue their entrepreneurial activities.

Finally, Seerden (2015) labeled corporate venturing as new business venturing pursue to enter new market relevant to the organisation. Corporate ventures may be internal or external which is faster and better at exploring or exploiting new knowledge (Anderson & Tushman, 1990) with emphasis on value creation and exploitation of existing capabilities (Mason & Rohner, 2002). Corporate venture exploits new markets, new product offering or the combinations (Seerden, 2015). Sharma & Chrisman (1999) distinguish internal corporate venturing from external corporate venturing stating that while the former sits within an established organisational context, the latter involves those activities such as venture capital initiatives, joint ventures, and spin-off companies or spin-out formation leading to autonomous organisational domains that reside outside the existing organisation. This suggests that while certain universities may have distinguished characteristics of business-related activities which profiled them as entrepreneurial, there is a need for further classifications by sorting them into distinct practices.

CE assumes that a combination of environmental, strategic, and organisational related elements have collaborative implications on corporate entrepreneurship efforts (Zahra, 1991). Also, it is assumed that corporate entrepreneurship aids in the understanding of the factors affecting financial outcomes. Although the current research does not specifically focus on financial performance, rather it considers the prime determinants influencing and characteristics underpinning the entrepreneurial edge of higher education institutions. The concept undoubtedly provides the useful analytical basis for understanding the entrepreneurial university as it clearly expresses how entrepreneurial activities and other organisational elements are complementary to shape the outward-looking of entrepreneurial organisations.

111

Though the perspective is a business or corporate based theory it can still apply to higher education context because teaching, research, and entrepreneurial activities are meant to be complementary. On the ground of complementarity, investigating the determinants and characteristics that underpin the pursuit of entrepreneurialism is not inappropriate to fill the gap identified above. This study seeks to contribute to this aspect. However, the next subsection discusses how the CE components have been embedded in this research.

4.3.2 Application of corporate entrepreneurship

The analytical framework in Figure 6 highlights the wider factors shaping the organisational outcomes including changes in the *environmental context* (political, economic, social and technological) which result in new opportunities and new developments posting organisations for new innovative ventures and react creatively to the challenges posed by these external factors. Thus, CE provides assistant to respond to these evolving competitive forces through innovation practices (Zahra, 1991). While the *strategic factors* constitute organisational mission and goals guiding the deployment of a firm's resources, the *internal resources* include tangible (formal organisational structures) and intangible (specific organisational values such as managerial philosophies and approaches to encourage the people to take risks) organisational themes which may enrich or inhibit corporate activities (see also Eghtedari et al., 2013; Ferreira, 2002).

Since Zahra does not show the reverse effects of organisational outcomes on corporate entrepreneurship activities, it can be assumed that an organisation's outcome is directly influenced by both internal and external variables. According to Covin & Slevin (1991), a business organisation sustains entrepreneurially when its culture encourages taking the risk, proactivity, and innovation. Ireland et al. (2006) asserted that change and innovative culture of an organisation is crucial for entrepreneurialism to sustain. Hence, external environmental factors may have direct and indirect consequences of commercial activities (Sebigunda, 2013). Otache & Mahmood (2015) summed this up highlighting that

112

management must think and behave entrepreneurially to translate individual entrepreneurial behaviour into organisational entrepreneurial behaviour and culture. Therefore, the proper understanding of the determinants underpinning the entrepreneurial development of universities within the interactive process is not only essential but could serve as defining attributes of universities that are considered entrepreneurial.

Also, Zahra does not explicitly capture the essence of management on corporate entrepreneurship activities. However, prior scholarships had identified how strategic leaders may influence CE vis-à-vis specific organisation's structures. For example, Guth & Ginsberg (1990) surveyed the following three factors: first, senior management styles influence the outcome of a newly set-up business venture. Second, the effectiveness of middle-level management to facilitate relationships with peers and top management in supporting their entrepreneurial ideas influence the extent to which outcomes are derived. Finally, innovative service organisations are led by highly talented and diverse groups.

While these factors suggest further scrutiny into the role of both individual and management teams, Ferreira (2002) holds that entrepreneurial behaviour is significantly affected by the attributes, visions, and morals of managerial teams. On the notion of sensitivity, the strategic mission and goals of a university are formulated on major sensitive facets of resources and capabilities such as funding and people amongst others. This therefore, suggests that the strategic responses that help a university to seize opportunities and act more entrepreneurially are made on a collaborative effort of specific group at various levels (strategic, practice or academic leaders) within the university rather than the natural sensitivity that only those at the top are involved (Carpenter et al., 2004; Hambrick, & Mason, 1984). The idea correlates with Kirzner's (1979) assertion that to a limited extent executives have discretionary freedom on action to act as entrepreneurs and implement their ideas without setting up a business of their own.

Therefore, in considering the choice of sampling, this study will not be restricted to top-level leaders alone as it has the potential to limit the sample size; that is, it will rather select participants across various levels in the university ranging from operational and strategic staff to academics. More information on sampling is provided in Chapter Five.

113

While applying a behaviour that questions rigidity and heartens organisational innovativeness, CE utilises fundamentals of management (McFadzean et al., 2005). This pattern reflects the themes of the entrepreneurial university which reminds us that entrepreneurial activity is a result of multiple participants (Brizek, 2013); thus, a collaborative effort that helps an entrepreneurial university to become a leading institution in its sector. Consistently, Mainardes et al. (2011) report that though universities are complex yet they are multi-structural avenues with a collection of organisational objectives related towards creating and disseminating knowledge.

Therefore, to provide a comprehensive analysis of the factors of the entrepreneurial university, this research is not limited to the internal factors only. Rather, it will focus on an array of both within and outside factors in terms of university relationship with its business/community context, and these determinants inform the unit of analysis for the study. In this regard, CE is appropriate to complement the evolutionary RBV as background theories for this research.

The preference for CE includes its conceptual convergence in entrepreneurship discipline (Grégoire et al., 2006) including its potential to offer in-depth understanding into the organisational context, environmental context, and dynamism of the entrepreneurial university phenomenon (Clarysse et al., 2011). The same perspective has been utilised by Yusof et al. (2012) in their case study analysis and Logie (2015) in his investigation into the perception of entrepreneurship in the higher education context. But these authors (Yusof et al., 2012 & Logie, 2015) have utilised CE as a standalone view. Therefore, the next section presents the integration of RBV and CE as a hybrid lens for this thesis.

4.4 Toward an integrated analytical framework

As observed in Table 29 in Appendix 15, some scholars (e.g. Nason et. al. 2015) have understood corporate entrepreneurial activities through an integrated lens (combining theory with the concept). This observation provides a substantial proof for the integration of evolutionary perspective of RBV theory with CE concept in this thesis. Though Nason et. al.

(2015) and others have done so using traditional theories, I have integrated mine with an insight into evolutionary view. Utilising such innovative view is significantly crucial to develop a comprehensive and innovative (EC & OECD, 2012) and all-inclusive model (Sakhdari, 2016).

Prior studies (e.g. Sakhdari, 2016) have called for more to be done on contextualised, capability-driven, social-oriented, process-based, and individual-level models. This has implication to understanding why some organisations are more entrepreneurial than others. As such, it leads to advancing entrepreneurship research. Now that I have applied the theory and concept, I have come up with the hybrid framework comprising elements of the contextualisation, EU framework, evolutionary RBV, CE, and NCEE Award.

"Today, all education providers inhibit a more competitive world where resources are becoming scarcer but at the same time, they must accommodate to increasing demands from local communities, as well as changing, and often rising expectations from parents and employers. Within such a policy context, schools and universities nowadays are increasingly governed by market ideologies and shape significantly by the corporate discourse of efficiency and effectiveness" (Mok & Welch, 2003, p. 1).

In changing and challenging context of higher education, Mok and Welch's (2003) comments above well summarised the need to integrate evolutionary RBV with CE to investigate the contemporary entrepreneurial university phenomenon. This is crucial because the heterogeneity and competitiveness components of the evolutionary RBV emphasise that organisations vary by and compete on both resources and capabilities (Barnett et. al., 1994; Levinthal & Myatt, 1994; Teece et. al., 1997; Karim & Mitchell, 2000; Barney, 2001; Makadok, 2001; Barnett, 2004). Similarly, the notion that the strategic renewal, venturing, and innovation tenets of CE concept (Zahra, 1996; Romero-Martinez et. al., 2010; Corbett et. al. 2013; Heavey & Simsek, 2013; Sakhdari, 2016) focus on organisations of different sizes, inquest for both Pre-1992 and Post-1992 institutions to be empirically examined in this study. Therefore, by combining evolutionary RBV with strategic CE, universities of different status (eight pre-1992s and seven post-1992s) and educational

115

focus (teaching-oriented, research-intensive, and technology-based) are compared as shown in Appendix 14.

Whilst experts (Berggren, 2011; Berggren & Lindholm, 2009; Christos et al., 2012; Farsi et al., 2012; Ferreira et al., 2006; Ferreira et al., 2013; Kirkman, 2008; Okpara, 2008; O'Shea et al., 2007; Powers & McDougall, 2005) have adopted RBV to understand internal factors of the entrepreneurial university development, some of them (Guerrero et al., 2014; Guerrero & Urbano, 2010; O'Shea et al., 2005) combined RBV theory with institutional economics. Whereas, institutional economics is a complex theory that often emphasises that economic (market structures and theories of advantage) and political power (theories of behaviour) inter-linked thereby placing institutional analysis in a more general policy analysis. Therefore, as the theory focuses on understanding the role of process and institutions in influencing economic behaviour, it is not always suitable to solve problems associated with organisational design for performance improvement.

However, scholars (e.g. Logie, 2015; Seerden, 2015) who have summoned CE in entrepreneurial university research is relatively few. Then there is a paucity of literature on the integration of the evolutionary RBV (e.g. Karim & Mitchell, 2000; Levinthal & Myatt, 1994; Teece et al., 1997) with strategic CE to scrutinise the factors and characteristics components of the entrepreneurial university respectively. Therefore, it is self-evident that theoretically and conceptually, this research contributes to this aspect. Empirically, some studies have examined the internal factors and others have explored the external context of the entrepreneurial university, but there is a lack of empirical literature accounting for the taxonomy based on these factors. Also, the essence of management in entrepreneurial university development is overlooked. Therefore, by integrating RBV in terms of resources and capabilities tenets with CE in terms of dedicated strategy and entrepreneurial practices, the analytical framework for this research is proposed.

In this research, the analytical framework proposed for this study integrates a series of constructs as Figure 6 illustrates. While contextualisation reflects the entrepreneurial university interaction with the environment, the resources and capabilities explain the determinants aspect of the entrepreneurial university. The internal and external venturing

116

(herein practices) describe the characteristics aspect in terms of the initiatives put in place in pursuit of entrepreneurialism. Then impacts represent the outcomes associated with and benefits derived from being entrepreneurial. The elements underpinning the constructs continue to build up as the research progresses; that is, emerged as data are analysed (Miles & Huberman, 1994). Some scholars (e.g. Baxter & Jack, 2008) in the research method field argue that the limitation associated with the conceptual framework is related to how the subject is inductively explored. Therefore, in order not to be a victim of the equivalent, the researcher makes notes and discusses ideas as they emerged with extensive networks in conferences, seminars, and workshops who pointed out and provided feedback if the framework has not driven the researcher's thoughts more than the data.
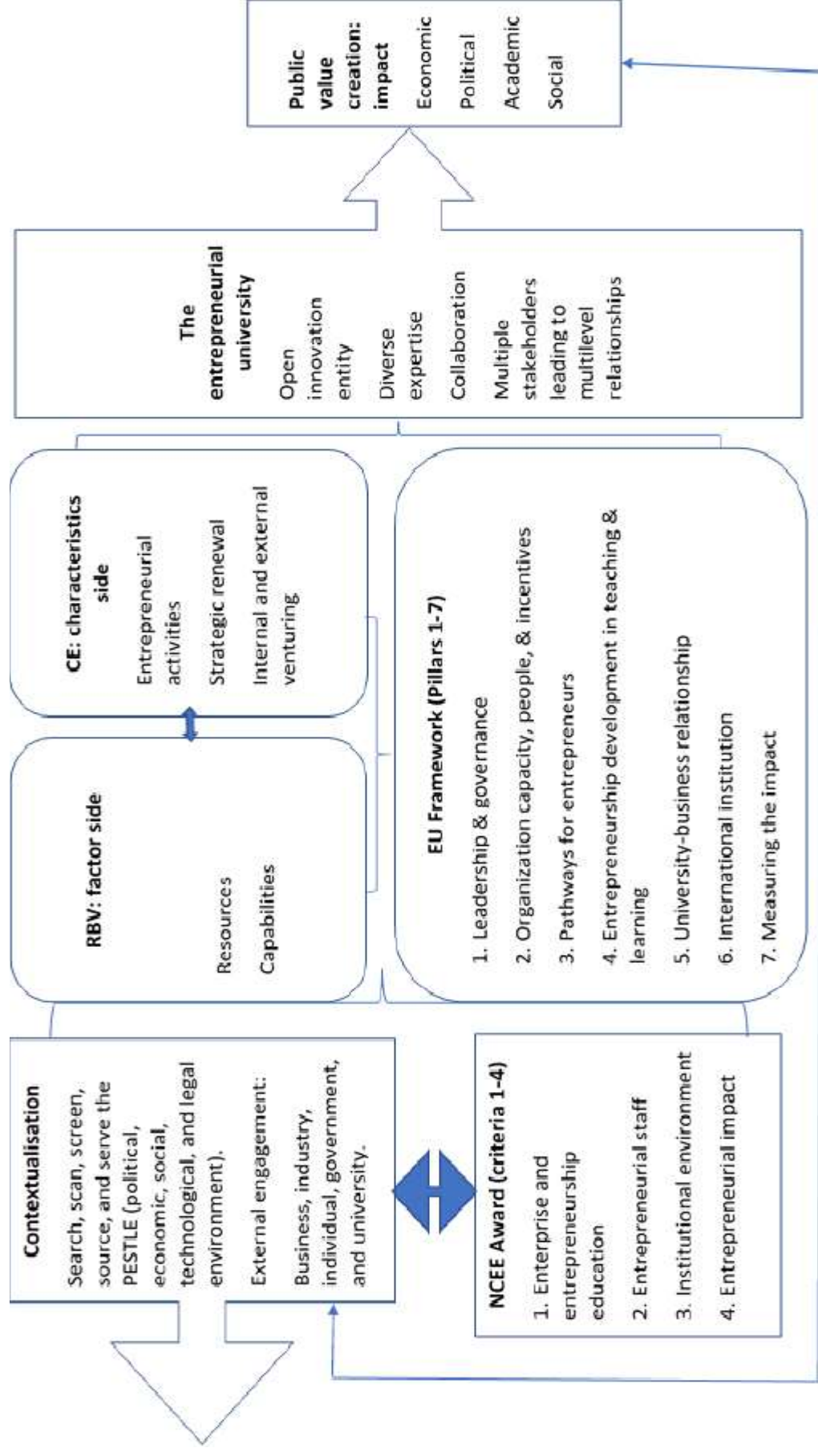
Figure 6: An analytical framework for the entrepreneurial university
Source: Author's own

Having conceived the entrepreneurial university as an open innovation entity, the analytical framework assumes that various factors influence its development. It also assumes that subject to the environmental context, universities in the same and/or different locations (e.g. England and Scotland) engage in different entrepreneurial activities and have different practices toward becoming more entrepreneurial that are unique to their organisations based on the resources available to them. Whilst they may be unique in their approaches to entrepreneurialism, they are heading toward the same destinations in terms of their entrepreneurial impacts on the individual, organisation as well as wider society. These assumptions led to the formulation of the following four propositions.

Firstly, an entrepreneurial university could be a collective, an accessible and open innovation entity that accommodates diverse expertise and series of knowledge maintaining different types of relationships (collaboration, network, and partnership) and understands the challenges in the surrounding of the higher education context. Secondly, an entrepreneurial university may likely generate leading edge above others through its unique combined capabilities and utilised resources. Thirdly, an entrepreneurial university may continuously embed and enmesh strategy that allows it to search, scan, screen, and source for opportunities and capitalises on those opportunities. Finally, an entrepreneurial university may likely have wider impacts that extend well beyond academic to including economic, political, academic and socio-cultural benefits. The long-term contribution to regional and national innovation through research via commercialisation and spin-out companies, student, and graduate start-ups, the development of enterprise and entrepreneurial community, promotion of entrepreneurial culture and strengthening of international market-based. All these outcomes become realistic because entrepreneurial universities are flexible, self-reliant and innovative institutions that continuously incorporate new approaches and distinctive strategies by being proactive to take the risk in making the strategic choice of embedding enterprise and innovation into the core of their agendas.

The next section provides a snapshot view of the overall discussion in this chapter.

119

4.5 Summary

Various theories (see Appendix 15 Table 27) have been utilised to conceptualise the entrepreneurial university. However, there has been a few studies that have clarified the factors and characteristics components of the entrepreneurial university in the UK. Therefore, this suggests that there is a need to combine the evolutionary RBV theory with the strategic perspective of the CE concept. As shown in Table 3 below, this thesis is grounded in an integrated framework utilising RBV theory and CE concept from an evolutionary and strategic perspective to study the determinants shaping and the characteristics underpinning the entrepreneurial university. Evolutionary RBV is underpinned by organisational resources and capabilities in the possession of a firm to induce innovation. CE refers to any organisation (new or old universities) having a business to create value and the strategic view of the concept is underpinned by the strategic renewal of the venturing activities. While RBV is incorporated into the factor, CE is embedded into the characteristics components of the EU framework.

The application of an integrated view shows the intersection between internal, external and strategic factors. It also shows the intersection between determinants and characteristics of the entrepreneurial university, which is yet to be covered in the academic literature. Given the need for an entrepreneurial response to address the dynamism in the external environmental context, it is of significance to capture the key organisational capabilities and resources helping universities to respond entrepreneurially to opportunities and undertake new and evolving areas of activities. According to Baxter & Jack (2008), propositions enhance the likelihood to place boundaries and limits to the scope of the study thereby increases its feasibility, they may emerge from previous studies, own or expert experience, and/or generalisation from the observed phenomenon. For this research, the propositions ensued from literature and theoretical perspectives which are presented around the key constructs identified.

Table 3: Summary of the key components of the adapted analytical lens

Contextualisation Co-evolutionary presence of multiple actors (individual, business, industry, government, and university). Search, scan, screen, source, and serve the business-external environment provides knowledge and understanding of latest trends and developments. Thus, having implications for competition enhancement.	
EU framework Pillars 1-7 (subsection 1.2.1)	NCEE Awards Criteria 1-4 (section 2.4 and Figure 6)
An evolutionary perspective of RBV	The strategic perspective of CE
'Resources' are internal and external sources of capabilities that organisations use in pursuit of a competitive advantage (Zahra & Nielsen, 2002).	Emphasises on the abilities of entrepreneurial organisations (new or established) to build and use capabilities.
Resources include human, financial, physical and organisational capital (Barney, 1997).	Demonstrates how these 'capabilities' (internal and external) including internationalisation shape organisational outcomes (Zahra et al., 2006).
An organisation's ability to develop an innovative and unique way of utilising resources can become a leading edge (Zahra & Nielsen, 2002).	'Strategic renewal' involves the redefinition of an organisation's mission through the creative deployment of resources which result in new combinations of goods and know-how distinguished in the market (Hornsby et al., 2013).
Organisations vary in their performances based on their competitive abilities (Barnett et. al, 1994).	CE helps to understand why some organisations can generate higher levels of corporate activities than others (Sakhdari, 2016).

In contrast to other organisational level theories such as entrepreneurial architecture that takes into consideration the internal factors only in terms of structure, system, culture, strategies and leadership (Nelles & Vorley, 2009, 2010), the central argument of integrating a theory with a concept is that resources and capabilities components of an organisation do not only reside within the organisation because firms do not operate in epistemological isolation from their external environment. As such, the unique integration of this perspective provides holistic coverage of the entrepreneurial university phenomenon.

Having reviewed literature on the conceptual and theoretical underpinnings of the entrepreneurial university, the subsequent chapter looks at the methodology and methods for   data   collection.

Chapter 5 Research methodology

This chapter discusses the case study (CS) research methodology, qualitative research methods for gathering data, philosophical perspectives and tool for analysis. The chapter is divided into eight parts. Part 5.1 revisits the research objectives, discusses the decisions made in adopting the social constructivist and interpretive positions, and explains how the philosophical paradigm is integrated with the CS design. Part 5.2 considers the philosophical paradigm in detail. Part 5.3 explains CS as the research design. Part 5.4 discusses the sampling techniques adopted in this thesis. Part 5.5 outlines the research methods relating to the data collection techniques used in gathering the data and provides an overview of the techniques adopted in analysing the data. Part 5.6 discusses triangulation and provides a reflective account of the generalisability, replicability, and transferability of the study. While Part 5.7 reflects on the ethical consideration of the study, Part 5.8 offers a snapshot summary of the chapter highlighting the emerging themes. Figure 7 summarises the Chapter.

5.1 Introduction

5.1 Introduction	5.2 Constructivist, interpretive, axiological perspectives and inductive approach	5.3 Case study methodology	5.4 Sample selection
5.5 Three methods of data collection	5.6 Triangulation	5.7 Ethical issues	5.8 Summary

Figure 7: An overview of Chapter Five

This study is underpinned by qualitative research because a modification to the EU framework must be grounded in 'meaning' to thoughtfully clarify the entrepreneurial university components. In contrast to quantitative research, qualitative promotes an in-depth understanding of a subject matter from the research participants' views (Linda & Marie, 2016). That is, the qualitative study implies an emphasis on understanding the conceptualisation (knowing what the entrepreneurial university entails and how it is constructed in that manner) and contextualisation (within its real-world complexity- an understanding of its environment and context) of a social phenomenon.

Unlike other designs in qualitative research such as grounded research (e.g. Charmaz, 2006), netnography (Kozinets, 2006) and ethnography (Fetterman, 1989; Van Maanen, 1988) which consider that theoretical views originated from the raw data, CS methodology allows the application of either theories or concepts to inform the research (Meyer, 2001). In this thesis, it is the integration of both evolutionary RBV (resources and capabilities) with CE (strategic renewal, internal and external activities) that guides the overall research. This suggests a consistency in the methodology and other qualitative approaches undertaken in this thesis with theoretical lenses applied in Chapter Four as will be discussed in the rest of the chapter.

Further justifications for undertaking a qualitative study are provided in the rest of the Chapter. The 32 semi-structured interviews and 15 exploratory CS conducted for this thesis were structured to achieving the set-out objectives and as has been outlined in Chapter One, the main research objectives of this thesis are- RO1: explore the key determinants influencing the development of UK self-defined entrepreneurial universities. RO2: identify characteristics of UK self-defined entrepreneurial universities in their own context. RO3: develop typologies of UK self-defined entrepreneurial universities. The purpose of this is to modify the European framework by clarifying the components of the entrepreneurial universities.

These objectives are derived through the application of CS design which allows us to understand 'how' UK self-defined entrepreneurial universities (see Appendix 14) are responding to the policy imperative 'becoming more entrepreneurial' and 'why' some of them outperform others in terms of their entrepreneurial competitiveness in the higher education marketplace. The inquest to explore certain sub-set of the HEIs and to clarify the components of the entrepreneurial university idea through 'why' and 'how' questions require seeking people's opinion and understanding their interpretation about the entrepreneurial university subject. Therefore, the social constructivist and interpretive position are taken as my worldview and considered suitable for the research scope which in turn informs the qualitative CS design (Pettigrew, 2013). Besides, my social constructivist ontological and interpretive epistemological positions are adequately justified by the research objectives and questions (Saunders & Thornhill, 2009). Likewise, the CS design utilised is appropriately suitable for addressing 'how or why' questions associated with a "complex phenomenon" (Yin, 2014, p. 10).

There are three main CS approaches: Catherine Eisenhardt (1989), Robert Stake (1995; 2006) and Robert Yin (1989; 2009; 2014). Although all these CS approaches utilise different methods, there is a tendency for the subject investigated to be grounded and capture well its essence (Baxter & Jack, 2008). With this, the three approaches sit on the constructivist paradigm. On the notion of social constructivism, the subjective social action of interpretation is the key focused. This paradigm provides closeness between the researcher and respondents allowing them to give detail account about the topic which then places the researcher in an understandable position of the respondent's actions (Lather, 1992).

As such, the above explanation provides clarity into how my philosophical position is woven into the CS design. However, before proceeding to further detail on the case study design, it is important to discuss vividly my philosophical position. Therefore, the social constructivist philosophy and interpretive paradigm adopted in the study are covered in the following paragraphs.

125

5.2 Ontology, epistemology, axiology and research logic

The philosophical position is my worldview underpinning this thesis both ontologically and epistemologically (Guba & Lincoln, 1994). Inability to understand the philosophical underpinning of any study may influence its quality (Easterby-Smith et al., 2008). Therefore, as highlighted in subsection 1.2.1 that the components in the EU framework have different interpretations (factors, characteristics, and outcome), this requires an inquiry from multiple realities to help clarify them. This led to my choice of constructivist and interpretive paradigm, and an axiological perspective. Considerably, all these are suitable to the research objectives in section 1.3 because meaning or understanding via multiple means is the power to that clarification in the EU framework components. In a similar way, social constructionist paradigm which involves "creation of knowledge based on the active social interaction with participants" (Logie, 2015 p. 56) was considered useful because it also captures social as a way of learning, but priority was given to my levels of analysis (universities) which require greater flexibility. So, rather than being dwelled in and emphasising on my interaction with the individuals, I emerged from and step back to understand the case contexts via different views of the research participants. That is, individual-level interaction with the research participants is not the core focus of the research. In the next subsections 5.2.1 and 5.2.2, my social constructivist ontological position and interpretive epistemological stance are vividly discussed respectively.

5.2.1 Social constructivist ontology

Logically, in every research, ontology precedes epistemology, epistemology then informs the methodology (Hay, 2002), meaning that ontology is the starting of any research. The ontological assumption is associated with our beliefs about "social realities" (Blaikie, 2000, p. 8) regarding "worldviews" (Benton & Craib, 2011, p. 4). Based on these perspectives, ontology is a significant aspect of the research which is related to the different ways of understanding the world and as such can influence the ability of the researcher to derive the research outcome as well as the type of research questions to be explored.

126

The ontological position adopted for this thesis is the social constructivist position, which is the construction of knowledge based on the understanding of the culture and context (McMahon, 1997). The assumptions underlying social constructivism are: knowledge is socially and culturally constructed (Ernest, 1999), interpretation of the world is shaped by a human (Kukla, 2000), as well as the assumption about learning as a social process that occurs through collective individuals engaging in social activities (McMahon, 1997). Therefore, the knowledge and social meanings are constructed based on the intersubjectivity of the individuals, which are influenced by and evolved through the people's experience (Prawat & Floden, 1994). Based on these assumptions and views, social constructivism argues that people create reality through social interpretation without objective means. Therefore, my social constructivist view is suitable for my research purpose- to amend the EU framework and to address the three objectives stated in Chapter One which were underpinned by gaining new insights. In doing so, this perspective informs my sampling choice (purposeful and expert) for the cases and research participants. Choosing constructivism is essential to understanding the level of consistency in the findings as shown in Table 11 (section 5.6).

Having considered these different perspectives, Bryman (2001) summarised these views, defining social constructivism as: "social phenomena and categories are products of human (social) interaction, which are continuously revised" (Bryman, 2001, pp. 16–18). Therefore, adopting this definition in this thesis has two implications. First, answers to the research questions formulated for this study are generated through active interaction between the researcher and the research participants. Second, the researcher takes a flexible stance by being open to innovative ways of seeing and interpreting data.

Based on Bryman's (2001) assertion, Grix (2002, p. 177) adds that "social constructivism is an alternative ontological position to positivism with the claim that social actors incessantly influence the interpretation given to social issues". As such, constructivism does not only create knowledge through human interaction but also tolerates

127

flexibility in the research inquiry. Therefore, on the notion of flexibility, this study is well-grounded in the exploration of evolving questions.

Having explained my social constructivist stance, now my interpretive epistemological position is considered.

5.2.2 Interpretivism epistemology

Epistemology is the process of "gathering knowledge to develop new theories that could advance competing for theories" (Grix, 2002, p. 177). In congruence with social constructivist ontology, this research adopts an interpretivism epistemology. The application of the interpretive and constructivist paradigm is of significance in this study because as noted in section 4.2 that this thesis emphasises 'meaning' to modify the EU framework within the UK context. So, it fits well with the qualitative CS methodology and my axiological value (deriving meaning from multiple people and using multiple methods) adopted in the thesis. Thus, and has been discussed in Chapter 4.2, this paradigm is important because different units of analysis (factors and characteristics) are explored from different views (RBV theory and CE concept).

The interpretivism stance asserts that "in everyday life, knowledge is socially distributed in various forms through a wide range of people" (Berger & Luckmann, 1967, p. 60). Therefore, taking an interpretivism epistemology stance enables "the advancement of knowledge to be co-created through active involvement" (Gergen, 1985, p. 267). Having reflected on these views like many other entrepreneurship scholars (e.g. Clarke, 2015; Logie, 2015), the Bryman's (2001) description is adopted as a definition for this thesis.

The interpretivism epistemological position advocates that a strategy is required in the social phenomenon to recognise the differences between people and objects that require the researcher to have a subjective view about the interpretation ascribed to societal actions (Bryman, 2001). Therefore, my interpretivist epistemological stance allows me to derive an in-depth understanding of the entrepreneurial university phenomenon from multiple people at different levels of the organisation. In doing so, the approach is

appropriately suitable to address interpretation problem associated with the entrepreneurial university as identified in subsection 1.2.4. The constructivism and interpretivism belief that reality is not objective and exterior, but socially constructed by people (Easterby-Smith et al., 2008). Based on the social interaction involved, the interpretivism stance allows social scientist to adopt a methodology that aligns well with this paradigm in developing an understanding of the social phenomenon. Grix (2002) suggests the use of few case analyses with either statistical or non-statistical research approach. As a result, in this thesis qualitative case study is considered suitable. As a summary of my justifications for the conduciveness of these views in relation to my methodology and analytical approach, Table 4 below details other options.

Table 4: Key facts about paradigm options

	Constructivism	Pragmatism	Critical realism	Positivism	Transformative
Ontology	Constructivism	Pragmatism	Critical realism	Positivism	Transformative
Epistemology	Interpretivist	Strong constructiveness	Strong positivism	Positivism	Transformative
Purpose	Convergence	Invention	Discovery	Exposure	Social justice
Conception	Question or proposition	Critique	Hypothesis	Hypothesis	Addresses inequality/injustice
Methodology	Case study	Engagement & reflexivity	Experiment or longitudinal study	Large survey	Participatory and Collaboratory study
Methods & sampling	Qualitative & selection of small purposeful sample	Mixed & random selection	Mixed	Quantitative & large sample randomly selected	Mixed
Data type	Meaning & understanding word	Sequential/concurrent	Numbers and facts	Seeking consensus	Observation or immersion in fieldwork
Data analysis and management tool	Qualitative software (e.g. Nvivo)	Either or both	Either or both	Quantitative (e.g. SPSS)	Descriptive

Analysis	Inductive/thematic/ triangulation/ comparison	Sense-making/understanding	Falsification/verification	Deductive/correlation /regression analysis	Evaluation toolbox
Results	Generating ideas or gaining new insights into knowledge	Actions	Acknowledging theories	Testing ideas or proving the hypothesis	Action-taking steps/transformative changes

In contrast to other paradigms, a transformative paradigm advocates for researcher's inquiry into power and privilege and it promotes social justice regardless of the differences in culture and norms (Jackson et al., 2018). This is also an interesting paradigm but does not relate to the nature of my research. Before proceeding to the discussion of the methodology, it is important to identify the researcher's value in terms of understanding the subject through multiple views as well as explaining the research logic. Therefore, the next subsections 5.2.3 and 5.2.4 reflect on axiology and research logic respectively.

5.2.3 Axiology: My value as a researcher

Axiology is my value as a researcher which is in relation to my multiple views from the research participants' perspectives. This is conducive to my constructivist and interpretivism paradigm that is embodied in understanding the social phenomenon from multiple realities. The relevance of such value is to show the depth of consensus regarding the interview discussions. In doing so, it strengthens the rigour and trustworthiness of the research results. It is important to know my research value because I am seeking interpretation and clarification using interviews and visual methods. The term 'axiology' refers to the science of values (Bahm, 1993). Axiology is the philosophy of values, which is an important aspect of "non-statistical method because it directly impacts on research integrity, provides a strong base for devising clear assumptions as well as offers thoughtful insight in researching social phenomenon" (Hiles, 2008). Values are the reasons behind human taking certain actions (Heron, 1996). Based on this affirmation, Logie (2015) advocates axiology as the choice of value that academic scientists placed on how they undertake their studies. Therefore, the use of axiology in this thesis implies that as a researcher, my own value is 'seeking knowledge through multiple views'. That is, meaning and understanding of the entrepreneurial university are derived from hierarchical level inquiries (interviewees across various levels within the university) and integrating PVM and document analysis with interviews. The implication of my axiological perspective is that while different interviewees might provide different responses to the same question, it helps

me to make sense of the different interpretations. This supports my social constructivist and interpretivism paradigm that is embodied in meaning (knowing what something entails and how).

Therefore, as the social constructivist position of this study argues that "multiple realities exist" (Kim, 2006, p. 6), the researcher's values become an important aspect of the overall research methodology. In this thesis, the researcher's values place emphasis in advancing knowledge on the entrepreneurial university through the views of multiple participants across all levels in the organisational hierarchy of the universities. Therefore, to avoid fragmentation of analysis, the interview is conducted across the various levels (strategic, academic and support staff). This is a composition of staff with responsibility for enterprise-related activities rather than be constrained to the opinions of a specific set of people in the organisational hierarchy such as strategic team or managerial staff only.

5.2.4 Inductive research logic

Another important aspect is the awareness of the researcher's strand of reasoning (inductive) adopted in the thesis. Given that this study explores how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial', the inductive logic predominantly aligns well with the social constructivist ontology and the interpretivism epistemology as well as the qualitative case study design. In simple term, inductive reasoning is a bottom-up approach to developing theory from the data (Braun & Clarke, 2006; OBSSR, Website), as such, inductive logic advocates for "investigators to be entrenched within the context of their study" (Logie, 2015, p. 58). Therefore, this logic more compatible with the ontology, epistemology, and methodology in this thesis than the top-down deductive logic that is widely associated with generating hypotheses from the theory, thus a quantitative approach (OBSSR, Website).

In accomplishing and addressing both the research objectives and questions, consideration was given to the research strategy to be applied regarding the organisations in which the study would be researched. In doing so, consideration was given to the

heterogeneity of organisations within the university context in relation to pre-1992 and post-1992 vis-a-vis technological, teaching and research universities. As such, this research was undertaken in multiple organisations, which has broadened the research scope.

In brief, Table 5 provides a summary of the overall research methodological matters: (i) choosing samples; (ii) format of interviewing; (iii) steps undertaking for interviewing; and (iv) Managing and analysing data encountered when undertaking interview-based research (Miles & Huberman, 1994) with examples from this research on how these were dealt with. In doing so, I adopt Siegel et al. (2003) format from the same entrepreneurship field, where such issues have been considered. Then in subsequent sections, detail of each issue is covered.

Table 5: Summary of the overall methodology with examples from this research

Choosing samples	Format of interviewing	The interviewing steps in this thesis	Managing and analyzing data
A purposive sample of fifteen UK self-defined entrepreneurial universities (mix of both pre-1992 and post-1992) from the total of twenty-eight been shortlisted between 2008 and 2015 using the NCEE THE Entrepreneurial University of the Year Award as the case selection criterion was based on 'the record of well-known examples of Entrepreneurial University' in the UK. Judgmental approach to the selection of participants: By targeting participants with at least two years of experience who are involved in enterprise-related roles (some were purposively selected, some were	Semi-structured open-ended questions using one interview schedule. By considering the complexity in the HE sectors in terms of institutional/historical context, as well as complexity in and between university in terms of the relationship with my own university as a	16 telephone interviews 15 face-to-face interviews 1 skype interview To communicate the focus of the study and researcher's identity (place of study in terms of my University's name and course of study in terms of full-time Ph.D. programme), participants were sent background information and permission sheet well in advance of	Digitally recorded interviews. The use of Transcribe Wreally Software for transcription. NVIVO 11 software for organizing and managing the bulk of data. It was also used to electronically code data which was triangulated with the initial manual coding approach. Use of tables to visualise themes and to show more examples of how the data

Choosing samples	Format of interviewing	The interviewing steps in this thesis	Managing and analyzing data
recommended by those who have been interviewed- snowball sample) with rich experience to share their opinion on the subject matter. A stratified approach to the selection of participants: strategic, academic and support staff (in the rare circumstance where it was difficult to recruit due to a timing issue and access to people, at least one participant from any of this organisational hierarchies were considered adequate because other data collection sources: document analysis and participants' diagram were utilised to complement the interviews). In doing so, integrating multiple views from	research institution and time allocated for interviews by the participants, questions were based on the responses evolving from the participant narratives. Main, follow-up and prompt questions were applied during interviews.	interviewing and were given opportunities to ask questions before, during and after the interviews. Assurance of confidentiality and anonymity of both universities and participants were explicitly stated. One year (between 10.08.2015 to 29.07.2016) for conducting interviews.	was coded and broader empirical evidence behind the key findings. Use of charts to develop a case-by-case model documenting different entrepreneurial initiatives as unique to each case and to show how universities with the same status might have different pathways to becoming more entrepreneurial.

Choosing samples	Format of interviewing	The interviewing steps in this thesis	Managing and analyzing data
different informants is hoped to comprehensively shed light on my research questions.			

In contrast to quantitative research, this study purposefully selected 15 cases based on (i) definition- the 'self-defined' entrepreneurial universities; (ii) location- England and Scotland because of their highest number of universities in the UK; and (iii) time- 2008-2015 (2008 was when the UK government started the Times Higher Education Award and 2015 being the start period of data collection in this study) rather than a random selection. This is essential because the research objectives and questions are exploratory in nature. Thus, to explore how UK self-defined entrepreneurial universities are considered 'entrepreneurial' requires a constructivist view which is embodied in 'meaning' of words (interpretations) and this is consistent with my interpretive and axiological perspectives which are embodied in 'multiple views'.

Consequently, semi-structured interviews become essential methods to collect information and key informants for interviews were judgmentally selected based on their 'expertise' (ability to provide relevant information) and therefore, they must have responsibilities for enterprise-related roles. In doing so, participants across different hierarchical levels (academic, strategic, and support staff) were selected for interviews. However, enterprise or entrepreneurship was not vividly captured in the title of some of the interviewees, but the emphasis was given to what they are responsible for in terms of enterprise/entrepreneurship in their various roles. For this reason, some of them were referred (snowball sampling).

After the approval of transcript by participants, I use both manual and computer-aided software NVIVO 11 from QSR International to systematically synthesise data. The collection of a large number of research materials necessitated the significant use of NVIVO 11 in this thesis to aid the analysis process, organise themes, and manage data thereby ensuring robustness of the study (Gibbs et al., 2011). However, in contrast to statistical software (e.g. SPSS), the limitation of NVIVO is that it is not an analytical tool. Following Bryman's (2001), Miles & Huberman (1994) and Miles, Huberman, & Saldana (2014) recommendations that qualitative data analysis consists of procedures or stages, first

exercise in the analysis was undertaken by reading (re-reading) all the documents and manually annotating and highlighting areas of emphasis which has helped to overcome the shortcomings associated with transcription that paralinguistic and unspoken words can shape the interpretation of spoken words (Guest & MacQueen, 2008; Logie, 2015). Consequently, all these enhanced the rigour and trustworthiness of this study.

Having detailed the various philosophical dimensions, highlighted the methodology, and methods adopted in this thesis, it is crucial to virtually capture the whole process to provide a succinct overview. As such, Figure 8 provides a diagrammatical summary of the research process. However, further information about the sampling and the chosen methods is provided in sections 5.4 and 5.5 herein respectively.

Research Paradigm	•Social constructivist & interpretivism
Axiology	•Valuing multiple views to understanding the entrepreneurial university phenomenon
Research Design	•In-depth exploratory multiple case-oriented qualitative study
Research Methods	•Desk exercise •Participant-led visual methods •Semi-structured interviews
Sampling Technique	•Purposeful and expert – judgemental
Research Sample-Organisation	•NCEE Entrepreneurial University of the Year Award (2008 to 2015)- mix of Pre-1992 and Post-1992 institutions
Cross-section of participants	•Academic staff •Strategic staff •Entrepreneurial-related activities support staff
Research Logic	•Inductive enquiry
Qualitative analytical Techniques	•Thematic exploratory analysis and qualitative cluster analysis

Figure 8: Summary of the research process

Source: Author's own

140

Now that my philosophical position has been explained, the research material can be explored. However, before proceeding to the discussion on the sampling and research methods, it is important to elaborate on the methodology. Therefore, in the next paragraphs, the CS design is covered.

5.3 Qualitative case study design

Entrepreneurship scholars have highlighted the lack of qualitative methods and methodologies in the field (Smith & McElwee, 2013; Smith & McElwee 2015). Methodology scholars (e.g. Creswell, 2013) considered CS as a type of design in qualitative inquiry or as a form of qualitative research methodology (e.g. Linda & Marie, 2016). As such, CS is utilised in this thesis as a qualitative research methodology. In contrast to quantitative methodologies (e.g. survey), the reason for this choice is to provide an extensive analysis of the entrepreneurial university as a social system. Here, I repeat the phrase introduced in Chapter One- 'universities as social systems' to describe the relevance of CS to this exploratory form of inquiry. Thus, some scholars (e.g. Creswell, 2013; Lichtman, 2014; Yin, 2014; Linda & Marie, 2016) agreed that social units or systems include concepts or institutions. Consequently, addressing the objectives outlined in section 5.1 requires detail scrutiny and an exploration of fifteen universities across the UK, henceforth, a qualitative CS research. The key fact associated with CS is to consider its alignment with my constructivist ontology and interpretivism epistemology (section 5.2) by emphasising multiple realities. Equally, this allows for the selection of multiple participants (section 5.4) and the application of different methods for data collection (section 5.5). Then, this solicits for triangulation (section 5.6) to add rigor to the study (Linda & Marie, 2016). All these are sectionally covered in depth.

A CS is an "empirical inquiry that provides in-depth examination into a contemporary phenomenon within its real-life context", especially when there is a lack of clarity between the phenomenon and its context (Yin, 2014, p. 16). Eisenhardt (2002) describes CS as the

141

focuses on providing in-depth insight into the dynamism of specific settings. It can be single or multiple cases (Yin, 2014) with several levels of analysis (e.g. industry and organisation) as well as combining multiple methods including interviewing. Therefore, qualitative CS is suitable due to the exploratory nature of my research. The strengths and limitations of various CS debates are summarised in Appendix 1.

Although this study does not consider numerous levels of analysis, rather its level of analysis is the university which suggests a focus on the clarification of the shaping determinants and defining characteristics of being entrepreneurial as the units of analysis (see Figure 9). However, these comments are appropriate for this research as it involves the examination of the single sector which is the higher education settings with multiple cases; that is, the case of fifteen universities with differentiated characteristics through series of data collection methods such as documentation, participants diagram, and semi-structured interviews. Tellis (1997) adds that CS enables comprehensive perspective to be derived from respondents by collecting information using various means. Therefore, the application of multiple sources is again to maintain the principle of triangulation in this thesis as a CS research thereby enhancing the rigour and robustness of the research.

According to Dul & Hak (2007), the validity of CS research may be strengthened by triangulating across different means of collecting data. However, Cunningham et al. (2016, p. 6) argued that "a significant advantage associated with CS methods is the greater flexibility it offers to academic scientists in their approach while investigating complex situations and contexts".

Therefore, the utilisation of an exploratory qualitative case-based approach in this thesis was underpinned by the research problem, prior research conducted in the field, and practical considerations of the research context (UK). The research problem is exploratory in nature and is contextually bound. As mentioned in Chapter One, the study is one of the first of its kind to investigate the main determinant factors affecting the development of the self-defined entrepreneurial university in the UK context. Whereas, the majority of previous studies have greatly emphasised the activities aspect of the entrepreneurial university (Jones et al., 2010; Matlay, 2005; Pittaway & Cope, 2007).

142

Thus, an exploratory qualitative CS research is suitable to explore context based phenomenon in comparison to quantitative research (Bryman & Bell, 2015; Creswell, 2009, 2014). Yin (2014, p. 10) describes an exploratory CS as the idea of focusing on a single case or a specific number of cases with the interest to "understand and provide a satisfactory representation" of the phenomenon investigated. Further to this, the entrepreneurial university phenomenon is to be understood by exploring the perspectives of the key informants working within the university settings; people who experience entrepreneurial activities in their everyday work lives. This substantially dictates the need to utilise an exploratory qualitative CS strategy (Bryman & Bell, 2015).

Consequently, the decision to use an exploratory CS as the appropriate research approach was prompted because entrepreneurial university as a higher education topic is a complex and context-dependent phenomenon (Bronstein & Reihlen, 2014; Gjerding, 2005). In this study, the complexity is in terms of the UK universities' diversity regarding sizes, missions and types and context-dependent because each university is unique in their various locations or settings.

Therefore, both the entrepreneurial university phenomena and the UK context are integral aspects of this research that fundamentally require the application of CS methodology. More importantly, in its suitability is the fact that CS is a methodological approach appropriate to investigate a contemporary phenomenon, provide responses to the how and why questions and can be used in different ways to gain insights into sociology issues (Yin, 2014). In entrepreneurship research, CS design has been used (see, for example, Langridge, 2006; Logie, 2015) as an appropriate methodology to providing insights into complex and under-explored subjects (Yin, 1984).

As previously mentioned, the research employs a qualitative CS design. This design offers useful instruments for the researcher to investigate the complex entrepreneurial university phenomenon within its context which then becomes a valuable approach for the researcher to develop a theory (Baxter & Jack, 2008). The notion of theory development correlates well with this research in terms of proposing a best practice framework that could advance policy and practice of entrepreneurship in the HEIs. This led to the identification of

143

a problem (gap) concerning the controversies on the entrepreneurial university (Kirby et al., 2011) as well as the lack of clarity between the main factors shaping the development of the entrepreneurial university and the characteristics profiling a university as being entrepreneurial.

Therefore, the need to advance and extend the current understanding of entrepreneurial university phenomenon requires an in-depth and detail inquiry which can be provided by qualitative research (Flick, 2014). Thus, the qualitative approach is also consistent with the CS design adopted in this thesis (Al-Tabbaa, 2013) to provide detail description and in-depth understanding of the entrepreneurial university concept as a social phenomenon (Yin, 2014).

As the CS design is adopted as a methodology, it is important to show how this research is bind. This is essential to establish a focus on the research scope (the UK self-defined entrepreneurial universities). Therefore, Figure 9 is introduced binding this research within a context (UK higher education) with definition (self-defined) and linking the units of analysis with the levels of analysis thereby creating a boundary of the scope of the study.

166 HEIs in the UK Context

119 Universities

28 Self-Defined Entrepreneurial Universities
Determinants & Characteristics

Units of Analysis

Level of Analysis:

U1	Shaping factors & defining characteristics
U2	Shaping factors & defining characteristics
U3	Shaping factors & defining characteristics
U4	Shaping factors & defining characteristics
U5	Shaping factors & defining characteristics
U6	Shaping factors & defining characteristics
U7	Shaping factors & defining characteristics
U8	Shaping factors & defining characteristics

Dynamism in the business external environment

Dynamism in the business external environment

Figure 9: An overview of the research focus

Source: Author's own

145

While the researcher acknowledges that entrepreneurial university is a contemporary and topical subject, it is important to establish a boundary (as shown in Figure 9). There are 166 HEIs in the UK, out of which 119 are universities and between 2008 and 2016, 28 universities were shortlisted as entrepreneurial, out of which eight were identified as winners of the UK annual Times Higher Education Entrepreneurial University of the Year Award led by National Centre for Entrepreneurship in Education. So, my thesis modifies the European framework by exploring how these UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'.

Having discussed the contemporary debates and drawbacks associated with CS research design, it is important to come up with a CS definition for this study. This is crucial to integrate the reasons for investigating a certain set of cases, the rationale for UK universities real-life context, and directions for the research scope with my philosophical position. Therefore, the next subsection highlights a CS definition that underpins the 'why and how questions' in this research.

5.3.1 Adopted definition of the CS design in this thesis

"CS narrations offer uniqueness about similarities and differences. […] allowing researchers to provide informative examples of adaptable universities from a different culture in different societies because undoubtedly, adaptive multifaceted institutions, working in differentiated and multicultural places establish different complicated responses" (Clark, 2015, p. 2). Clark's CS definition is the most recent and most relevant to describe the methodology adopted and bind the scope of this thesis as illustrated in Figure 9 above (see section 5.3).

This implies four conditions regarding the application of CS as a research strategy namely: (i) the need to provide answers to the why and how questions set out in Chapter

One; (ii) the need to clarify boundary regarding entrepreneurial university within the UK context; (iii) the need to explore contextual conditions based on the assumption that they are important aspects of an entrepreneurial university; and (iv) where participants' behaviour cannot be controlled.

These conditions become relevant to this research in the following ways: the first three are embedded in my research questions- What are the determinants of the self-defined entrepreneurial university? What do UK universities consider entrepreneurial in their own context and why? How do UK self-defined entrepreneurial universities differ in their approaches? Then the fourth condition is the need to explore participants' experiences and clarify the components of the entrepreneurial university rather than count number or test the construct. Baxter & Jack (2008, p. 546) note that one drawback of the case study is the tendency for the researchers trying to "address one question with far broad perspectives or a topic with many objectives in one research". This is one of the issues that contributed to the delay of my fieldwork because the concept of the entrepreneurial university is broad; not only is that Entrepreneurial University is an international phenomenon but a multi-perspective one. So, I had to condense and focus on one aspect of the entrepreneurial university- its components.

This requires a consistent reflection and by following Creswell's (2003; 2007) recommendation that one of the ways to conduct a well-constructed professional interview is to design effective research questions. So, I obtained the feedback on my interview schedule from my internal assessors, supervisors and the ethics committee. This took me five months (April-August 2015) to produce a comprehensive and fit for purpose questions for my research. Eventually, the preparation of the interviewing guide was to maintain focus. Somewhat, this is time-consuming by taking several steps back to revise and re-revise my research instrument (interview guide). But it is worth doing because at the end the right questions give me the right answers with rich data. In turn, this helps to fulfil my

147

research objectives. Besides, if the wrong questions were asked initially no participant would grant me consent twice in these days where time is precious for everyone. More detail about the interview protocol is provided in sub-subsection 5.5.3.1. In an exceptional circumstance where I had communicated to the respondents that I would be conducting follow-up interviews based on the emergent themes.

To overcome the challenge of a topic with broad perspectives, some scholars have taken a step further to suggest some mechanisms. For example, Stake (1995) suggests that the researcher should consider the time and activity; definition and context (Miles & Huberman, 1994); and place and time (Creswell, 2003) as ways of binding the case in order to be more reasonable in scope (Baxter & Jack, 2008). Following these suggestions, it becomes reasonable for this study to apply certain binding criteria as has outlined within the scope of this study in Chapter One, which includes: self-defined entrepreneurial universities between 2008 and 2015 located in the UK. Thus, these techniques were used to select the fifteen universities. Baxter & Jack (2008, p. 547) equate the setting of boundaries in CS research with the setting of "inclusive and exclusive principles" for sampling in statistical research. Other issues that arise while concentrating on my chosen aspect of the entrepreneurial university include Insiderness and power differential pitfalls. These are key issues that need greater attention for ethical purposes. The detail on this is provided in the ethics section 5.7. The next section explains the procedures followed for cases selection.

5.3.2 Selection of cases

According to Marshall et al. (2013), the classification of CS is one of the complexities associated with non-statistical research. Eisenhardt (1989), Yin (1989) and Stake (1995) apply different concepts to describe a series of cases. Eisenhardt (1989) and Yin (2014) classify case studies as single or multiple but Yin (2003) also distinguishes between explanatory, exploratory and descriptive case studies. Stake (1995) classifies CS into

instrumental, intrinsic and collective. Likewise, Creswell (1998) uses the terms intrinsic and instrumental. It is worth noting that the majority of instrumental case studies are more likely applicable to clinical and/or health research and descriptive case studies are more historical in nature. Also, single and multiple are two different sampling concepts in CS. Therefore, the main point here is that multiple exploratory CS design is appropriately considered in this thesis.

To determine the type of CS to undertake and its appropriateness, three things need to be considered. These include the research purpose (Meyer, 2001), the numbers of the case (s) involved, and the context of the study (Baxter & Jack, 2008). In this thesis, it involves multiple exploratory CS (15) because it seeks to explore an examination of different groups of universities (teaching, research-intensive, and technology-based) in the higher education sector within the UK context. As the cases are split between old pre-1992 and modern post-1992 universities, it became more interesting as another significant contribution emerged in terms of understanding the differences and similarities in these different universities status thereby providing answers to RQ3. This is of significance because unlike their pre-1992 counterparts, the post-1992 do not have extensive research funding capacity (Clarke, 2015), yet they are entrepreneurial in their own ways.

Therefore, it is important to undertake CS where "different elements" of UK HE context are scrutinised for advancing knowledge (Dana & Dana, 2005, p. 79). It is within these terms of definitions that the fifteen cases applied in this study are considered best options. These universities are diverse in their types, sizes, missions and even location. In Appendix 1, different CS types are presented at a glance including some literature and their limitations.

149

5.3.2.1 Location

Taking into consideration, Miles & Huberman (1994), Stake (1995), and Creswell (2003) suggestions that definition and context; time and activity; time and location are reasonable methods to bind the scope of a subject with broad perspectives, this study is bounded by self-defined entrepreneurial universities between 2008 and 2015 and are located across the UK. As noted earlier, the scope of this study is restricted to UK HEIs because it is the second utmost popular country across the globe for recruiting international students and second in the world for university-business collaboration after the U.S. (International Unit, 2013). Given that internationalisation take a centre stage among topical issues surrounding HEIs, British universities continuously compete and are well-known for their outstanding education and research and UK was ranked 8th overall out of 50 countries (Universitas 21, 2015). Both internationalisation and active engagement with the external environment are critical aspects of entrepreneurialism for any university willing to become more entrepreneurial-oriented. Hence, empirical findings reveal that some universities seek to enhance the university-industry relationship as another method to generate income and learn from the industry (Gheorghe, 2014).

According to Office for National Statistics (ONS, 2016), at mid-2015, the UK has a total population of over 65 million and composed of the following home countries: England (54,786,300 or 84%), Scotland (5,373,000 or 8%), Wales (3,099,100 or 5%) and Northern Ireland (1,851,600 or 3%). According to Universities UK and British Council, higher education constitutes universities, university colleges, specialist HEIs, and other HE colleges (British Council, 2015; UUK 2012). By filtering the 183 institutions listed on the SCONUL access website, there are 166 HEIs in the UK (SCONUL, 2015), which are split around England (132), Scotland (19), Wales (11) and Northern Ireland (4) as documented in Table 9a of the longitudinal survey of Destination of Leavers of Higher Education (DLHE, 2008/09) and REF 2014 result. Though the 2009 DLHE is an outdated Table but the decision to use it

150

was underpinned by its accuracy regarding the current figure of UK HEIs (166) which was validated by recent publications (BUFDG, 2015; Jarboe, 2013).

In the Guardian League Tables (2016), 119 of these institutions are universities. This marked an increase from just 109 designated universities in 2008, an indication of significant development in the sector following world crises (Logie, 2015). Currently, two of these universities are private- the Buckingham University and the London-based Business People and Professional University College (BBP University). Thus, while all UK universities primarily research and teach, they are divergent in their focus.

The selected universities are located between eight regions (Appendix 14). Exploring the working context of universities from different regional contexts is of significance because previous studies (e.g. Uyarra, 2010) have argued that there is a paucity of literature that takes into consideration the diverse strands of universities. According to Foss & Gibson (2015), there is a limited practical study that collects and compare the formal diversity of universities in different regional and national contexts. As a result, regions in two UK countries: England and Scotland are empirically examined to ensure "wide applicability by incorporating multiple countries" as noted by Bruton et al., (2010, p. 432).

As a multicultural and diversified context, UK regions do not have equal opportunities to resources because there is a gap in regional innovation systems that could have led to fair saturation of entrepreneurial ecosystem. According to OECD (2008, pp. 16–17), six English regions (three in the North of England and three in Greater South East) are below national average of regional gross value added (GVA) taking into consideration different range of indicators such as "educational attainment and skills, employment rates, industrial composition and out-migration of young people and graduates". Thus, using these metrics to explain the trend of regional growth indicates lower and highest value added per workforce job in the UK context.

151

Furthermore, and as statistically documented by ONS (2014), in 2013 the differential points of GVA per head was greater in London at the figure of £121,157 and lower in North East with a difference of £7,033. These figures suggest that UK regions can be classified as top and bottom regions based on their lower and greater GVA per head. The term GVA per head is used to "compare regions of different sizes" (ONS, 2014b, p. 16) as shown in Table 6. Another most recent, viable and relevant regional comparison measure is the Barclays Bank's (2016) report on UK entrepreneurship which drew on several datasets to report entrepreneurial activities including start-ups and high growth businesses, with the following findings:

"Wales and South-East England are outpacing the remaining parts of the country in terms of high growth. In Wales, 23.4 percent of the organisations with annual income between £2.5 million and £100 million are designated as high growth, the second highest figure after South West England, at 23.5 percent. The West Midlands and North East are the weakest performers with 18.7 percent and 19.2 percent high-growth companies respectively. A significant number of the deals completed in the last 12 months took place in London and South East. London was responsible for 407 of the 1541 deals completed, while 256 took place in the South East. The next most active regions include the East of England with 142, and North West with 138" (Barclays Bank & BDF, 2016, p. 11).

According to Sporn (2001, p. 123), "a changing environmental condition involves changes in economic conditions, demographics…" Thus, it is of significance to understand the regional economic characteristics of the UK context because entrepreneurial university phenomenon evolves as a response to promote economic development by raising employability. Based on this, and as has been discussed in Chapter Two, a variety of universities with differentiated institutional status were selected as case studies. In addition, using per head measure is a viable source because of its consistency in financial and employment figures (Scottish Government, 2011).

Table 6: An income approach comparison of UK regions based on regional GVA

NUTS region	GVA per head (£)	GVA per head growth on 2012 (%)	GVA per head index (UK=100)	Total GVA (£m)	Total GVA growth on 2012 (%)	The share of UK total GVA (%)
United Kingdom	23,394	2.6	100	1,525,304	3.3	100
North East	17,381	2.8	74.3	45,374	3.1	3
North West	19,937	3.4	85.2	141,620	3.6	9.3
Yorkshire and Humber	19,053	2.4	81.4	101,701	2.8	6.7
East Midlands	19,317	2	82.6	88,835	2.7	5.8
West Midlands	19,428	2.8	83	110,246	3.4	7.2
East of England	21,897	2.4	93.6	130,378	3.2	8.6
London	40,215	2.6	171.9	338,475	4	22.2
South East	25,843	2	110.5	227,232	2.8	14.9
South West	21,163	2.5	90.5	113,806	3.2	7.5
England	24,091	2.6	103	1,297,667	3.3	85.2
Wales	16,893	3.4	72.2	52,070	3.7	3.4
Scotland	21,982	2.6	94	117,116	2.9	7.7
Northern Ireland	17,948	0.9	76.7	32,841	1.2	2.2

Source: ONS (2014, pp.2-3).

Accordingly, the lower value added per workforce region is characterised by lower employment rates, lower productivity sectors, lower educational attainment and skills and vice-versa. As such, universities in low privileged regions are tagged as high public-low private and those in highly-privileged regions are tagged as low public-high private as shown in Table 7 (subsequent table). Contrary to the expectation that universities in highly-

153

privileged regions willfully embraced the entrepreneurial paradigm given their advantage of location and highest HEIF funding, universities in low privileged regions are more inclined to take the entrepreneurial turn. For example, most of the universities (U9, U10, U11, and U12) located in low privileged regions are found to be more resilient in embracing entrepreneurialism than those universities (U1, U2, U3, U8, and U15) in highly-privileged regions.

In this vein, the universities located in a low privileged area otherwise identify with high public-low private are characterised as being in small and less populated areas and have a geographical concentration of different firms with less demand for localised knowledge from research institutions like the universities because there are different market inputs. As such, universities in that region will do more to sell the enterprise related message to students and staff within and outside the institution. Whereas, universities in highly-privileged or associated with the low public-high private region are characterised as being in a large and densely populated area and have a geographical concentration of similar firms with high demand for localised knowledge from research organisations like the universities because there are specialised market inputs (such as bio and hi-tech) conducive to innovation. As such, universities in this region are attracting more external investments particularly through larger organisations that have money and time for innovation to take effect.

Importantly, the classification of the region in this manner is consistent with the HEIF allocations in terms of the measure used to allocate funds to universities based on external income earnings of £250,000 or more in knowledge exchange activities. Therefore, this suggests that universities that receive the highest allocations cap of £2,850,000 attracted more private than those that receive less than £2,850,000 as shown in Appendix 17. These UK regional classifications herein could partially explain why the selected

154

universities follow different pathways and adopt different approaches to fulfilling their entrepreneurial objectives.

This recent discovery contradicts the previous study that state that research on academic entrepreneurship has focused on most outstanding "research universities by being atypical" in their respective countries and across the globe (Wright et al., 2012, p. 429). As such, I advocate that institutional studies and entrepreneurship research need to investigate a different range of universities (as shown in Table 7 herein) in terms of both sizes and educational focus as has been conducted in this thesis. While various case studies including those published in books (Clark, 1998, 2004; European Commission, 2015; Fayolle et al., 2015) had featured those universities they considered as 'outstanding', there is still limited research that have specifically examined those factors shaping and those characteristics underlying the entrepreneurial paradigm of UK self-defined entrepreneurial universities.

Thus, this suggests that the UK context is a suitable research setting and British universities could provide substantial examples of entrepreneurial university practices. This selection includes universities that have widely embraced and fully integrated the entrepreneurial paradigm at various levels as well as those that are currently institutionalising entrepreneurial paradigm. Accordingly, the cases herein provide considerable diversity to observe the similarities and differences in the characteristics such as funding allocations, location in terms of small or large and established or developing areas, educational orientations, pre-1992 and post-1992 or old and newly established universities (Fayolle & Redford, 2014; Fetters et al., 2010; Foss & Gibson, 2015; Kuratko & Hoskinson, 2014). Importantly, this provides an additional justification for the applicability of the resources and capabilities components of the RBV with the strategic renewal component of the CE theories to diverse universities and contexts is appropriately suitable.

155

Table 7: University differentiated status by regional classifications

Classifications of regional environment		Pre-1992	Post-1992
Low-privileged area	North West England	U7: mid-sized, research-intensive and UA Group	U6: large-size, teaching, and Million+ Group University
High public-low private university	Yorkshire & Humberside	U9: large-sized, teaching and Russell Group University	U10: mid-sized, teaching and UA Group University
	West Midlands		U11: large-sized, teaching and UA Group University
	East Midlands	U12: large-sized, research-intensive and Russell Group University	
High privileged area	South East England	U1: small-sized, research-intensive and formerly 1994 Group University	U2: mid-sized, teaching and UA Group University.
Low public-high private university		U3: mid-sized, research-intensive and Russell Group University	
	East of England		U4: mid-sized, teaching and UA Group University

Classifications of regional environment	Pre-1992	Post-1992
		U5: mid-sized, teaching and Million+ Group University
Greater London	U8: mid-sized, research-intensive and Russell Group university	
South West England		U13: large-sized, teaching and UA Group University
Glasgow	U14: mid-sized, international technological and European Consortium Innovative University	
Edinburgh	U15: large-sized, research-intensive and Russell Group University	

Sources: Author's own

157

Now, in the next section, the sampling strategies relating to how research participants and universities are selected are vividly discussed.

5.4 Sampling techniques

Although the selection of cases must be fulfilled, the majority of scholars including Yin (1993) warned that CS should not be seen as a sampling investigation. This implies that case studies are typically chosen to focus on single or multiple problems embedded in the phenomenon to be researched (Tellis, 1997). In this research, it knows what the entrepreneurial university constitutes within the UK. Therefore, this section discusses sampling size controversial issues, selection of cases and sampling of key informants.

5.4.1 Deciding sample size

According to Glaser & Strauss (1967), qualitative researchers remain loyal to non-statistical principles where the size of the sample is in line with the 'saturation' concept. For Dey (1999) saturation is not the appropriate concept so he recommends that categories should be closed as soon as data are partially coded (see also Strauss & Corbin, 1990, 1998). In an attempts to offer guidance on sample sizes in qualitative research, Charmaz (2006) holds that the purpose of undertaking any research has an utmost influence on how the study is designed and therefore determines the size of the sample. Further to this, Charmaz points out that research with little justifications could quickly reach saturation compared to those aimed at describing how things happen.

Taking similar position with Charmaz, some writers such as Mason (2010) in his analysis of Ph.D. studies that utilise the qualitative approaches and interviews as their methods, concluded that size of the sample is less relevant since the trustworthiness of the findings depends on how valuable it is, and this could be achieved through the relationship developed by the investigator and the research participants. The author suggests that

158

rather than be overwhelmed by the issue of sample size, researchers should be more orientated towards their subjects. Also, Baker & Edwards (2012) assert that the response to their review title "how many is it depends on". The authors go further adding that in distilling the interpretation of "what it depends upon", the responses indicate epistemological, methodological, and practical perspectives including aims and objectives, time and resources. Accordingly, their findings express that the quota of expert voices concluded at 14 (p.4).

While the concept of saturation remains controversial, some social scientists give numerical guidance based on the research design. For the grounded theory approach, 30-50 (Morse, 1994) and 20-30 interviews (Creswell, 1998). For interpretive phenomenology, a minimum of six (Morse, 1994) and 5-25 (Creswell, 1998). For ethnography and ethnoscience research, 30-50 respectively (Morse, 1994) and 30-60 for ethnoscience only (Bernard, 2000). For general case studies, three to five sources of evidence per case (Creswell, 2007) and one to 95 (Mason, 2010). In general qualitative study, Bertaux (1981) suggests a minimum of 15.

Based on specific student status and qualification, some experts suggest between 12 and 60, and 30 being the mean for graduate students (Baker & Edwards, 2012).

Other researchers such as Thomson (2011) in the assessment of 100 research articles that applied grounded theory and interview found average sample sizes ranging as 25. Thomson suggests that researchers should organise 30 to comprehensively generate thoughtful ideas about a specified topic. In a case-based research, Boojihawon & Acholonu (2013) investigated the internationalisation behaviour and pathways of four banks (three in Nigeria and one in Kenya) to understand how they have leveraged their ability to internationalise their businesses and conducted four interviews, meaning one respondent per case bank. Given that their research involves more than one case based on four different banks in two different countries, yet empirically developed conceptual framework on four semi-structured non-directive interviews only is a supporting evidence that any number of interviews undertaken in the current research is a substantial claim for adequacy.

159

Given the inconsistency about the exact number of sources of evidence and since there is no empirical validation for the use of a specific number of sample size in qualitative studies, the 32 interviews conducted in this study is, therefore, neither small nor large sample size. Rather, it is appropriately fit for this study and is determined by the research purpose 'to modify the European framework' and premised on my constructivist paradigm, which ultimately advances the 'understanding of the entrepreneurial university' issue in more detail.

5.4.2 Sampling of key informants

The entrepreneurial university as an organisational phenomenon is typically characterised as multilevel in nature. In what follows, I argue that this multilevel comes in various forms; employees and activities. On the side of the employees, entrepreneurial university involves staffs who are encrypted in roles and activities across various levels in the institution. On the side of activities, entrepreneurial activities are themselves multilevel; involve multilevel relationships and as such integrate multiple people nested within the university. On this basis, this study considered identifying multiple participants across various levels (strategic, academic and support staff) in the organisational hierarchy of the university. This is important because nested data typically involves multilevel data collection leading to a feasible conclusion.

The assumption underpinning the qualitative approach of this research is that unlike objects social actors are unpredictable therefore non-probability sampling is considered the best approach. Non-probability sampling is not based on the selection of a randomly selected sample but rather uses idiosyncratic techniques to determine inclusion criteria for sampling (Battaglia, 2011). This sampling technique is appropriate as the investigator seeks to advance the knowledge of the entrepreneurial university phenomenon. It is also the best technique to gain initial insight into 'exploratory research' of this kind. Besides, there is the need to provide answers to the 'why' in number two of my research question. Appendix 2

summarises the advantages and disadvantages associated with the various sampling techniques highlighting my position.

The various types of nonprobability sample include: convenience by finding someone easy to locate, snowballing by meeting relevant people to the research in order to refer others, purposive by choosing people based on research purpose including investigator's knowledge of the population, quota by setting a target size or number of interviews with specific subgroup of the population of interest (Battaglia, 2011; Tansey, 2007), theoretical (Oppong, 2013) and criterion (see Appendix 2). Rather than relying on one sampling technique, and for consistency with my constructivist and axiological perspectives which are embodied in multiple realities and values respectively, this study is considering the multiple sampling techniques (herein refers to as a collective approach) involving mainly criterion and expert sampling. This research adopts the *criterion sampling* by applying the inclusive criteria of identifying and selecting respondents who have responsibilities for enterprise-related activities with either strategic, academic or support staff hat. That is, I deliberately target research participants with enterprise or entrepreneurship responsibilities; however, such specialism may not necessarily be explicit in the job title of some people (e.g. Deans). But it is a criterion that they have 'responsibility for' enterprise or entrepreneurship. Secondly, like other entrepreneurial university scholars (e.g. Salamzadeh et al., 2015), this thesis applies a basic criterion of at least 18 months to two years of enterprise and/or academic experience and expertise working in the higher education context. Consequently, this led to the selection of different hierarchical levels of research participants. In turn, my collective sampling approach aligns well with my use of different data collection methods including my integrative analytical lens in Chapter Four.

With regards to judgmental/*expert/purposeful sample*, which places emphasis on the investigator's personal assessment, it selects those who have the capabilities to account for their universities in terms of the self-defined reputation. Second, it considers lecturer in Entrepreneurship or related subjects. Third, it considers the Deans of Business Schools because the majority of entrepreneurship and enterprise activities occur within this School (Joshi, 2015; Meyer, 2015). Besides, in a direct or indirect way, Deans are involved in the

161

school-based system of their universities. In addition, recent research observed the role and demographic characteristics of academics Deans as entrepreneurial leaders in New York independent colleges and universities, the analysis revealed that academic deans are a team builder and proactive (Cleverley-Thompson, 2015). Also, the majority of those interviewed in this study have their role within the Business School if not in designated Centres or Careers Services. So, as a useful way to triangulate what was obtained, the Deans were included as interviewees.

Further to this, a recent empirical study expressed that the outcome of entrepreneurship education is higher for business students than in other groups like engineering (Murugesan & jayavelu, 2015). This suggests that the selection of participants within Management or Business Schools is justifiable based on the extent that they are driving entrepreneurial activities. This similar approach has been applied by some entrepreneurial analysts (e.g. Farsi et al., 2012). This sampling method allows the researcher to be open in terms of categorising participants according to specified reasons based on the research problem (Oppong, 2013).

In addition to criterion and expert sampling, the use of *quota sampling* was anticipated in this study. This means that the respondents were selected on the equivalent basis meaning that at least one respondent at different levels (strategic, academic and support) for each university. However, some universities allowed interview discussion to be held with one person only due to the consciousness of their trading secrets (Appendix 12). The three reasons for the different levels of participants' selection include: first, to allow the researcher to triangulate between data obtained from different participants. Second, to minimise the potential limitation of top teams only as highlighted in the preceding chapter and third to minimise the potential risk associated with the respondents consciously aware that their universities may be easily identified. However, where there is a similarity in roles within some universities, only one participant was interviewed to avoid repetition and save participants' time.

Further, key informants were identified through the staff profile on the official websites of the selected universities and were contacted via email. According to (Ross,

2014), recruiting research participants through email is effective but with more skills in recruiting all the high-quality participants required for the study. Following Ross' (2014) best practices recommendations, the following were put into consideration: detail of possible respondents (contact details inclusive) applying the above criteria; a recruitment log coded as date invited, name, position, email, telephone, response, and arrangement to track and keep record of who has been recruited; preparation of different email messages in a word documents in order of sequence including introductory, follow-up (1st and 2nd attempt), response, email meeting invitation and draft transcript messages were created. From a personal point of view, the key skills required for using email as a recruitment technique is organisational skills and attention to detail. This is important because where a respondent asks a certain question, the researcher must be careful in providing the exact answer such respondent is looking for. It was also observed in the study that the invitation message must not only be precise but also sell the need to take part.

The benefits of utilising multiple sampling techniques are to prevent limitation to the quality of the research, reduce sampling bias due to under or overrepresentation of some segment of the population in terms of characteristics relevant to the research questions and allow the investigator to change by being flexible in the research approach. On the other side, it is time-consuming

An interesting observation is that some research method scholars such as Battagli (2011) identify three non-probability sampling types (Allocation, Expert/Purposeful and Convenience), other scholars such as Tansey identifies four types (Quota, Purposive, Convenience, and Snowballing). As a magnitude contribution to offer simplicity to aid understanding of this sampling technique, the current research identifies two categories: unsystematic and systematic recruitment and/or approach (see Appendix 2). The unsystematic recruitment is conducted without any predefined respondents which include the convenience and snowball sampling. These strategies are relatively adopted by ethnographers, grounded theorists, and phenomenologists (Knox & Burkard, 2009). The systematic is predetermined with some structure and this includes purposive, and criterion

163

sampling which mostly guides case study research. However, integrating both systematic and unsystematic is not inappropriate.

5.4.2.1 Summary of study participants and their organisations

As has been discussed, participants were selected from a cross-section of staff to offer multiple views from their different roles in different organisational units or centres within their respective universities. Particularly, attention was given to those people and faculties with direct involvement in entrepreneurial activities (see Appendix 8). In total, 32 participants were involved in the in-depth interview discussions with their roles alphabetically provided in Table 9 (section 5.5.3). Considerable care has been taken to guarantee that the views and thoughts of the participants were not directly ascribed to them to avoid their role being easily identified. As such, and to maintain confidentiality of participants, Table 8 presents participants' information on their total years of working with the institution, duration they have been in their present roles without displaying these against their actual role titles (section 5.5.3 Table 9 for different role titles), their length of practice working within the HE sectors and length of practice they have spent in another sector and/or academic-industry interface.

Table 8: Participants' attributes arranged according to years with the institution

University	Participant	Total years of working with the institution	Duration of being in the present role	The total length of practice in HE sectors	The total length of practice in academic-industry interface sector	Gender
U1	P21	10	10	10	20	M
U2	P17	21	3	21	24	M
	P19	7	4	7	15	F
	P24	6	3	6	15	M
	P25	10	10	10	1	F
U3	P18	18	18	22	Unknown	M
U4	P1	15	10	15	28	M
	P5	24	5	24	9	M
U5	P2	26	5	29	29	M
	P10	3	2	21	5	M
	P11	20	11	27	12	F
U6	P22	10	10	16	4	F
U7	P23	10	2	10	20	M
U8	P32	Unknown	Unknown	Unknown	Unknown	M
U9	P12	15	9	15	9	M
	P13	13	5	13	10	M
	P14	2	6	6	16	M
U10	P3	6	6	6	25	F
	P4	3	2	6	5	F
	P6	24	7	35	1	M

University	Participant	Total years of working with the institution	Duration of being in the present role	The total length of practice in HE sectors	The total length of practice in academic-industry interface sector	Gender
U11	P7	9	6	9	2	M
	P8	9	9	9	9	M
	P9	2	2	2	20	M
U12	P15	36	5	42	1	M
	P16	Unknown	Unknown	Unknown	Unknown	M
U13	P29	20	10	20	1	M
	P30	3	2	3	17	M
	P31	6	2	7	8	F
U14	P20	6	4	6	6	M
	P26	24	10	24	8	M
	P27	24	8	24	4	F
U15	P28	8	2	13	3	M
Total		390	189	458	327	
Average		12.19	5.9	14.31	10.22	
Mean		12	6	14	10	
Medium		7.5	5.5	9.5	13	
Mode		6	2	6	1	
Range		34	16	40	28	

Legend: Mean is average by adding up the total and divide by the number, Medium is the middle value in the list e.g. 13+2 = 15 divided by 2 is 7.5, Mode is the value that appears the most and Range is the difference between the biggest and the smallest number e.g. 36-2 is 34.

Although in the information provided in Table 8, participants detail cannot be aligned directly with their roles to maintain confidentiality issue, but it indicates a varied range of years (34) of working with the institution and a lesser range of years (16) for the duration they have been in their recent roles which reflect changes in their roles, responsibilities or structure within their universities. Regarding the range of experience, participants have extensive experience working within HEIs (40 years) as well as a considerable experience (28) working between the interface of university and industry.

Furthermore, indicative numbers were provided to show the breadth of participants' experience using the mean. Whilst the average years of working with the institution is 12, the average duration of years in the recent job is six; this is an indicative value that participants were drawn from a variety of experiences within their respective institutions which have provided comprehensive perspectives on the topic researched. The breadth of experiences of participants in HEIs and other sector is also illustrated with mean. The mean length of service in the HE sector is (14) years and that for the university-industry interface as well as other sectors participants had worked was (10) years.

Given the nature of the universities studied in terms of applying business terms within university context and understanding the current business working environment, it is worth noting that variety in the participants' experience is important attributes in the research process of this study. As such, it was assumed that those selected for interviews will possess a wide range of expertise based on how long they have been involved in enterprise-related activities through their recent posts and in their previous place of work other than HE sectors. Given this diversity, the experience characteristic was explicitly considered during the selection of participants in terms of having at least 18 months' experience as highlighted in Appendix 8.

167

Meanwhile, other demographic factors such as gender, age, and nationality were excluded as selection criteria for participants in this study. As such, data associated with these attributes were not vividly captured as they were considered less relevant in this study. However, an important observation that surfaced was that whilst there were more male (24) than female (eight) who took part in the study, the female put more emphasis on the need for and importance of networking in entrepreneurial activity which may help them to enhance their collaborations than their male counterparts who have already established external working relationships based on their agentic roles. Then looking deeply into the data, it was noticed that men are more inclined to outward-facing activities and women are more inclined to intra-facing activities.

Consequently, the researcher acknowledges that data on gender characteristics could have been undertaken to provide an additional analysis with the potential to open new or different insights to the findings in this study. Therefore, it may be noted that academic scientists may attempt to explore how gender factors can affect entrepreneurial activity in HE settings or investigate gender-performance relationship for entrepreneurial staff in universities. Now, the protocol followed for deciding on the cases in this research is provided in the next subsection.

5.4.3 Sampling of selected cases

Some qualitative methodologists provide guidelines for sample size in CS research. For example, while Creswell (2007) suggests no more than four or five cases, Yin (2009) recommends a minimum of six. Though these are useful general guidelines, yet there is a lack of consistency on the number of cases. Following series of recommendations noted above, fifteen universities were chosen based on the research focus- to extend the European framework and scope- by exploring how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'. Further, selected cases must: (i) reside in the UK; (ii) acquired a national reputation for self-promotion of Entrepreneurial University between 2008 and 2015; and (iii) explicitly

168

embedded enterprise-related strategy and demonstrate elements of entrepreneurial practice.

Specifically, for the research purpose stated above, cases have been bind using location and time. In terms of location, only universities located in the UK were selected based on their heterogeneity characteristics. For the timing, universities that were self-promoted between the year 2008 and 2015 were considered based on the NCEE Times Higher Education Awards. In a simple term, from 166 HEIs in the UK, twenty-eight universities were presently self-defined and eight out of this were winners of the NCEE Award. By applying the selection criteria (purpose, location and time), all twenty-eight universities fit well within the scope of this research but the ones (15) that granted access were chosen for this study.

Having selected the cases, thorough precaution was considered to avoid direct link of the key informants' roles with their universities when reporting the findings. This is important to maintain confidentiality. Having anticipated and acknowledged these issues, ethical consideration in terms of confidentiality was specifically given to both universities and individual participant. Further discussion on ethics is provided in section 5.7.

However, other universities could have considered themselves as entrepreneurial, but it is not within the research scope to examine all entrepreneurial universities in the UK. As has been previously highlighted in preceding chapters, the diversity and multi-cultural context that universities operate in coupled with the complexity in the UK HE sectors make it tough to scrutinise entrepreneurial universities for the study. There is the issue of complexity in finding a set of universities that self-identified themselves has been entrepreneurial. These diversity and complexity issues include historical context, sizes, mission, educational focus and geographical location as well as how the sector is regulated. For example, these challenges ensued from how to use the location of these universities for selection (see subsection 5.3.2).

For example, using an award as a priori (see Appendix 14), London-based universities (e.g. Imperial College London) were included because of the location's advantage in terms of the highly-privileged area that support them to reaching out to broad

businesses that make use of universities' products and vice-versa. Also, there are challenges in having a mix of shortlisted (winning and non-winning) universities including those that their applications have been considered more than once (e.g. Central Lancashire). This is to understand what such a university is or not doing to deserve the badge as a winning institution.

While these are complex issues, they provide avenues for comparison in terms of incorporating both winning and non-winning universities. This thereby leads to the comparison between high and low entrepreneurial universities in relation to high and little in entrepreneurial activities as well as low-privileged and high-privileged regions (Table 7 herein). This calls for the application of cases to be studied as the research methodology. By comparing universities through the extent of the involvement in entrepreneurial activities, shows substantial differences in the group of 'winners' in terms of the extent to which their activities are coordinated (see Chapters Six and Seven) and this could advance our understanding of the entrepreneurial university. In doing so, it minimises the bias associated with the use of an award as a priori. Besides, since environmental dynamism is core to CE, the concept is applicable to a different range of universities with differentiated power status and policy contexts (see Appendix 14).

Having clarified the sampling techniques in terms of the profile of the universities in relation to how they are positioned within their regional contexts and key informants studied in this thesis, the research methods for collecting data can now be explained in the subsequent section.

5.5 Non-statistical means of collecting qualitative data

The relevance of the qualitative approach is to explore the context and understand the phenomenon of the entrepreneurial university in a lot of detail. Rather than placing emphasis on numbers, this study seeks 'meaning' in terms of understanding the entrepreneurial university phenomenon within the UK context; that is, this is of ultimate priority in this thesis. There is no one proper method for data collection rather consideration is to be given to the data required to address the research questions (Silverman, 2006).

170

Silverman suggests the use of qualitative research methods to investigate the research topic conducted in social complex organisations (Silverman, 2013). Since the theory and method must work together (Blumer, 1956; Denzin, 2009), the integrative analytical lens in Chapter Four equally aligns with the use of multiple data sources. Appropriately, CS supports the use of a range of methods and numerous philosophies to enhance the credibility of the research (Linda & Marie, 2016).

Like the philosophical position outlined in Part 5.2 which placed emphasis on continuous exploration of issues as they evolve thereby deriving comprehensive knowledge, as well as the researcher's active participation gathering information through multiple data forms, are substantially appropriate. Also, conducive to the CS in Part 5.3 is the use of multiple methods. These methods include documentation by synthesising relevant documents (e.g. financial statements and annual reports) of the selected universities, participant-led visual method (PVM) by using the diagram to generates knowledge from the research participants (Hughes, 2012; Waring, 2013), and semi-structured interviews because the research is exploratory. These multiple methods were carefully considered with attention to their strengths and weaknesses. The diagram complements interviews because different people have different interpretations of the same question. Unlike statistical methods, open questions were asked due to the exploratory nature of the research objectives. While the main questions ensued from the contextual (Chapter Two), conceptual (Chapter Three), and theoretical (Chapter Four) literature, follow-up or prompt questions emerged during the interview discussions based on individual participant's responses. These sorts of questions and methods are conducive to my philosophical stance which supports the notion of continuously exploring ideas. The benefit associated with the use of more than one method is to triangulate. One crucial aspect of the unique characteristics of CS is triangulation, which can be realised through the use of multiple sources (Yin, 1984). Triangulation may occur between data, method, theory and/or investigators to increase confidence in the interpretation of findings (DENZIN, 1984). For this reason, Tellis (1997) considers CS to be a triangulated research approach, not a sampling approach. Additional information on triangulation is provided in section 5.6.

171

5.5.1 Method 1: Document analysis

"The expression of reality is conveyed via inking and documenting, which placed it at the margin of consideration in social research" (Prior, 2003, p. 4). Within this perspective, it is easy to claim that all qualitative scientific works are documents. This is because transcribing interviews into hard copy is an act of documentation (Owen, 2013). As articulated by Prior (2003), universities differ from another type of organisations as profiled in their documents rather than buildings. Therefore, starting the data collection process of this research with document analysis on the self-defined entrepreneurial universities in the UK is not an inappropriate approach. Documents reviewed include strategic plans, mission and financial statements, and relevant information on their official websites including other public records.

While this is a substantive claim, there is the tendency that documentation may limit access to some important information (Hsieh, 2009; Tellis, 1997). Drawing on my previous example, compilation desk study on the universities have undertaken as secondary means of gathering information in this research, revealed that while some universities focus on spin-out/spin-offs, others emphasise on start-ups. By exploring and clarifying further the determinants and characteristics of the entrepreneurial university through conducting a case analysis on fifteen universities, data gathered will be triangulated. Hence, document analysis is one of the invaluable schemes of triangulation (DrCath, 2012).

5.5.2 Method 2: Participant-led visual method (PVM)

Following the recommendation of Miles & Huberman (1994) and Miles et al. (2014) that diagram helps in reducing and visualising data, therefore, this research utilises PVM as ways of gathering information. The use of drawing as a mapping technique involves asking the participants to systematically visualise, interpret and explain the facet of their experience on the determinants, allowing them to show the link between the factors. Visual

means allow researcher and participants to collaborate on generating "a cartoon-like representation capable of identifying the structure underlying the organisational setting" (Monk & Howard, 1998, p. 22).

The idea of using PVM as forms of data to explain the interaction between elements is associated with the "soft systems method" - a rich picture qualitative methodology coined on the basis that organisations are in constant inter-dependent flux with their environments (Waren, 2009, p. 574). While the 'systems' constitute the tacit knowledge and human interpretation, the 'soft' in the system-based approach represents the PVM applied to convert these intangibles into analytical patterns (Checkland, 1981).

Hughes (2012) asserts that diagrams can be used to stimulate knowledge from experts. Pink (2004) proposes there is a benefit in the integration of PVM with other non-statistical means to derive knowledge at different levels about the subject investigated. PVMs provide a complementary addition to conventional interview stimuli (Crilly et al., 2006). Taking a similar stance, Umoquit et al. (2008) defend that participant diagrams are valuable complements to gain insights into qualitative research. From the linguistic point of view, Hughes (2012) conceives diagrams as effective techniques in interviews to overcome the cross-cultural communication barriers. According to Buckley & Waring (2013), diagrams are useful catalysts for discussion to generate, explore and record ideas. In so doing, consideration was given to participant diagramming as a creative research method to provoke thoughts, gain access to the mind of the key informants about the determinants interacting to influence entrepreneurial university and develop new insights.

Given the ethnicity of the researcher as an international candidate whose first language is not English, the use of the diagrams also helped her to capture and produce rich data. It is of significance and could be considered as a best practice for the researcher to acknowledge the rationale for taking an approach by examining its suitability to the topic researched. This will help to reduce any associated biases that could endanger the validity and usefulness of the research (Kamenou & Syed, 2012). Kamenou and Syed (2012) emphasised further stating that:

173

"researchers are also seen as social actors placed within certain context at a given period, where their experiences may be informed by series of factors such as ethnicity, gender, class, education and geographical location" (Kamenou & Syed, 2012, p. 87).

Therefore, the rationale for using PVM in this study include how to overcome a personal challenge in terms of the researcher's language barrier as well as to provide thoughtful insight into the different interpretation that participants may give to a question. Despite these advantages in using of PVM in a qualitative study, it is yet to be abated in qualitative data collection methods of business research particularly, in entrepreneurial studies in comparison to its use in action research (Logie, 2015). Another observed shortcoming is that it is time-consuming (see Appendix 3 Example 5) which led some participants to withdraw from producing one despite given them the opportunity to get one done after the interview discussions.

However, the use of diagrams in data collection is seen as a "creative" approach suitable for theory development where the researcher avoids manipulating the participants into the proposed intellectual model (Meyer, 1991, p. 232). During the interview sessions, participants discussed their drawing which has helped in capturing their interpretations in the transcripts. Drawing is an approach that visually and openly engages participants in the knowledge generation of non-statistical study (Vince & Warren, 2012). Participants presented their thoughts and meaning of determinants in various forms using tools such as mind-maps, SmartArt, rich pictures (see Appendix 7) and Allan Gibb's scorecard (Coyle et al., 2013; Gibb, 2014). The approach triangulates well with other qualitative means of gathering information in this study, which offers a concise presentation of participants' experiences (Kearney & Hyle, 2004).

Therefore, using the participant-led visual method (PVM) is an enterprising way of gathering information for this thesis. Thereby, it helps to overcome the methodological issues associated with triangulation, helps to address taken-for-granted areas in qualitative research methods, aids the ability of research participants to get ready for the interview session, and facilitates the relationship between the participants and researchers to collaboratively investigate complex issues. PVM provides added means of improving the

174

quality of this study. Methodology experts (for example Stiles, 1993, p. 602) comment on the trustworthiness issues associated with qualitative inquiry in terms of "words not having the same meaning to everybody because situations are perceived differently". In this thesis, one of the ways this issue has been approached was by inviting participants to intensively engage with the research process via the presentation of their perceptions on the determinants shaping their own universities.

As a planned research material in advance of the interviews, PVM thereby allows the participants to visually express their interpretation during the interview rather than the researcher trying to interpret and analyse the diagrams. In doing so, there are circumstances during the semi-structured interviews where the drawing has helped to provide a new account of participants' perceptions. Vince & Warren (2012, p. 278) acknowledge that participant diagram contributes "real values" to research as they have the potential to elucidate the collective aspects of knowledge and experience about a specific organisation.

As such, inviting participants to produce a drawing about the determinants shaping their universities entrepreneurial development has helped in this study to generate multiple interpretations and promote dialogue on participants' perceptions (section 5.4.2 Table 8), and the method fits well with the social constructivist paradigm of this study. However, considerable care has been taken to ensure that the use of PVM in the thesis does not taint the underlying emotions of the individual participant but rather to generate meaning from the data focusing on the determinants of their universities.

Importantly, the diagrams were explained in the context of the interviews. That is, PVM is used to complement interview discussions and therefore, both were concurrently and thematically analysed together using NVivo. Unlike statistical analytical tools, NVivo is not an analytical software. Rather it helps to systematically organise themes and manage the qualitatively generated data.

5.5.3 Method 3: The semi-structured interviews

Here interviewing takes a semi-structured form which is considered suitable to facilitate detailed conversation to inductively derive meaning into the subject matter. Some methodological researchers (e.g. DiCicco-Bloom & Crabtree, 2006) clarify the differences concerning semi-structured and unstructured interviews. While the former entails the use of pre-defined flexible questions with emergent queries generated from the discussion at given duration and place, the latter takes the form of one-to-one conversation without necessarily been driven using interview guide and is commonly applied in the ethnographic study (p. 315).

According to Seidman (1991, p. 3), "…interview allows the researcher to make sense of people's experience and interpretation given to such experience". This method seeks to understand the meaning of what the participants conceive about the issue under investigation (Kvale, 1996). Interviews are particularly useful for capturing the story from participants' experiences (McNamara, 1999). This means that accessing those experiences requires the researcher to be patient, natural and intuitive.

However, the most common drawbacks associated with interview include timing issue associated with arranging, conducting and interpreting; and the ability of the researcher to interpret and understand the participant's story, yet it remains a powerful method utilised by researchers to explore and develop understanding (Logie, 2015). This limitation may be minimised by planning for a variety of qualitative interview modes in the research design; that is, a combined technique involving indirect (skype or telephone) and direct (in-person) interviews.

Herein different modes of the interview were used, including Skype, face-to-face and telephone interviews. While telephone interview provides information quickly and has been reported to be productive in qualitative research (Sturges & Hanrahan, 2004), face-to-face is the most preferred strategy of the qualitative interview. For ethical consideration, telephone interview allows a participant who found it difficult to meet face-to-face to take part in the research (Irvine, 2010) thereby addressing anonymity issues. Despite the

benefits associated with telephone interviews, researchers (e.g. Irvine, 2010, p. 1) identified two major limitations, which are: "(i) lack of social interaction and building rapport with participants; and (ii) loss of visual cues to aid communication".

To some extent, the implications of these concerns depend greatly on the nature of the research. In this thesis, they are less relevant to this study since its primary focus is not to study human behaviour in their settings. Perhaps, the question is whether these issues have an impact on the quality of a study. While the use of a telephone interview is rare, there is a limited empirical study on the mode comparisons between in-person and telephone interviews (Sturges & Hanrahan, 2004).

5.5.3.1 The interview protocol

As mentioned earlier, in-depth semi-structured interviews were used as the primary methods of data collection. This is because of their suitability in addressing the research objectives which are exploratory in nature and answering the 'why and how' research questions. Table 21 in Appendix 6 shows the flow of interview questions and how they are linked with the research objectives and questions. Following McNamara's (2009) recommendations for creating effective interview questions, who cautioned about minimising asking the 'why' questions as leading questions amongst others, the interview guide for this research is designed without any 'why-type' questions been taken as main leading questions rather they are used as probes (see Appendix 6). The main questions (focus), follow-ups (more depth) and probes (clarifications) were flexibly utilised to allow the interviewer to identify emergent themes (Jones & Crompton, 2009).

As contextualised in preceding chapters that entrepreneurial university phenomenon is controversial and topical, conducting research on the topic of this nature is quite problematic. So, the researcher made an informed choice to send respondents summary of questions in advance in order to create awareness of the key issues to be discussed and allow them time for reflection and get ready to share their experience as they relate to the topic being explored (Henry et al., 2005; Hill et al., 1997).

177

Some methodological writers (e.g. Seidman, 1991) raised the concern about limited practical basis confirming the assumption that priming techniques may produce richer data. Having acknowledged this limitation, it has the potential to allow participants to have second thoughts about whether they want to continue participating or withdrawing their contribution. For example, in this study after sending the protocol some reactions were made by participants. The following acknowledgements were made: "I will have a think about sending you a diagram on determinants to entrepreneurial approach of individuals and the organisation" (Participant 1); "I do not have time to produce a mind map or taxonomy for you, just in case this rules me out" (Participant 2); "I have not been asked to produce a drawing before; it should be an interesting exercise" (Participant 4). While some withdrew their participation, others do not make any comments. See Appendix 3 for participants' responses to priming technique.

The interview guide is an important and interesting part of the non-statistical study (Turner, 2010). Gall et al. (2003) and McNamara (2009) summarise that interview design takes four forms: (i) conversational; (ii) generic (iii) standardised; and (iv) fixed response.

While informal-conversational interviewing ignores asking certain kind of questions, it relies wholly on unprompted responses generated through normal communication with participants; that is, questions are not predefined (McNamara, 2009). The shortcoming of this interview protocol is the inconsistency of the interview questions which makes it challenging for data coding (Creswell, 2007). Given it flexibility advantage, the conversational interview was undertaken in this research but with an interview schedule. However, to minimise the inconsistency gap, the conversational interview was complemented with standardise open-interview (see explanation in subsequent paragraphs).

The general interview has the intention to obtain similar responses from all respondents (McNamara, 2009). It is more focused and structured than the informal conversational approach as the questions are worded by the researcher who is also able to interchange how the questions are asked (Gall et al., 2003). The issue with this is that participants may be inconsistent in their responses but there is still a degree of freedom and

178

adaptability (Gall et al., 2003; McNamara, 2009). So, I ignored this interview pattern because I wanted the participants' responses to drive the interview discussion.

Again, with a standardised open-ended interview, it is extremely structured, same questions to all respondents, allows the researcher to utilise prompt questions as follow-up mechanisms with flexible queries thereby allowing respondents to provide as much detail as possible to the topic (Gall et al., 2003). This category of interview protocol encourages quick interviews that can be analysed and compared more easily (McNamara, 2009). Some methodologists (e.g. Seidman, 1991) doubt if the use of multiple interviews guides results in richer findings than as in a single interview. Since there is a paucity of empirical evidence to support this, using more than one interview schedule does not necessarily mean having richer data rather it may be difficult to analyse and time-consuming.

For this reason, this thesis concluded to use standardise open-ended interviews with only one interview schedule having the same questions to speak to all the key informants involved in the study. However, as the interview progresses the order of questions asked do vary amongst participants (Saunders & Thornhill, 2009). This is one benefits of semi-structured interviews from a social constructivist perspective and interpretivism approach which allows the researcher to be creative, flexible and able to dig further where short responses were given, and more detail required. This view has been adopted by Owen (2012, 2013), allowing the researcher to be flexible in the questions investigating background check policy in higher education. According to Hill et al. (2005, 1997), all questions on the protocol may be asked from the participants but certain emergent aspects may be pursue in-depth for each participant (Knox & Burkard, 2009).

On the notion of emergent responses, this technique is compatible with the conversational approach and therefore both were utilised in this thesis. In terms of compatibility with the overall research methodology, the combination of these two techniques is appropriately suitable, fit and relevant to the social constructivist paradigm of this research that encourages knowledge to be co-created through active social engagement with participants. In this regard, while the transcripts in this research cover the main

179

questions that address the research objectives, the questions were organised based on responses provided by the individual participant.

One possible weakness indicated by Creswell (2007) is difficulty with coding in terms of the extraction of the same themes from interview transcripts because the in-depth detail is covered by the respondents. On the other side, Gall et al. (2003) posit that this minimises the potential biases of the researcher during the interview process. To overcome this limitation, this research utilises the key components of RBV and corporate entrepreneurship to develop predefined themes: internal, external, and strategic determinants influencing the entrepreneurial universities, which are then clarified and identified further in the transcripts for other hidden factors (see Appendix 6).

In this thesis, the benefit of having a coherence approach in terms of the methodology that aligns well with underlying philosophy is to ensure that flexibility is undertaken as per the evolving items been explored in detail for insightful clarification in the subsequent interview sessions as the interviews progress. Thus, it provides quality for the research.

From my experience in this study, in some ways asking to standardise open questions may upset the participants. The main reason for this is unfound. However, I found that it is easier for the participant to consider that your questions are difficult to answer because you have not provided options to choose from. I would caution against the temptation to include close-ended questions if not anticipated to maintain an equal level of meaning from all participants. Finally, McNamara (2009) describes the closed-fixed response interview as that type suitable for non-practice-based interviewing "where all participants are asked similar questions with choices of same answers to be selected" (Types of Interviews section, para. 1).

As has been discussed in sub-subsection 5.4.2, the participants interviewed were all selected based on their rich experience of working within an entrepreneurial HE context with some basic criteria of at least 18 months' length of service working within UK HE sectors. While some respondents were found through staff profile from their universities' official webpage, others were recommended. They are (i) those who have strategic responsibility

such as Centre Director and/or Directors of Enterprise related post, Deans of Business schools because that is where most of the enterprise related activity takes place and the Deans either directly or indirectly involved in influencing the school-based system; (ii) those who teach entrepreneurship; and (iii) those who provide support for enterprise-related activities. Table 9 (herein) provides an overview of the respondents' roles who took part in this study and the average time taken to conduct interviews with them.

Table 9: Roles that participated in the study (presented in alphabetical order)

Number	Role Descriptions	Total of Participants	Total Duration of Interview (Minutes)	Average Interview Time (Minutes)
1.	Centre and/or Institute Directors with responsibility for the enterprise-related activity	8	471	58
2.	Deans	2	146	73
3.	Deputy Vice-Chancellor with responsibility for enterprise related activities	1	35	35
4.	Managers with responsibility for the enterprise-related activity	6	339	56
5.	Head of Enterprise Education	1	79	79
6.	Knowledge Transfer Leader with responsibility for commercialisation	1	50	50
7.	Lecturers with responsibility for Enterprise related program	4	228	57
8.	Professors with responsibility for the enterprise-related activity	3	121	40

Number	Role Descriptions	Total of Participants	Total Duration of Interview (Minutes)	Average Interview Time (Minutes)
9.	Pro-Vice-Chancellor with responsibility for enterprise related activities	1	60	60
10.	Project officers	4	180	45
11.	Senior Strategy Officer for Research and Enterprise	1	49	49
Total		32	1758	

As displayed in Table 9, the interviews were conducted with staff undertaking enterprise-related roles, each lasting between 30 and 104 minutes. While the total duration of the interviews is 1,758 minutes, the average time is 55 minutes (see Appendix 13). An important observation is that there is a substantial difference in the average interview time for the different participant group (strategy, academic, and support roles). For example, the average interview time for the Professors and Deputy VC groups is considerably lower (40 and 35 minutes respectively) than other group and this shows the extent to which universities' senior members are involved in enterprise-related activities at the strategy level. This is also observed in the project officer groups (45 minutes), which include enterprise coordinator role; that is, at the support level. While this result explains the high involvement of enterprise related activities at both the strategy and support level, it expresses less involvement at the academic level. So, the lower their average duration of the interview the higher they are involved and the higher their average duration of the interview the less they are involved. Therefore, the implication is that there is more to be done at the academic level to get them more inclined to such activities. This is important because enterprise related activities span across various aspects and complement universities' primary activities (teaching and research). Also, Table 9 provides a virtual

182

presentation that captures how the different group of participants express their views on how they are involved, why and why not they are less involved.

Now that the sampling techniques and methods for data collection have been discussed, the following paragraphs focus on qualitative data analysis.

5.5.3.2 Data analysis and coding techniques

In deciding an analytical technique for this thesis, I recognised the need for flexibility, as Javadi & Zarea (2016, p. 5) acknowledges "flexibility, as a rule, should be taken into consideration in the analysis". This was done by a continuous writing of ideas as they come to mind in the coding process and was reflected in the final interview guide (see Appendix 6). Therefore, this research adopts the thematic analysis technique in analysing data to find and explain themes in a data set (Braun & Clarke, 2006). By adopting the thematic technique, I defined and clarified between the determinants and characteristics of the different entrepreneurial universities, as Grbch (2013) acknowledges that it helps to reduce the volume of information to provide a rich set of data (Ryan & Bernard, 2000).

By following follow Miles & Huberman's (1994) recommendation that focusing on most relevant information will reduce data and systematically summarised selected codes into core categories, the textual data related to the determinants theme was coded into three core categories which include (i) grand-child; (ii) child; and (iii) parent nodes. For clarity, quality, and transparency, tabular display (see appendix 18) were used to provide visual evidence of the coding based on the themes which emerged from the inductive approach. Though a similar tabulated pattern was adopted by Davies (2014), but this was through the grounded theory analytical approach. Following Braun & Clarke's (2006) proposition of a six-stage analytical process as visualised in Figure 10, the first coding phase was a repeated reading of the transcript where familiarity with the data was established by summarising each transcripts using both memos in NVIVO 11 and handwritten summaries on some hard copy transcripts.

183

The second coding phase generated initial codes widely known as open coding where grandchild and child nodes were identified in the data using NVIVO 11. This second phase explains the inductive analysis part of this thesis as a qualitative research. The third phase is a search for themes using NVIVO 11 parent node for theory-driven analysis- a deductive approach where relevant terms in the literature were applied to data (see Appendix 18). In the fourth phase, the themes were reviewed by specifically applying components from RBV and CE theories and organising themes into determinants, characteristics, and typologies (see Chapter Six).

At phase five, the recursive analytical process was demonstrated as the sub-themes were defined and named by arranging determinants into three taxonomies: internal, strategic and external determinants and activities were labelled into three classifications: intra, inter and outward-facing practices, and clustered entrepreneurial university into three typologies: fledgling, fledged and fully-fledged (see subsections in Chapter Six). This fifth phase combined evidence from both inductive and deductive analysis (see Chapter Seven). Finally, I presented my theoretical and empirical contributions (see Chapter Eight) thereby providing answers to Patton's (2002, p. 103) appeal "please just tell us what you saw"?
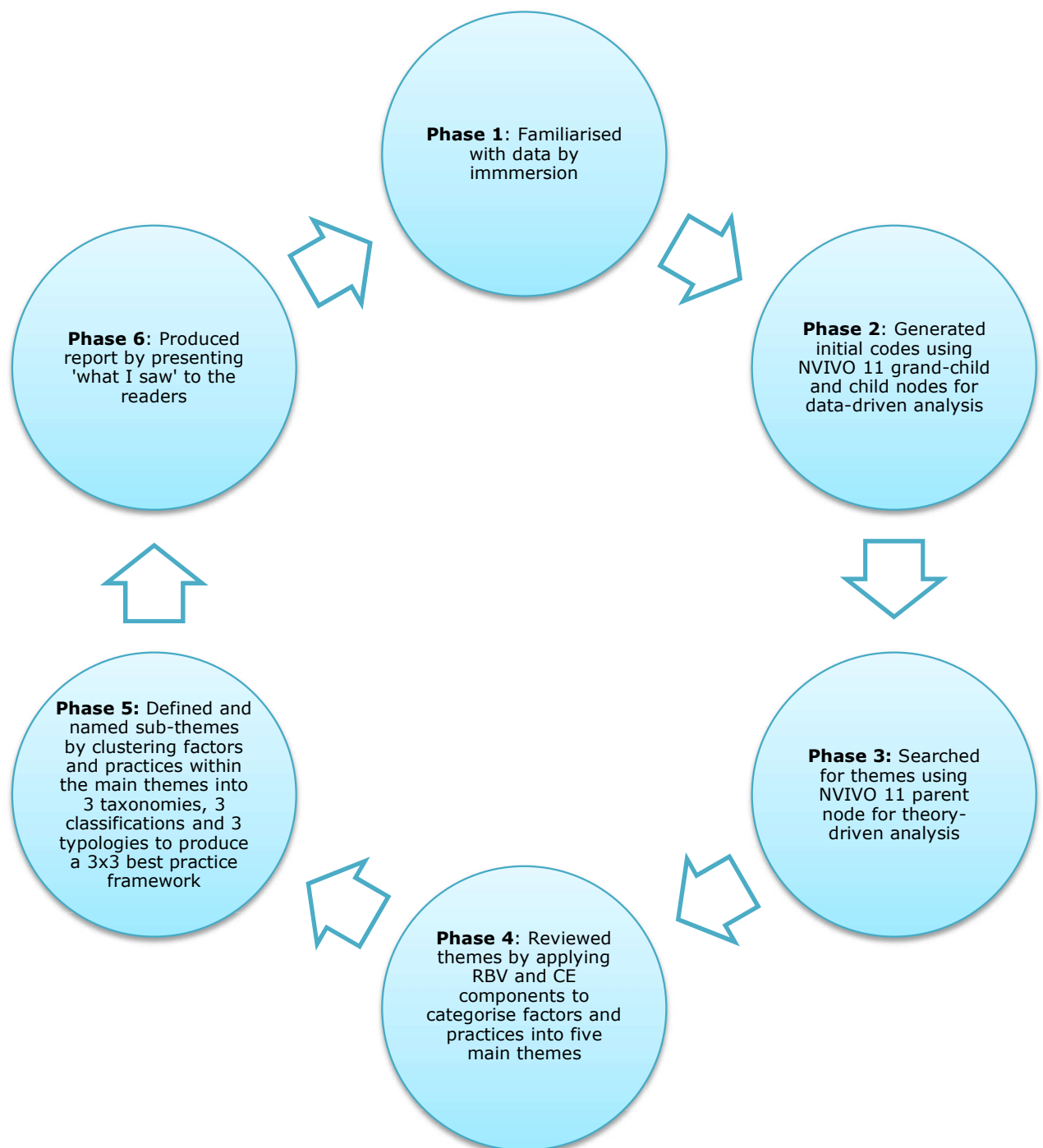
Figure 10: The six recursive phases of coding

Source: Author's own

Therefore, as shown in Figure 10, the data analysis in this thesis followed the six 'recursive stages' of coding and analysis processes (Braun & Clarke, 2006). This is based on analysing the contents of the interview transcripts to detect and extract meaning from data. Further to this, the interview data analysed are presented in bracketing; that is, a categorical grouping of themes (Rossman & Rallis, 2012) applying the personal language of the people interviewed as labeling (Creswell, 2014). While the original names of both participants and their universities were concealed using pseudonyms such as U1 for university 1 and P1 for participant 1, interview extracts were framed in the following way P/LL/YY. P represents participant, LL represents the start and end line where interview quotes were drawn from, and YY is the year the interview was taken as illustrated in Groenewald's (2004) research.

In terms of compatibility, NVivo is conducive to this research because it is suitable for managing the large data collected qualitatively and appropriate for thematic analysis. Thus, the theme is characterised by qualitative research that does not rely on statistical data but rather seeks meaning which again is in line with this thesis as an exploratory case study. Also, philosophically, my interpretive position which suggests that a "researcher cannot be separated from the construction of knowledge" (Logie, 2015, p. 67). That is, my social constructivist stance allows the understanding of the entrepreneurial university from multiple perspectives. Therefore, this research does not require the use of a statistical tool (e.g. SPSS) for analysis. However, unlike statistical tool, NVivo is not an analytical software but useful for organising and managing qualitative data.

The thematic analysis of all emerging themes is presented in the diagram below. The gold colour represents the key theme, the orange colour represents the parent node, the light orange colour represents the child node, and the blue or orange outline colour for the grand-child   node.

186

Leadership, Management, & Governance (LMG)

LMG Styles

- **Visionary**: Sell the vision · My vision · Must have · Visionary leader · Target
- **Transactional**: Keeping cost down · Costs & Benefits
- **Transformational**: Changes
- **Responsive & Responsible**: My fault · Works well · Attach · Awareness
- **Enterprising & Entrepreneurial**: Imagination & Cares · Action · Strive · Extraordinary & Supportive · Good & Great · Entrepreneurial VC, Thinker, Head of Tech · Enterprising leader · Commercial director
- **Democratic**: Not revolve around one person · Democratic
- **Collaborative**: We have achieved · Delegating · Cooperative & Collaborative · Business-like · Business
- **Business & Market**: Market · Businessman
- **Autocratic**: Control · Micro-manager · Aggressive & Autocratic
- **Creative & Innovative**: Make change · Best out of · Coaching & Teaching · Thinking & Inking · Finding creative solution

LMG Roles

- **Consulting & Communicating**: Discuss · Communicating · Chat · Formal meeting · Talk about · Meetings · Invites · Regular emails · Update · Report directly · Well-communicated · Inward dialogue · Roadshows/presentations
- **Resourcing & Recruiting**: Providing initiatives · Identify right personnel · Balance · Recruiting · Sorted for grants
- **Experimenting**: Criticism · Try · Innovative · Changed · Re-edited · Going to · Hands up · Make a difference · Willing to accept risk · Ideas · Solutions · Make things happen
- **Championing & Delegating**: Champion · Advocating · Set the tone · Release power · Championing
- **Enhancing & Monitoring**: Responsible & accountable · Authority · I am part of · Responsibility for · Free · Autonomy · Freedom · Permission

LMG Behavior

- **Inspiring & Motivating**: Stimulate · Source of influence · Appeal to me · Keen interest from top-down
- **Committing & Engaging**: Actual commitment · Engage · Quite keen · Listens · Engaging · Very keen
- **Motivating & Negotiating**: Motivate · Monitor · Measure · Rewards & Recognitions · Feel happier · Well done & thank you · Let them know
- **Knowledgeable**: Understand
- **Empowering & Encouraging**: Approachable · Leads by example · Empowers · Can do attitude · Encourage · Set own agenda

187

Organisational Culture & Attitude

Enterprise & Entrepreneurial culture

Change, Creativity, & Innovation
- Innovative approaches
- Client-focused
- Career-orientated
- Establishing change
- Adaptation
- Constantly looking at
- Creative problem solving
- Destructive
- Creative
- Way of
- Continuity
- Golden thread
- Changing & reflecting
- Driving values
- Jump
- Creative
- Entrepreneurial value
- Freedom to try & fail
- Developed radical invention & innovation
- Affect the way we think
- Awareness
- Innovative
- Social enterprise culture
- Motivate you in a way
- Risk-takers
- Embedding in everything
- Encourage entrepreneurial culture
- Internal support structure
- Going up those steps
- Changing
- Steps forward
- Adapting practices
- Moving forward
- Moving away

Collaborative culture

Collegiate
- Team stability
- Collegiate culture
- We
- Team culture
- New way of
- Work together
- Collaborative
- Culture of collegiality
- Links well
- Multi-disciplinary teams
- Cross-university projects
- Our University
- Collaborative
- Common thread

Open culture

Engaging
- Open-minded
- Able to accept
- Open door policy
- Adapt policies
- Changes to regulatory rules
- Open & transparent
- New procedures
- Change system & process
- Open culture
- Appreciation
- Open
- Flexible
- Engage
- Acceptability
- Change structure
- Positive
- Support structure

Financial Capacity

Income Generation
- Income growth
  - Income
    - Continue to grow
  - Earn
  - Financial model
- Earning
  - Disappears
    - Gets lost
    - Knocked down
- Money mismanagement
  - Taking over sports centres
    - acquisitions
- acquisition
- Generating income
  - Generate £250 million a year
  - Redundant
  - Up to £15million
  - Bid for funding
  - Bid for money
  - Make money by going out
  - Very reasonable turnover
  - Turnover doubled
  - Grants
  - Major grant
  - Generating income
- Fund attraction
  - Draw down more

Self-Reliant & Self-Supporting
- Self-reliant
  - Not spend
  - Not having any loans
  - Big surpluses
  - Not borrow
- Ranking
  - Number one for financial strength
  - Key criteria influencing Times League Tables
  - 15th in the Guardian League Tables
- Financial stability
  - Not to owe debt
  - Financially stable
  - Self-financing
  - Self-financing

Financial Planning & Assessment
- Forward-looking
- Forward-oriented
  - Work out where, when, & how much needed

Financial Difficulties
Self-Sustaining & self-Determined
- Prudence
  - Level of efficiency
  - Financially prudent
- Investment
  - Investment by staff placement
  - Consistencies & foundations
  - Investing more money
  - £40,000 investment budget
  - Used to
  - Spend about £30 million
  - Trends
- Possessed
  - Funded it up
  - Financial capacity
  - Have we got
  - Let say £25 million
  - Budget
- Economical
  - Owned by
  - Budget
  - Keep cost down

- Financial pressures
  - Financial pressures
  - Funding issues

18

Physical Resources

Technological Facilities
Technology
- E-textbooks
- Technological engagement
- Start-up facilities
- Office facilities
- Certain technologie
- New technologies
- Modern facilities
- IPad technology

Support Infrastructure
Set-up
- Business spaces
- Buying building
- Infrastructure
- Less supportive infrastructure
- Supportive structure & infrastructure
- Infrastructure
- Good environment
- Building inspires
- Where the building is
- How it encourages

Structure

Develop
- Buildings going up
- New building coming up
- More buildings
- Moving to a new space
- Upgrade building
- Redevelopment
- Building reinstate
- Invest in buildings
- Erect a new building up
- Want new building

Reconstruct
- Physical spaces & environments
- Innovation space
- Refresh
- Upgrade physical space
- Rebuilding

Structure
- De rigueur
- Working space environment
- Set-up incubators

Visibility
- Eye of business
- People's face
- Social place
- Technological Park
- Opened an incubator

Unappealing
- Not student-facing
- Enterprise department not within a faculty
- Social enterprise space
- Visible place
- Entrepreneurial environment
- Different buildings
- Visible

Centralised structure

Individual Qualities & Capabilities

Personality
- Like to do
- suits me
- Personal missions
- Academics' personality
- do not enjoy that type of job
- Can do detail
- Not good for me
- Like to

Ambition & Passion

Ambition & action
- Being ambitious
- Ambition & action
- Ambition & innovation
- Action-orientation
- Action-oriented

Passion
- Can-do
- Like doing
- Interactive
- Have interest in
- Passion for / Passionate about

Confidence
- Confidence in oneself
- Natural confidence to rise back
- Confidence
- Pretty confidence
- Passionate about
- Not that confidence

Confidence & passion

Lack confidence

Willing
- Ability to buy-in

Drive
- Ambition for

Speculate
- Where others do not see
- Able to make connections
- Individual that can see
- Ambitious & grounded

Determined

Knowledge & Mind-set
- Mind-set → Commercial mind-set
- Knowledge → Knowledge

Lack of experience
- Does not have a very long history

Experience & Expertise

Selling skills
- Getting people to understand
- Sales skills
- Behavioral skills
- Interest of
- Skills & expertise

Expertise
- Range of expertise
- Expected expertise
- Drawn from various areas
- Experts and leading people
- Driven by expertise

Substantial record known for

Academic-industry experience
- Long history
- Experience of staff
- Strong reputation
- For 36 years
- Used to
- Good helicopter view
- Job length
- Made their names, fortunes,
- Working with the interface between academia & industry

Talent & experience
- Very talented & experienced

Industry experience
- Varied industry experience
- Wide range of experience
- Previously in charge
- He built
- Behind the setting up

Background & Qualification

Academic qualification & background
- Strong background & qualifications
- Doctoral qualifications

Student capabilities
- Type of students
- Expose to

Cultural background
- Cultural backgrounds
- Scottish VC
- Scottish Finance Director
- Cautious individuals

Contextual background
- Own context & background

Employment history
- Used to be
- Worked for
- Identity

Motivational Factors

- Promoting
  - Promotion
    - Gain promotion
    - Value
    - Clear way for promotion
    - Getting promotion
- Incentivizing
  - Rewards & recognitions
    - Recognition
    - Reward enterprise activities in recruitment
    - Awards
    - Doctor of Letters Award
    - Rewarded
    - Recognise the good work
    - Rewards & recognises
    - Financial reward to incentivize
    - Recognise their work
- Satisfying
  - Satisfying a need
    - Do not want to get out of touch with the real world
    - Enjoy satisfying a need
  - Satisfaction
    - Sense of belonginess
    - Want to be
    - Feel pride
    - Job satisfaction
- Motivating & Inspiring
  - Motivating & recognising
    - Motivation
    - Recognize success
    - Motivate
    - Recognize
    - Bring out
    - Lot of motivation for
    - Using motivation for
    - Have the motivation
    - Motivation behind it
  - Inspiring
    - Inspirational
    - Motivating
    - Very motivating
- Appreciating & Encouraging
  - Encouraging
    - Appreciated
    - Encourage staff
    - Encouragement
  - Appreciating
- Assessing
  - Discussing, negotiating, & assessing
    - If you try to do something at this pace
    - How will I measure, reward, & monitor?
  - Assessing

192

Organisational Objectives & Reputational Strategies

Main branches: Planning & Executing, Mission, Vision, Action, Message, Decision, Objectives & Strategies

Mission
- Mission
- Entrepreneurial mission
- Core mission

Vision
- Direction
- vision
  - Bigger vision
  - Vision
  - Strategic vision
  - Direction
  - Strategy
  - Vision
  - Clear vision & strategy
  - Clear aspiration
  - Vision
  - We want to be

Message
- Flows — Flows from
- communication
- Message
  - Key message
  - Clear message
  - Integrate communication strategy
  - Messages
  - Corporate Message

Planning & Executing
- Revisit theme — focusing
- Plan & execute agenda
- Applied
- Prioritize
- Set as
- Strategic document
- Strategy map
- Strategic planning & thinking
- Action / Action / Actions / Actions
- Revisiting enterprise theme
- Refreshing strategy
- Central focus
- Focus on enterprise
- Took strategic decision in 2006
- Applied
- Prioritize
- Sets out as
- Set as part of
- Strategic document
- Strategy map
- Strategic thinking
- Do not come overnight

Decision
- Types of decisions
- Decision about strategic priorities
- Decision
- Making good decisions
- Strategic decisions

Objectives & Strategies
- Strategy
  - Research strategy
  - Clear strategy
  - Our own strategy
  - Set strategy
  - Enterprise strategy
  - Embed enterprise
  - SME strategy
- Embed enterprise
  - Enterprise embedded
  - Embed enterprise agenda
  - Commercial objective
  - Policy
  - Enterprise within university strategy
  - Innovation & enterprise strategy
  - Main differentiating characteristics
- Intentions
  - Strategic intentions
  - Commercial brief
  - Measure of university strategy
  - Entrepreneurial activities target
- Objectives & strategies
  - On-going objectives & strategies
  - Clear goals
  - Key milestones
  - Goals
  - Strategy
  - Policies
  - Business engagement objectives & aims
  - Milestones

National Objectives, Priorities, & Requirements

Requirements
- Request
  - Asking for
  - requirements
    - Achieving impact
    - REF impact
    - Impact has major influence

Priority
- Funding priority
  - Industry strategy
  - Government funding priority

National Objectives & Requirements
- HEFCE objectives & requirements
  - Requires
  - HEFCE strategic

Expectation
- Want us to
  - Want us to
- Expected
  - Expected to engage
- Demand
  - Students' demand
- Understanding the context
  - To understanding the context
- Expected role
  - Useful in the community
- Role
  - Witty Review
  - Role play in
- Control & opportunity
  - Control & opportunity
- Social problem
  - Social problem

194

External Funding & Government Expectations

Expectations
- Employability focus — Need for employability focus
- Legislation — Legislative framework
- Government & politicians — Minister for enterprise; Minister for small firms
- Expectations — How successful?; How well?
- Focus — Policy environment; Focusing on
- Government demand — Political issues; Constant focus on
- Objectives — Set objectives
- Want — Regional politicians want
- outcomes — To achieve outcomes
- Expect — Want to see

Invitation
- Calls — Funding calls

Competition
- Research competition
- Gone up
- Done OK
- Enterprise scheme competition

Funders
- Funding bodies — Research Councils; HEFCE; LEPs; Financial institutions; Funding agencies; Innovate UK; ABS; NHS; UnLtd; Scotland Funding Council
- Government money — Supported by; Government put money
- Match funding — Match funding
- Co-funding — Co-funded through HEIF
- European Union — European Union money pushing entrepreneurial agenda; European Union funding
- Research Councils — Technology Transfer fund; Research Councils
- HEIF — funding from HEIF; Funded with HEIF
- Sources — Industry-funded research
- Independent entrepreneur — Backpack to funding; Individuals; Sources of income; An alumnus backing us up; Business enterprise fund; Somebody donates a large sum; Come from; Gift donations; Alumni donations

Requirements
- Are you? — Are you entrepreneurial?
- Requirements — Requirements to meet
- Requested — Requested by

Funding
- Funds application
- Funding difficulty — Hard to get funding; Applying for funds; Applying for grants; funding kind of constraint; Hard to get; Difficulty; Hard; Challenge is to
- Allocation — Maximum allocation
- Funding — Regional funding; External funding; Obtaining funds; Students' funding; Receiving highest tier of HEIF; Opportunities for funding
- Grants usage — Grants used for; Use
- Funds — Getting funds
- Attracting fund — Bring in money
- Fund attractor — Vehicle for attracting funds
- Enterprise funds — Students' enterprise funds
- Grants — Bidding for grants; Grants scheme

Corporate Brand Awareness

Reaching out
Cover
Brand & Reputation
Communication
Ranking
Self-defined
Tag
Status
Publicizing
Endorse
Position
Awarenes
Recognition & record
Niche

Coverage
Coverage
Cemented
Cemented

Brand
Brand
Reputation
Re-branding
Freshness
Very good reputation
Very different way

Pronounced
Symbolic
Promotion
Side show
External message
Sent out message
Share good stories
Speak out
communication

Ranking
Going up the ranking
Going up
Top 10
15th in

Outward-looking
Identity
Name
Realized
See itself
Outward-looking
University's name
Want to be
Making names
Realized where we were
Tagged

Tagged
Achievement & status
Status
On-going achievement
Level or status
Tagged

Exciting & endorsement
Market opportunities
Opportunity
Extremely exciting
Massive endorsement

Niche
Niche area
Recognition & publicity
Recognition
Recognition
Like Oscars
Collective recognition
Great recognition

Recognition & validation
Need to celebrate & showcase
Not good at promoting
Low profile publicity
High profile publicity
Profile raising
Show & tell
Recognise you
External validation
Peers view you

Recognised evidence
Evidence
Succes
Seen by
Prove
Appearing
Can see
Demonstrated
Good case studies

Media
Editorial
Local papers
News section
National press
On the news
Known for

Present
Strong present
Recognition & record
Known
Recognition
Demonstrate

Awareness
Awareness

Positioning
Position ourselves
Stand out
Positioning
Choosing where you want to be
Profile slightly different

Position

Entrepreneurial Opportunity Exploitation & Exploration

Central node: Entrepreneurial Opportunity Exploitation & Exploration

- Start-ups opportunities
  - Start-ups entrepreneurial opportunities
  - Start-ups opportunities
- Innovation opportunities
  - Opportunities to innovate
  - Unique opportunities & risks
- Opportunity & risks
  - Opportunities & risks
- Unique opportunities
  - Opportunities we have
- Opportunity exploration
  - Explore
    - Look at
    - Let see what we can
- Opportunity exploitation
  - To explore
  - Look for
  - Find many opportunities
  - Find out opportunities
  - Looking at opportunity
  - Look for new opportunities
  - Look out for & create opportunities
- Opportunity recognition
  - Realising opportunities
  - Recognising opportunities
- Opportunity exploitation
  - Opportunity orientation
  - Exploiting opportunities
  - Pursuing opportunities
  - Exploit
  - Exploitation
  - Opportunity exploitation
- Entrepreneurial opportunities
  - Entrepreneurial opportunities
  - Enterprising opportunities
- Collaboration opportunities
  - Link up with
  - Opportunities to engage
  - Collaboration & cooperation opportunities
- Employability opportunities
  - Employability opportunities
- Resources opportunities
  - Available resources
- New business opportunity
  - New business opportunities
  - Finding ways
- Investment opportunities
  - New investment opportunities
  - Investment opportunities

197

Geographical Factors

Region differentiates universities
Region is a unique theme to differentiate universities
- Region
- Unique theme
- Differentiates

Located in city
Live in the City
- Live in the City

Entrepreneurial ecosystem
Social enterprise city
Entrepreneurial place
- Well-known social enterprise city
- Entrepreneurial place

Location
Geographical location
Root in locale
- Geographical location
- Root in locale
- High density & populated city
- Small geographical area

Competition
Global & local competition
Regional universities in competition
- Competition at local level
- Global level
- Some universities are high flyers & others are excellent
- 12 universities in a region

Business Area
Commercial area
Busy business area
- Locality & regions
- Economic base
- Up & coming business area
- Resides
- Grown area & location
- New grown area
- Location

Fully-fledged location

Industry region
Automotive industry region
- Automotive industry in region

Unattractive location
- Not the most attractive place

Attractive location
Attractive location
Attractive & accessible location
- Attractive location
- Ease of access
- Fantastic City
- Noble City

More opportunities in larger urban centres
Industry & learning experience opportunities in larger urban centres
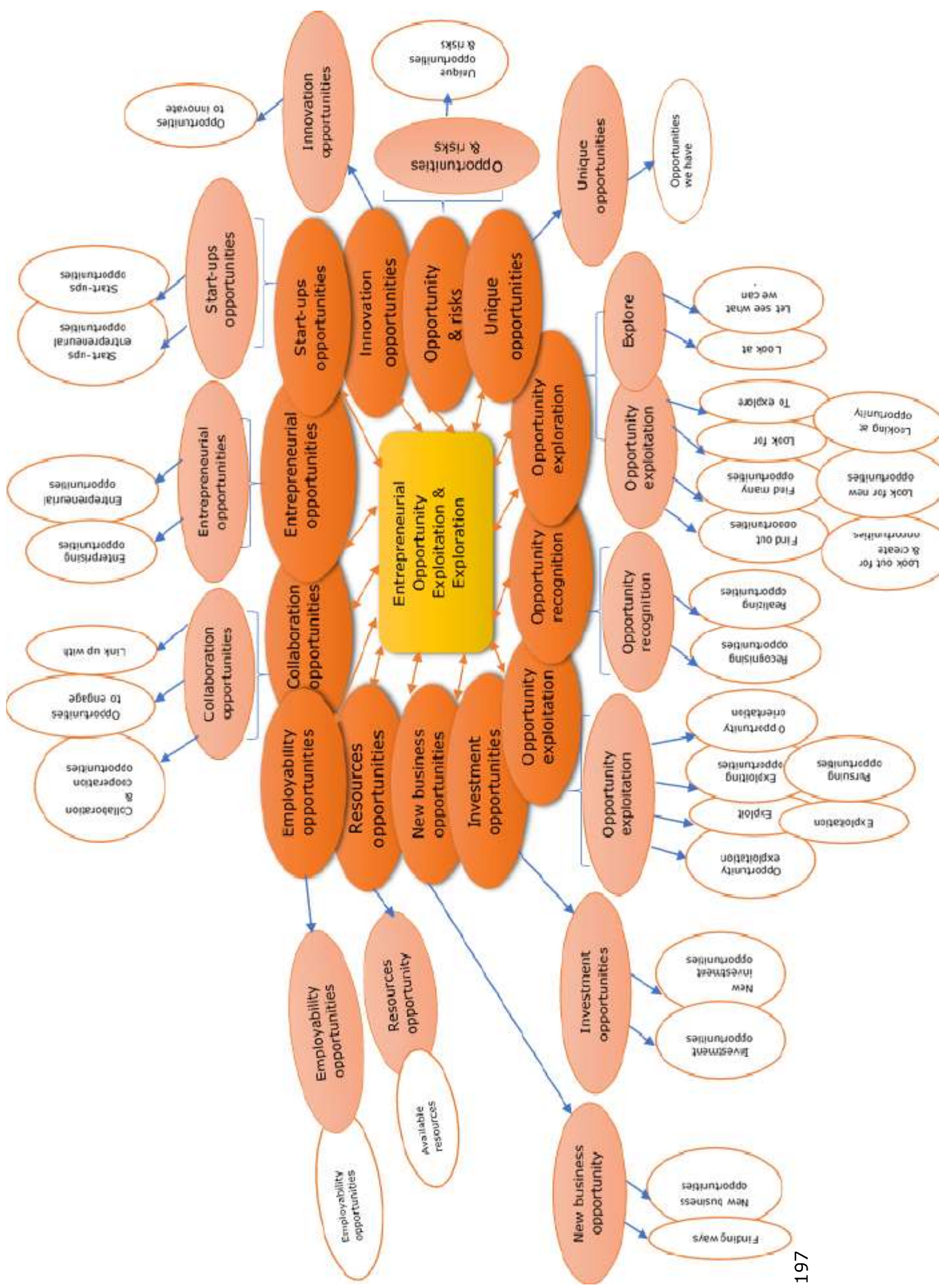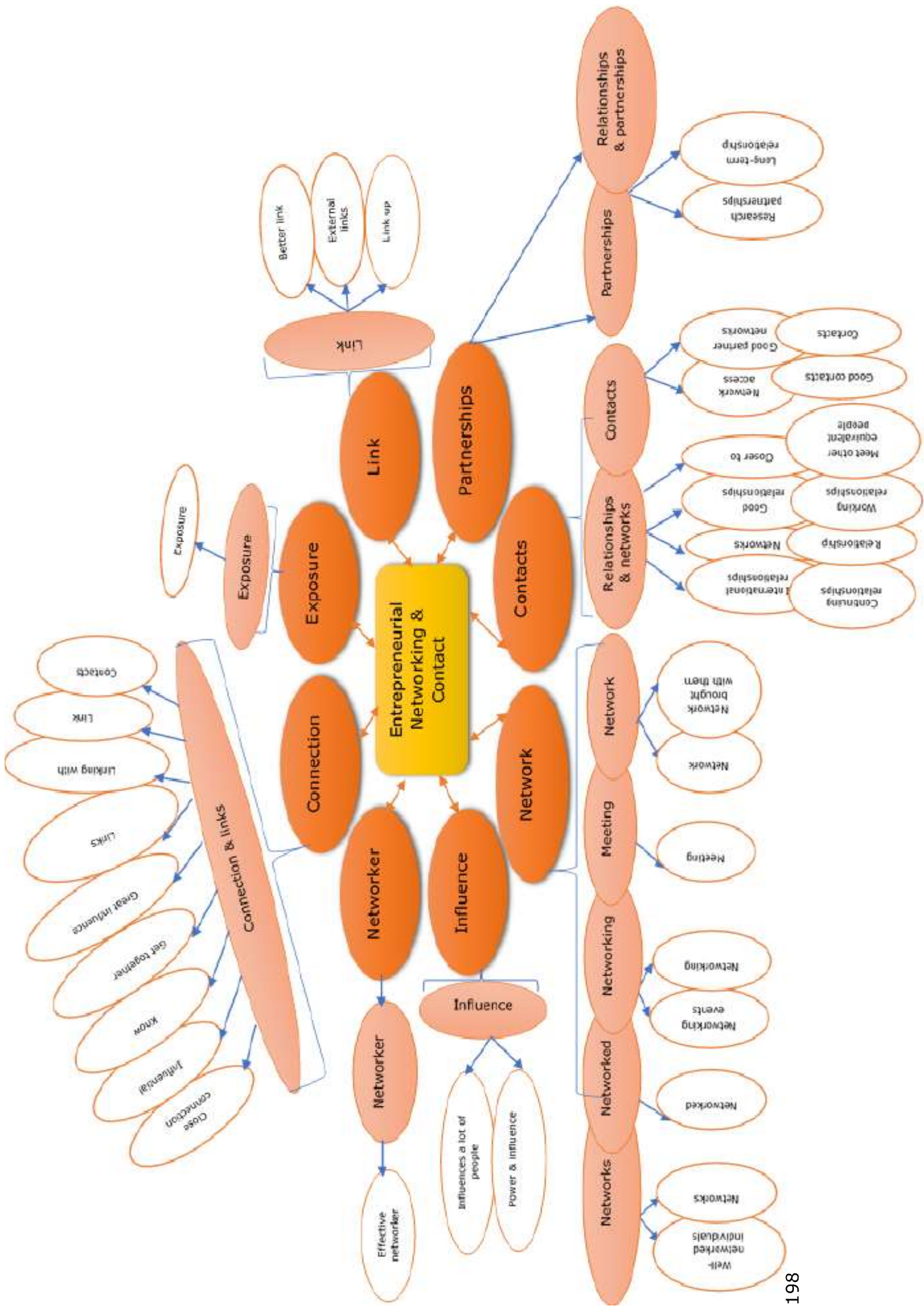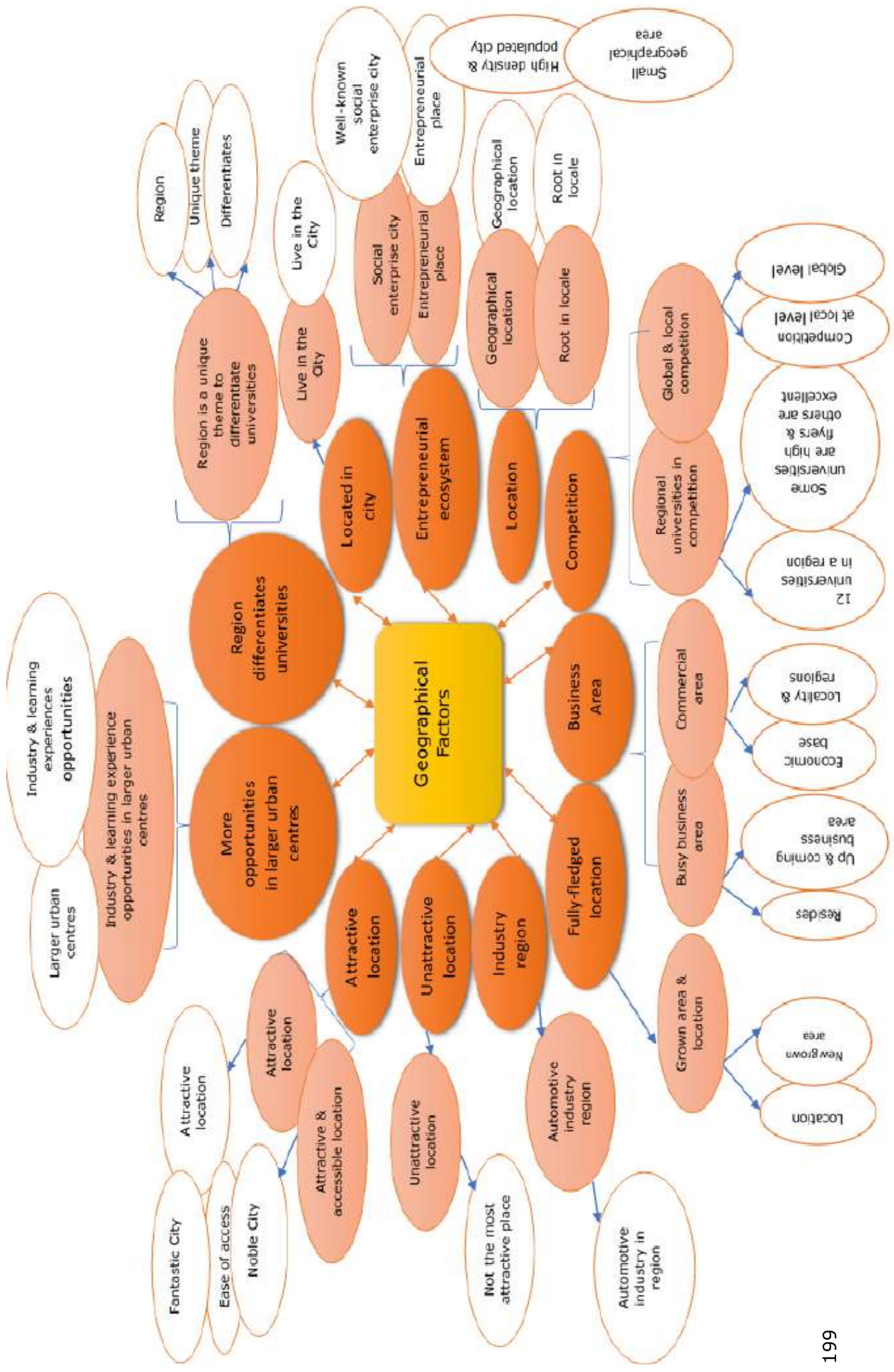- Industry & learning experiences opportunities
- Larger urban centres

199

The next section explains how the chosen methods in this thesis are triangulated to enhance the quality of the research.

5.6 Triangulation informed validity and reliability

In contrast to a quantitative inquiry where direct consideration is mostly given to validity and reliability issues, in this research, consideration was given to triangulation to develop outcomes as well as arrive at a concise conclusion. Triangulation involves gathering information through various means to minimise bias while allowing the verification of findings to occur within a study (Grix, 2004). The application of more than one means of collecting information enhances data credibility in QCS (Patton, 1990). Consequently, the use of multiple data collection methods (either primary or secondary or even both) is one of the ways to address the triangulation issue. In the case of this study, a qualitative research that is characterised by document analysis, PVM and interviewing consisting of flexible questions to allow flexibility with an emphasis on determinants underpinning the entrepreneurial university, the credibility of the research is established.

Some scholars (e.g. Copeland & Agosto, 2012) affirmed that using combined methods to gather information aids triangulation and allows internal consistency to be established, this, in turn, enhances trustworthiness in the meaning ascribed to the data thereby strengthened the quality of the research. While validity is the "trustworthiness of interpretations or conclusions, reliability is the trustworthiness of observations or data" (Stiles, 1993, p. 601); that is, the need that results can be repeated (Burr, 2015). Further to enhancing reliability, the data collection and analysis were systematically undertaken with a predefined research protocol for clear and concise guidelines (see Appendix 4). According to Bryman & Bell (2015), validity in research may be established in several ways including face, construct, and convergent validity. In agreement with this research methodology and social constructivist inquiry; that is, the social construction of understanding and knowledge of the entrepreneurial university by key informants with the

possibilities of multiple realities (see Table 11 herein), this study establishes face and construct validity. Following Denzin's (2009 & 2017) recommendations that the credibility of research findings can be realised in various ways and to show how the rigour of the research is established, Table 10 provides an overview of the theory or concept, data and method triangulation.

Table 10: Theory, data and method triangulations: Trustworthiness and rigour

Triangulation types	Description
Theory/concept	The utilisation of multiple analytical lenses. This is in relation to the evolutionary RBV, the strategic CE and the contextual analysis of the entrepreneurial university as explained in Chapter Four. In doing so, I was able to assess the application, relevance, strength, and limitation of each perspective. Thereby, advancing entrepreneurship research from a theory-specific study toward a generalised-theoretical inquiry.
Data	Combining data from different sources: That is, sampling selection of cases and persons. The case sample selection includes definition (the 'self-defined' that have been assessed through the UK government-led NCEE scheme), time space (universities actively involved in the Times Higher Education Supplement Award between 2008 and 2015), location (England and Scotland with highest number of universities), and in different segments (Pre and Post-1992 institutions vis-à-vis teaching, research, and technological orientations) within a context (UK higher education). The research participants sample selection includes a hierarchy of people (academic, strategic, and support staff).

Triangulation types	Description
	It is important to note that despite sampling different people, the findings were consistent across all cases. However, some contradictions were observed in the data collected from different people within the same university as reported in the next Table below.
Methods	Using variations of methods (document analysis, participant-led visual method, and semi-structured interviews) within the qualitative research. It is important to note that some research participants did interviews only, and others did both. However, the reason for this choice is due to their availabilities in relation to the time taken to undertake an additional task.

Some methodological scholars (e.g. Denzin, 2009 & 2017) argue that one method or theory cannot provide adequate insight into all that is significant to a reality. As such, Denzin advocates for an integrated view of both method and theory in sociological research. Consequently, Denzin's view supports the use of triangulation. Therefore, Denzin's notion substantiates the use of RBV theory with CE concept, multiple methods (interviews, PVM, and document analysis), my interpretive or constructivist paradigm of multiple realities, axiological perspective of multiple value, and multiple sampling techniques (purposeful for cases and criterion, expert, and different hierarchical levels of the research participants) undertaken in this research. All these bring coherence and trustworthiness to the research outcomes. That is, the use of multiple perspectives enhances the study by offering a systemic synthesis between concept, theory, and methods thereby showing how different approaches shape the rigour of the research results, as shown in Tables 10 and 11. Also, this multiple level triangulation provides a valid and reliable set of data.

Table 11: Data triangulation of multilevel insights

Academic staff	Enterprise support staff	Strategic staff
Controlled and confined curriculum -Timing issue (flip classroom and problem-based learning activities) -Workloads Innovative teaching via active teaching methods (case studies, games) -entrepreneurial pedagogy with the need for sufficient resources (training) Collaboration weakness both internally and externally. Personal initiatives and passion of staff. The reward has been some sort of motivation.	Academics resistance due to -Timing issue -Workloads Lack of understanding and confuse communication Lack of a joined-up approach The conflict between administrators and those academics who want to be entrepreneurial.	Being very supportive but divided opinions - No reward system rather it is the faculties' expectation. - There is a reward system (monetary and non-monetary).

Table 11 is a data triangulation of the multilevel insight into understanding the entrepreneurial university. The Table expresses that while the academics are constrained in engaging in entrepreneurial activities because of confined curriculum thereby leading to timing issue for them, some of the strategists claimed that they have incentives in place to motivate academics to be more involved in entrepreneurial activities and others acknowledged that they do not. However, the enterprise staff confirmed that the academics are resistance to engage in entrepreneurial enterprise activities because of their timing and

workload issues. This suggests the need for more support to foster academic engagement in entrepreneurship. This is of significance because the way in which a university's entrepreneurial practices interface and interact influence its innovation, enterprise, entrepreneurship, experimentation, and creativity (I3EC) capabilities.

Table 11 supports the completeness perspective associated with triangulation which argues that triangulation extends beyond validation and justification to mapping out and explaining in detail the richness of exploring multiple views thereby providing a clearer and richer picture of the phenomenon (Altrichter et al., 1993; Breitmayer et al., 1993; Cohen et al., 2000). Interestingly, this allows for the understanding of why there are differences and similarities in the opinion of participants. In the case of this thesis, it sheds light on the complexity of different universities and clarification of entrepreneurial practices within the specific university. For example, it was observed that while post-1992 developed extensive networks with alumni community and SMEs, their pre-1992 counterparts have established records with larger organisations and other research institutions. In turn, the level of network relationships influences their funding capacity by determining their financial attraction.

As such, networking is conceded as a pre-entrepreneurial transformational mechanism that can affect the ability of a university to obtain resource to support its entrepreneurial activities. Above all, in this thesis, I have observed entrepreneurial as making things happen, dealing with dynamic complexity- where a myriad of relationships exists. The ability to manage these relationships in a university setting seems to be contingent on three taxonomies: (i) internal; (ii) external; and (iii) strategic factors. In fact, while these three are important, internal factors appear to be more dominating than the other two. Therefore, this suggests that university leaders, managers, and governors must first promote an internal source of a transformational mechanism for entrepreneurialism to advance within their institutions before emphasising the external aspects.

Thus, multiple realities help to address the triangulation gap. To establish face validity, the author received feedback on the interview questions from different groups of individuals: two assessors during Year 2 Progression, one member of research ethics

committee, the supervisory team and three senior colleagues (see Appendix 5). For the construct validity, the research adopts theoretical constructs on which inferences were legitimately based, which were highlighted and discussed in Chapter Three.

In addition to face and construct validity, the author applies member check validity as an effective way to disseminate and share research outcomes with those who have contributed to the study to check and approve the interpretation of the researcher (Crilly et al., 2006). In consideration of this, this research utilises both the traditionally written transcripts to obtain participants' approval on the quality of the data provided. Afterward, diagrammatically unified the key codes associated with the determinants of an entrepreneurial university obtained through the empirical data to finally and precisely present findings.

5.6.1 Generalisability, replicability, transferability, and reliability

In agreement with the stated research focus, which extends the European framework by exploring how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial', the chosen materials, methodology and methods utilised in this study are considered suitable and supportive. Therefore, the trustworthiness and rigour of the research are established in the following ways: (i) data collection- 32 interviews from different hierarchical levels (academic, strategic, and support staff) in the organisation; (ii) transcription and analysis- solely done by the researcher who collected the information. That is, no interpreter is involved because the information was obtained in English and no third-party interference with analysis of the collected data that might have re-directed the interpretation and meaning; and (iii) complementing different sampling techniques. First, purposeful sampling- the cases were bound by 'definition, location, and time'. Second, criteria, judgemental/expert, and snowball sampling- the interviewees were recruited based on their responsibilities for enterprise or entrepreneurship, 'specialist' knowledge and through 'referral'.

Although interpretive inquiry does not mostly make claim on the generalisability of research results (Lincoln & Guba, 1990; Logie, 2015; Stiles, 1993) and with the assertion that there is limitation to generalisation in non-probability sampling (Yin, 1984), working with fifteen universities with their different orientations and interest groups offer a substantial claim that the results and conclusion from this study could be applied to different contexts. Besides, given that the conclusion is intended to be drawn from 'multiple realities', therefore, the findings provide accurate reflections of the perceptions of sets of key informants from multiple study organisations.

The appropriateness of the research approach is that multiple case studies have the generalisability potential. Therefore, these findings could be transferable to other universities within and outside the UK. Though the researcher acknowledges that the study focuses on a subset of entrepreneurial universities in the UK, yet the results and conclusion may be directly applicable to other different universities because the cases in the study have heterogeneous characteristics thereby having the generalisable potential. Thus, it could be claimed that selected cases are illustrative exemplars of British universities because there is diversity in the sector regarding traditions, sizes, types, and missions of universities. In these circumstances, this research has the generalisability, transferability, applicability or replicability criteria.

Some methodologists (e.g. Lincoln & Guba, 1990), distinguish between generalisability and applicability suggesting the latter as being the way in which the results and conclusion help the audience to reflect on how to adapt and apply them to their own situations (also known as replicability or transferability) and the former as being a precise conclusion. On these notions, a claim was made for this interpretivism and social constructivist driven inquiry. Having clarified my philosophical position, the sampling techniques, and data collection methods, the issues associated with research ethics are considered.

5.7 Ethical issues: Insiderness and power differential

Prior to undertaking the fieldwork, ethics form was completed and approved by the Ethics Committee of Huddersfield Business School. For a reflection on a wide range of ethical issues, the University's checklist on UniLearn was used as a guide. The copy of the ethical approval sheet accompanied this thesis in Appendix 10. In compliance with research integrity, some ethical challenges were predicted prior to the study and other issues arose during the research process. Among the major ethical issues addressed in advance of the full study include insider characterisation of the researcher, the power differential, and confidentiality.

5.7.1 Anticipated ethical issues

At the onset of preparation for the research process, careful consideration was taken on insider characterisation of the researcher, power differential, and confidentiality issues. Therefore, it is important as part of methodological considerations to examine and reflect on how the researcher's role has shaped the investigation. Lorbiecki and Jack (2000) highlighted the importance of considering the reflexivity of the researcher's role and influence, arguing that: "reflexive thinking enables researchers […] to consider deeply the environmental impact of the knowledge being constructed" (Lorbiecki and Jack, 2000, s22).

In the case of this thesis and as mentioned earlier, one of the anticipated issues is an inherent power differential. According to Charles (2015), the inherent power differential could occur where the researcher has power over the research participant which could lead to abuse of power. Charles describes further that abuse of power could take the form of promising money for participation or coercion to disclose certain personal information. In contrast, it is the opposite in this research as 'power differential' otherwise known as the positional ethical issue is defined in reverse in terms of the researcher's supervisor becoming a research participant in the study. While the impacts of positional issues on interviews remain unknown, the social constructivist paradigm allows the researcher to construct knowledge from multiple perspectives.

207

Thus, one of the measures that helped the researcher to manage this is by recruiting a broad range of participants who will be able to provide similar answers as the person in question would do without necessarily being in the same position but with the orientation that is overtly shaped by their individual positions and personal involvement in entrepreneurial activities. By taking this approach to address the power differential issue, this, in turn, led to what I describe as 'respondents' insider characterisation'. This respondents' insider characterisation forms the strength of each case as it reflects the narrative accounts of their universities' actions in responding to the policy imperative of becoming more entrepreneurial. Thus, Insiderness of the participants becomes an important aspect of developing a reality from their own perspectives. According to some organisational researchers (e.g. Brannick & Coghlan, 2007; Foss & Gibson, 2015), insider research characterisation provides significant information about each case by placing emphasis on the relevant of contextualisation that other descriptive traditional approaches are less likely to cover or even capture in-depth case stories considered important to this study.

However, at the stage of collecting data, the person in question was no longer in the supervisory team thereby removing the barrier and whilst been invited for participation, consent was not given either. In this regard, the researcher considered recruiting those who could provide information about their universities' entrepreneurial activities. In complementing this criterion and to enhance cross-case comparability, the researcher decided to invite research participants to prepare a drawing of the determinants interacting to shape entrepreneurial activities within their universities in advance of the interview session. In doing so, it is hoped that access to the mindset of the participants would be gained without been forceful and to uncover new perspectives since participants were also aware that their institutions may be easily recognised through their entrepreneurial practices or activities because as at 2015, only twenty-eight self-defined entrepreneurial universities exist. Further detail on how this has been managed is discussed in the confidentiality section herein.

The second ethical issue is 'Insiderness of the researcher'. Some authors provided some definitions of the concept of 'Insiderness'. Griffiths considers that an insider

perspective occurs: "in a situation whereby the investigator is conducting the study as an insider- an individual whose biographies such as social class connect him/her with the investigated subject" (Griffith, 1998, p. 362). Mercer (2007) asserts that an 'insider' is a member of the certain group with similar specified social identities. Mercy pointed out further that the insider is associated with a "native" researcher; that is, the researcher shares certain characteristics and attributes with the research participants or the subject examined (p. 5).

In this study, an insider researcher occurs in terms of the researcher conducting a study within her own study environment based on her student status as a prospective doctoral candidate. Although an insider researcher, this would not have any limitation of the study rather it provided the possibility of collecting comprehensive information as well as obtaining more background data (Hewitt-Taylor, 2002). For example, from my experience in interviewing a Director with responsibility for enterprise as well as a member of the strategic team at my own University, responses open new area – regarding the ASHOKA accreditation to consider in my research and it was suggested that they would expect me to include this in my literature review chapter. A sample of interview extracts read:

"We are considering trying to go for ASHOKA status which will be a massive strategic initiative. But it is in the context of your Ph.D. This initiative is something that I expected to see in your literature review at least. But we are considering it and the strategic board in the University that deal with teaching and learning have approved it, so we are taking it forward and looking at how to do it. Although this is not written down in the strategy it is a strategic initiative associated with the enterprise. There are other initiatives, they are initiatives rather than been in the strategic documents" (P3/L308-315/26.08.2015).

This similar perspective has been adopted by Golding & Trafford (2011), whose doctoral journey relates to designing and conducting a programme that was established by her University aimed at internal practices to demystify the viva examination experience of future postgraduates and to provide supporting resources to those approaching their viva stage.

While the extent to which pre-existing relationship can influence the research, outcomes is yet to be explored, taking a social constructivist and an interpretive position allow the researcher to be part of the research context and understand issues therein. As mentioned earlier in this section, another major issue anticipated in advance of the fieldwork is confidentiality of both participants and their institutions. On the side of the research participants, this issue was addressed by explicitly stating in the participants' information sheet that all original names would be masked using pseudonyms such as Participant 1, 2 and so on in order not to directly link participants to data. For privacy, participants were also assured that their roles were not directly connected to the data provided. Also, highlighted in the participant information sheet is that selected participants were informed of their voluntary contribution and their rights to decline for no specific reason.

Similarly, on the side of the research organisations, confidentiality issues were addressed by taking considerable care not to use the official names of the universities rather concealed them as University 1 (U1) and so on. In the Participant Approval Sheet attached beneath the participation form, respondents can choose how to participate and specify a location for interviews. After signing the sheet, some respondents sent it back as an attachment as a demonstration of their intention and agreement to take part in the study, which the researcher also signed and sent back. The completed consent forms formed an essential aspect of the formal record of the research process. All these statements were clearly stated in the respondents' background form which was emailed to participants upon confirmation of participation, to ensure the purpose of the research was understood and to provide an opportunity to ask any questions or discuss any further area of concerns. Also, copies of these forms were attached in Appendix 11.

Further to all these, data were digitally recorded, and this was discussed with participants at the beginning of each interview. At the end of each interview, participants received a copy of the hardcopy transcript for approval prior to analysing the data.

5.7.2 Surfacing ethical issues during the research process

Though confidentiality issue has been addressed prior to the data collection process, this remains a significant ethical issue that arose while the research was underway. This ensures views and information obtained was being crucial aspects of the daily operation of the case organisations within which the researcher, research participants, and the study organisations were located. This means that acquired knowledge cannot be forgotten (Logie, 2015) and must be undertaken with great care.

This issue was observed when some participants presented their diagrams with an explicit connection to their universities such as university's name, unique initiative attributed to specific universities amongst others. I learnt that there would have been an instruction for participants to omit their universities' name and other identifiable materials. However, this was addressed by covering any identifiable item in the diagram with white paper and tape (see example 4 in Appendix 7). The issue also became apparent after sending transcripts to participants for approval when participants cautioned against the use of certain special characters that could easily identify them and their organisations. Examples of such caution messages were included in Appendix 12. As such, these observations enabled the researcher to reflect on maintaining confidential information to prevent a breach of the agreement and not to betray the trust participants have in the researcher's organisation as a place where research integrity is maintained.

The next section summarises the discussion in this chapter highlighting the emerging themes.

5.8 Summary

The paradigmatic approach to this study sits on the social constructivist ontology and interpretivism epistemology with the value placed on understanding the entrepreneurial university from multiple views. Rather than testing, this implies that the research is underpinned by constructivist ontology with the view to understanding entrepreneurial university within the HEIs context through those working within it. Then my interpretivism epistemological position places priority on the entrepreneurial university phenomenon as well as the context which therefore requires that collecting and analysing data were co-created through knowledge, shared experiences and relationships with the participants. Therefore, the study was undertaken with an in-depth case-based approach.

The research design for this study is multiple case studies because it involves 32 semi-structured exploratory interviews with 15 universities based in England and Scotland with different agenda in terms of their pre-1992 and post-1992 status as well as being research-intensive, teaching-oriented, and technological-based. Although university status and orientations were not explicit selection criteria anticipated in advance in this study, information on such categories was derived during the investigation process. This observation is a significant response to the call for comparing segments within a specific context in entrepreneurship research (Lerchenmueller, 2015).

Having discussed the methodology and methods used to gather information; the next chapter presents the research findings.

Chapter 6 Results

Since this research is a modification of the EU framework, findings herein are coherently presented in the context of the amended framework. This is essential to clearly show how the modification to Pillars 1-7 has emerged from the data. Therefore, as shown in Figure 11, this chapter is organised into four parts. The first section reports all the emerging themes on the factor side, followed by those associated with the characteristics and then those related to the impact. The last section summarises the discussion in the overall chapter.

6.1 Factor	6.2 Characteristics	6.3 Impact

6.4 Summary
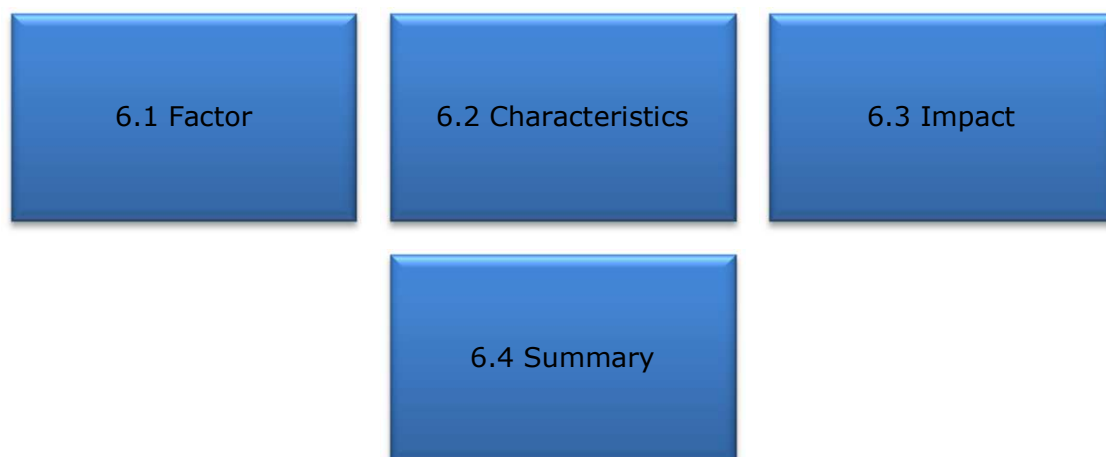
Figure 11: An overview of Chapter Six

It is important to note that Figure 11 is a layout of this chapter as a coherent organisation for presenting the findings. The analysis is inductively derived. In line with my inductive approach, interpretive epistemology and the Braun and Clarke (2006) thematic steps (see Figure 10, sub-subsection 5.5.3.2), Figure 12 below, provides a thematic map for all emerging themes in this chapter. Thus, the 'thematic' aspect is associated with a set of pre-identified codes (see Interview Guide in Appendix 6), which were then developed further by identifying, exploring and clarifying some unknown themes. Perhaps, clarification

"around the process and practice of method is substantially significant" (Braun & Clarke, 2006, p. 7).

Figure 12: NVivo screenshot of emerging themes

The lack of the clarity in the European framework is associated with its seven components in terms of the composition (factors and characteristics) and application. So, in contrast, my research extends our knowledge by clarifying these components through the identification of additional factors (including three taxonomies), characteristics (three classifications), and three typologies (fledgling, fledged, and fully-fledged) of self-defined entrepreneurial universities (see Table 12 herein).

Table 12: Defining and summarising the results

Taxonomy (factor side)	Definition	Classification (characteristics side)	Definition	Typology (impact side)	Definition
Internal determinant	Factors from inside the university	Intra-facing characteristics	The internal activities targeted at the academic community only.	Fledgling	The university low in entrepreneurial activities and uncoordinated.
Strategic determinant	Factors from both inside and outside the university	Inter-facing characteristics	The in-between activities connecting the academic community with other actors.	Fledged	The university high in entrepreneurial activities but uncoordinated.
External determinant	Factors from outside the university	Outward-facing characteristics	The externally-orientated activities targeted beyond the University's local market.	Fully-fledged	The university high in entrepreneurial activities and well-coordinated.

An in-depth analytical explanation is provided in the following paragraphs.

6.1 The factor side

Starting with the factor side, when participants were asked to map the determinants that interact to influence the development of their institutions to be more entrepreneurial, they categorically classified those factors into internal, strategic, and external. These have been evidenced in both the PVM (see Appendix 7) and interview sessions. For example, the determining factors influencing extensive concentration on spin-out were internal (e.g. bottom-up resources including biotech design school within the University), strategic (e.g. Scottish Enterprise Policies) and external (e.g. top-down incentives including funding by Scottish Government) factors.

6.1.1 Internal determinants

The internal determinants have been represented by those shaping influences from within the organisation. Underneath I have inserted some relevant quotes and literature supporting this finding. Participants defined this as "Entrepreneurship **happens internally** within the University. We have an **internal mechanism** by which they can pitch to the University for investments to support academics turn their ideas into businesses" (P1/2015). On the notion of an adaptive and flexible culture, P24 compares how the teaching-based University differs from the research-intensive institution:

"…The difference between us and larger universities is that when somebody comes to us with an idea and ask us 'do you think your University can do this?' We can probably decide within a short time whether the University can do it. This is because our structure is small, and our management team is small, and we are very open to new ideas. Whereas, if you go to the bigger universities that are associated with more people, more politics, and more committees to go through, their financial structures and procedures

216

are more rigid. So, is harder to make decisions or do things so quickly. So, adaptable and flexible are my keywords" (P24/L364-373/2016).

The above statement is in accord with Sporn's (2001) and Davies' (1987) idea of an adaptive University. Sporn (2001, p.128) asserts that "certain cultural background upon which a university originated plays a crucial role in its adaptability to changes. An adaptive University is highly flexible, efficient and effective". In the case of U2, quick decision-making, leadership, and **management structure** are shaping factors that enhance adaptation in dynamic environments.

So, referring to the importance of **leadership**, the newly appointed VC at U6 drives the enterprise agenda. There are other key individuals with enterprise responsibilities who are highly entrepreneurial themselves, said P22 including herself when identifying the drivers of entrepreneurial activities at U6: "First, I would say is me because I am a practitioner- especially, I call myself a 'let us do it person' and if you ask anybody in the Enterprise Education UK they will say the same. You need to be entrepreneurial yourself. So, it is down to the individual themselves. It is now an expected expertise in the job description anyway that you have to be highly motivated, entrepreneurial, innovative, very proactive and reactive" (P22/L258-263/2016).

When asked to identify the leaders who are influencing U7 entrepreneurial development, P23 classifies them into the academic, strategic and operational staff. He identifies: "We have **top and senior leadership** team who are obviously interested because they buy into the agenda, particularly this strategic partnership. So, when we say, individuals, we have a team who deals with all elements of the enterprise. For example, we have business development people, we have our project office and project manager who helps delivers these projects. We have a wide team that goes across with our colleagues in professional services as well as our academic colleagues. Again, it is a team effort and we do work very closely together" (P23/L148-154/2016).

The benefit associated with the identification of these key insiders driving the University's entrepreneurship is that it enhances the quality of this thesis by proving that the participants selected for interviews were appropriate and knowledgeable.

The appointment of a new VC in 2007 prompted the drive for U10 to take an entrepreneurial turn after years of been cut back in traditional routines and a lengthy page of the strategic document. His appointment was transformational in different ways: the strategy was re-visited, and the internal structure was reorganised (see Appendix 7 Example 2 and 10). While the change in leadership led to the clarity in the strategic document, it shows how responsible and responsive leaders thrive in dynamic and complex environments to pursue entrepreneurial outcomes. The participants also commented on the importance of having such an ambitious, enterprising and vision-driven leadership. For example, P3 elucidates:

"The interesting thing is that we all work together, and everybody has so much respect for him. We all recognise that he is the boss. But he is not unapproachable in any way and he listens. I mean he is good and for any institution to have such *enterprising leader* is great. There can be bottom-up but it happens quicker if it is top-down" (P3/L107-111/2015). This shows how leadership is crucial in moving the University forward toward entrepreneurialism.

Also, the adaptation process of U12 was strongly supported by a continuous circle of leadership with a positive mind to survive unpredictable challenges, P15 adds: "An entrepreneurial university also has to have strategic leaders; the Vice-Chancellor and the main management board or whatever it is. In our case, it is the University Senate Board. We have leadership that is open to new information and new ideas; prepare to take a risk aside from being supportive. Some universities tend to change over time, for example, when we were setting up the entrepreneurial stuff here we had a very entrepreneurial Vice-Chancellor who was delighted in taking the risk" (P15/L123-129/2016).

Furthermore, P20 emphasises how leaders and managers shape the development of entrepreneurial activities through incentives and initiatives: "It is very important for the

management team and management group to lead by getting the individuals involved, to be visible by coming outside and passionately deliver resources and support to pull enterprise and entrepreneurship together" (P20/L266-268/2016).

Reiteratively, the crucial role of top-level people was repeatedly highlighted and P20 summarises leadership factor as:

"There must be that buy-in from the top, particularly the University Principal. The top of the pyramid must be interested and willing to support those initiatives. I mean the top decision-makers within the organisation (University) must buy into the process, have an appetite for it and support that initiative. Otherwise, the University will not be able to effectively create an entrepreneurship ecosystem as an entrepreneurial university" (P20/L231-236/2016).

Pointing to culture as another key internal determinant is the United to 'succeed phenomenon' which was a byproduct of the idea of the Cambridge phenomenon coupled with its project-driven approach (P10/L334/2015). The Cambridge phenomenon is perceived as a substantial example of technology transfer and innovation connecting innovative local high-tech SMEs with public research (SQW, 1985, 2000). As an extraction of the Cambridge phenomenon, the United to succeed phenomenon is described as a **collaborative culture** driven through and across the institution, said P10:

"We are all connected to 'make it work' and 'make it happen'. So, it is very much the case of 'how to' rather than 'we cannot'. I think that means there is a strong culture of collegiality, a strong common theme of 'making things happen' and working closely with all our stakeholders. Whether you are a receptionist to your Professor, to your Dean, or to your Vice-Chancellor there is the 'United to Succeed Phenomenon'. It is about working in partnership, working together and to accept change positively for the benefit of businesses and society whether that is for a particular sector or generally" (P10/L38-45/2015).

Contrary to the responses on how supportive the University's culture and structure are driving entrepreneurialism, P2 argues the opposite, lamenting that:

219

"The organisational level really tries to stop people from being entrepreneurial and anything that have to do with entrepreneurial. I guess it should not but because the University is driven by different **systems, processes, and procedures**. Entrepreneurial is having entrepreneurship which I guess does not have to do with or follow rules. As such, there is a constant battle between those who look after the system and those who are driving or receiving entrepreneurial" (P2/L24-35/2015).

For U7, it adapted to environmental changes and responded to issues in the HE sectors by defining a culture that is all-inclusive, said P23. Such a culture has been contributing to its flexibility mode as a Pre-1992 institution. Like U7, participants at U9 also emphasised cultural flexibility. Using the term, 'the changed culture', P14 clarifies the importance of culture in embracing entrepreneurialism:

"I would say it is probably a **changed culture** which in the last 18 months now has been very positive with the enterprise. I think we have a renewed figure towards enterprise and it is not an adopted word anymore it is a good word and I think there is the recognition that the University must embed and embrace enterprise because that is what students are looking for to attract both nationally and globally…" (P14/L244-249/2016).

Consequently, drawing on the Schumpeterian view, participants contextualised that an entrepreneurial university is flexible, adaptable and responsive to change. An example illustrates:

"…Realises that the moment has changed and what the people require is more about X, Y, and Z, and that is how it responds rather than it is all wrapped up in a 'big bowl'. In that way, an entrepreneurial university comes out with very clean and fantastic deliverables. At the end of the day, the University will not leave those deliverables with high values because obviously, these days' people leave jobs more frequently and now what an entrepreneurial university looks at is to exceed and deliver up to customers' expectations and do that in a way that is more efficient and effective. Rather than looking for perfection, an entrepreneurial university utilises resources to do things efficiently and effectively" (P1/L217-225/2015).

220

Again, flexibility is reinforced in the above statement and this is complemented by transparency. For example, it is important for U10 to be transparent and open to provide networking opportunities: "is more of an open culture but not completely open culture…" (P4/L282-283/2015). In addition to being open, P4 comments on team, can-do and entrepreneurial culture. She expresses: "I think the culture is more than recognition but also it is more about a team culture. Yes, a can-do culture that is led by our VC. More of the entrepreneurial culture is embedded in everything…" (P3/L113-116/2015). This then provides an opportunity for insiders to develop an extensive network with the outsiders.

At U11, participants emphasised the business-like and entrepreneurial culture which they define in the context of innovation and creativity. For example, P7 and P9 describe: "I think our culture is innovative, creative, entrepreneurial, and young and we are trying to fight our way to the top of the University" (P7/L173-174/2015) and that "The University culture is very business-like, and it encourages the people" (P9/L114/2015). In the same vein as U10, U11 culture is also underpinned by engagement and experimentation "…our University is very different in many regards. In the structure part, they influence all staff, so it is an engaging culture [] behind these is going back to the culture which is a real focus on encouraging all staff to try new things and we do not punish failure" (P8/L157-183/2015).

An interesting observation with U3 is that there are both positive and negative elements associated with its cultural factor which tends to drive and distort its entrepreneurial activity. The positive critical factor is an open culture and the negative critical factor is norm issue regarding the academics being rooted in traditional routines and as such resisting the full embracement and acceptance of entrepreneurship. P18 clarifies the two differentiated cultural perspectives:

"I would say it is an open culture because on the students' side the culture is open to entrepreneurship. The students' attitude is changing towards being more entrepreneurial but on the administration or faculties' side, entrepreneurship is of interest to a minority of the faculty so most of the academics are resisting it. For example, personally, I like doing it, but I would not be expecting my colleagues or other academics to be thinking that

entrepreneurship within the University is only solving the social problems. It is broadly defined so; a minority of the faculty will think deep of accepting entrepreneurship. I think most of the faculty will have different opinions to that because of what they do and may be vanishing small set of people who do not like it for various reasons. So, I think that is becoming a norm issue. I think it is more about that in various parts of the University. There is a minority of people in the Business School and Engineering department who are very committed and interested in entrepreneurship than in the Medical School. For example, in the Medical School, there are concerned about health and caring whereas if you are in the Sciences people are worried about doing research and entrepreneurship will always be part of that" (P18/L129-144/2016).

Furthermore, some participants (P1, P8, and P15) draw on **value** as a measure to assess the withdrawal or continuity of innovation and entrepreneurial activities.

"It is also the idea of carrying on maintaining their own values and delivering those values without necessarily testing those values. So, a lot of things that they do and the way they do them that do not have the same value anymore to their customers' requirements. So, what an entrepreneurial university does as an innovative organisation is, for example, to look at those values and *discontinue* them. Here at this University, we did this five years ago, and we still carry on doing it once we realised it no longer delivers the entrepreneurial value" (P1/L210-216/2015).

"Part of being entrepreneurial is being a bit *destructive* and you know if that means upsetting the university on the road so every now and then, then do it. You are here to look after yourself and your consumers and there is a competitive edge in the marketplace and entrepreneurs love competitive edge" (P8/L282-286/2015).

These statements suggest that enterprise and entrepreneurial culture could tackle competition at different levels (regional, national and international) between higher education providers. Therefore, it is argued that innovative ideas could trigger competition and as such, P15 distinguish between two types of innovation:

"…Most innovations are incremental []. But with radical innovations, you cannot reach the new version from the old one because it is a *jump*. For example, you can make a compact disc better and better, but you will never get across to online download. Same with the record player you can always improve it. Therefore, if economic development as Schumpeter explains is based around jumps; that is, radical shift, how do you get people to come up with ideas that are not related to the way we are doing it now?" (P15/L62-69/2016).

Having emphasised the structure and culture, the importance of **financial capacity** was also recorded. For example, to complement teaching and research income, commercial activities (e.g. a group of companies' activities) at U4 secured an increase of £69,976 million from its subsidiary companies between 2014 and 2015 compared to the £63,400 million in 2013/14 (Table 13 herein). This financial capacity reflects a continuous improvement of its entrepreneurial transformation as well as the delivery of its business-facing strategy. This confirms Clark's (1998) notion that adequate finance is required to drive change.

Nevertheless, some participants clearly noted the need to get the balance right between academics and embracing entrepreneurialism. For example, from a strategist perspective:

"Obviously, we kind of get lost because we were doing this kind of outreach work. We did not have a degree programme, our research was not up to scratch, and we employed a lot of people who were not research active. So, my job was basically to clear out a lot of non-performing staff including those in the administration. For example, in the administration, we had four staff and all four of them left or made redundant or retired. Then there were a *really clear out of underperforming academics* not often because they left but because they could see that they were *not obviously fit into* where the department was heading to" (P27/L124-131/2016).

223

Table 13: Changes in U4 teaching, research, and enterprise income

Activity	Funding Source	2014/15 (£000)	2013/14 (£000)
Education/Teaching	Tuition Fee- UK/EU	100,199	82,699
	Tuition Fee- International	25,924	25,655
Total		126,123	108,354
Enterprise-related	Subsidiary Group	69,976	63,400
	HEFCE Recurrent Grants	17,251	27,307
	Other grants	2,805	2,653
	Selective Initiatives	3,660	5,099
Total		93,692	98,459
Research	Research	10,736	11,762

Source: U4's Annual Report and Financial Statements 2014/2015 (p. 54).

Crucial to the entrepreneurial development of U5 is its decentralised financial model (see Appendix 16) which P11, a strategist described as financial model structure: "We have a structure; the financial model which means that faculties keep whatever money that they earn to arrange a different sort of activities []. There must be some money pots likely to support the range of activities" (P11/L49-52/2016). Being financially independent helps a university to sustain its entrepreneurial journey. P18 testifies: "…As a University, we do have autonomy because nobody can push us too much even though the Research Council has power over the University. I think that is where we pushed up the ladder" (P18/L162-165/2016).

Speaking from another strategist position, P10 adds that "Our core business as I said is teaching and research alongside that, we have our third-stream activities, we have a consultancy, we have our third streams as well. That is our core business and we all buy

into that" (P10/L218-220/2015). These comments indicate the importance of fund diversification. Other representative examples of how third-stream income can be generated are as follows:

"We have this ethos and felicity of buying businesses and making profits then using the profits to buy more businesses. For example, at this University, we look to acquire companies that match our goals and aims and use them to generate income for us. Then we can reinvest that income to do more other things. So, rather than just sticking to education we recently bought a business [], which is a business-based and a high growth company. We bought that to generate income, we could then use that income to do something else. As a University, we are looking at how we become entrepreneurial ourselves by looking for how to use unusual streams to generate income rather than just waiting for such income to come in and get fixed into that kind of routine" (P24/L195-203/2016).

"What is more interesting is that the University is taking over Sports Centres and all these sorts of things. Some of that is about 'public good' and some of that is about could realise that there are opportunities for their students. By taking over the Sports Centre will give more chance for work placement for students to have real-life work experience opportunities. By setting it up in the right way can be a very effective place and the University is also taking what it already has put it in a different context" (P9/L296-302/2015).

"…These are kind of things you do not want to get into. You do not want to be making people redundant. But there is redundancy in the system even in Business Schools now. They keep making people redundant, they keep doing it time after time and at the end of it, those smaller Business Schools have been making people redundant" (P6/L505-510/2015).

Participants also highlighted the significance of physical factor in connection to visibility and attractiveness. Some representative interview extracts read:

225

P8 provides a typical example of the kind of universities that are in a better position to attract major grant for the possession of unusual technological facilities for substantial organisational innovativeness and creativity, exemplifying that:

"There are some universities where they are entirely engineering or somewhere they have some of the industry leaders, innovators, and certain technologies. For example, Birmingham has that, that new and strange material that they paid for and which worth trillions of pounds. So, you spin-out from Engineering, you may spin-out from Health and Applied Sciences, but you are unlikely to spin-out from Business and Management" (P8/L500-525/2015).

The University of Birmingham is a research-intensive institution, with a greater chance of acquiring and possessing unique equipment that most UK universities are not capable of. However, this is not to say the teaching-oriented institutions are less entrepreneurial-based on their sources of funding, but they tend to diversify their focus of funding to different sources, in particular, by providing physical spaces for the innovative small and medium enterprise organisations. The differences in the manner that pre-1992 and post-1992 universities responded to entrepreneurial shift are argued from the view that the latter is more inclined to small business activities than the former because "freelance and consultancy are very big for their capacity" (P22/L71-72/2016). Like this perspective, and in the context of working with SMEs, P24 provides a clear picture of what is happening in the UK:

"…In the UK, the biggest thing that comes up often and often is the space and typically there are many early-stage businesses or establishments that want to grow and get there. A lot of the UK business spaces are designed for 30 to 40 employees to come and take credits, so they can rent them rather than for businesses with less than or 10 employees. So, we do not have enough business spaces in the UK and this is the biggest area that we must focus on for development through the government policy creating more spaces where a lot of companies can occupy" (P24/L133-140/2016).

In addition, provision of space to small businesses was highly emphasised as an element of physical resources. For example, discussing his diagram, Participant 24 illustrates:

"Going further from left to right (explaining the PVM in Appendix 7 example 9), we have space. A lot of people struggle to work from home. Self-employed people struggle to work from home and they want to separate their home (social life) from work life so they need office space to do things. So, one very simple way of doing it is by going to an office to work. So, there is no more working from home. Also, most people who use the space cannot afford to rent an office that is where our innovation space project comes in to cover that gap providing space for people. So, space helps them to be productive by starting out their entrepreneurial ideas from an affordable space through to established companies and grow their businesses" (P24/L57-65/2016).

Other participants thoughtfully note that institutions must consider more than a building:

"Yes, it is making the place looks really great and very nice. But 'in the business' there are students and in pushing our employability and NSS score up, we are doing it against the backdrop of investment used to build buildings not to demonstrate to students how good the education they are getting. That is what I mean in the business and not on the business. So, we were still building buildings which seem more important things then. So, the additional costs for building buildings were not part of the narrative" (P5/L159-163/2015).

"Knowledge is a big area, but I am surprised as a University that we spend a lot of time on space more than developing the individuals for enterprising skills and knowledge" (P24/L54-57/2016).

Other participants emphasised checking thoroughly where enterprise space is placed. For example, P12 distinguish between having enterprise sits within the Business School and located separately in its own space but visible to reach all when he narrates that:

"There are new building coming up within the University for Enterprise Zone and it could be that we may end up being there in the future we do not know. But we are happy here mainly for accessibility to be perfectly honest and if we are in the Business School, remember we have all people coming from other Schools like Design and we will not just have the same present on campus as we are getting here. We will not be able to access all the facilities and services available through the Careers Centre. [] if you have it within the Business School a lot of things going on, but people have the perceptions about the Careers Centre being a place to develop a career. But say if we are based in the Business School, I do not think we will have the kind of portfolio we are getting. So, I do not think we will be in the Business School at any stage but possibly we might end up in the Enterprise Zone or Centre in two or three years' time" (P12/L238-249/2016).

P12 statements suggest that consideration is given to where entrepreneurial buildings such as incubators, innovation centres, TTOs and enterprise hubs are located regarding their visibility and how appealing they are to attract people from different groups. So, money matters and money are currently used to build buildings. However, others reinforced the issue of balance: "I think the top people thought to keep money within the people; staff or students are more important. It needs an equal weighting. We lost the balance because building became de rigueur" (P5/L152-155/2015).

Further to this, participants acknowledged the outcome and appreciated the value of providing staff with modern technologies to interact more effectively with students as one best way to become an enterprising individual. For example:

"…Now I can work anywhere. If I must keep something I have an *iPhone* and *iPad* and I can scan and send it to people. I re-organised my work and I have learnt how to be a *21st-century enterprising individual*. I think that is good because now I talk more with legitimacy or authority currency with young people who are working differently and wanting to start their own businesses and I think that is a positive aspect for me" (P5/L503-508/2015).

Another component that emerged is the motivational factor. Participants emphasised that motivational factors are important determinants for the development of an entrepreneurial university. For example, an interview discussion reveals that entrepreneurial endeavour could spread quickly across the institution by motivating and facilitating the relationship between staff and students:

"…Part of my entrepreneurial pedagogy role is connecting the two (staff and students) together and finding what can be negotiated in the relationship. Once you achieve that staff are motivated, they enjoyed teaching more and students are also motivated, they enjoyed learning more, they are empowered, and empowered students are very useful resources to have because they will be a better employee, they will be a leader and you know once you create that culture it becomes infectious" (P8/L82-88/2015).

While acknowledging that enterprise can mean different things to different individuals, P8 comments suggest that staff can still be motivated in two ways. One is that they are required to do certain things because they will be assessed. The second is that they are also rewarded with the carrots through recognition to the ways they have engaged. Likewise, in different schools, enterprise has different connotations; as such empowerment must be heartened, as highlighted by P8:

"…Actually, if you go into the School of Arts and Humanities saying we want you to be enterprising it is a turn-off but if you say I want you to be creative Wahoo now we are talking. But these are terms we will associate with and empowering staff is the main one. You have to empower the team to do these things and you can then criticise them if they try" (P8/L271-275/2015).

In a similar vein, P17 dovetail the different motivational elements driving different people as well as different faculties to be entrepreneurial:

"I think different people will get different reasons for doing it. For example, in Engineering and Science faculties, the motivation for university staff and academics to be entrepreneurial is because their research depends upon it. Though there is some pure

229

theoretical research a lot of research in Science and Engineering need data and therefore they must build a relationship with companies to do their research. In our Creative faculty that covers Arts and Architecture, Gaming and something like that, the motivation is different because a lot of their students start their own businesses when they graduate because there is nothing in the job market. So, a lot of them start their own businesses and something like that. So, the motivation there is not for their research is to help their students by teaching it" (P17/L67-76/2016).

As a strategist, P6 explains how motivational factors are incorporated into the research agenda at the school level to encourage people to think creatively by publishing their innovative ideas. He narrates:

"I introduced an idea to encourage people to publish in good journals using the ABS list and from the 'Points-Mean-Pounds Scheme' they get about £250 per point if they get their papers accepted in journals using the ABS list. So, if my papers were accepted with the one I sent in last night that will be £750 for me to use on research-related spend, not going into my pocket. That then give people little pots and they can start saying, I could do this I could do that, I have a good student to work with who could help me with my data analysis for a couple of weeks. Again, it gets people to think about how they can use it. [] That is just the School thing I put in. It is quite nice to talk about it because what motivates a lot of academic work is incentives, who have real scholarly agenda, real pedagogical agenda and maybe researching agenda as well and to motivate academics are incentives to give them more work. [] at the school level, the Point-Mean-Pounds Scheme is one which is about incentivising. It is about incentives." (P6/L664-665/2015).

Given that enterprise impact is an integral aspect of research when we consider research impact in terms of what is REFable, then having an incentive system in place that encourages people to perceive research as an act of entrepreneurialism is not inappropriate. In support of this view, P3 postulates that: "…Our strategy for this University, the research strategy is about using inspired research with impacts which are informed by external demands". Consequently, this could, in turn, generate spin-out or commercialise activities.

230

As such, this suggests that teaching, research and enterprise missions and/or strategies are complementary.

6.1.2 External determinants

As defined in Table 12, those determinants affecting the organisation from outside are represented by external factors. Participants' examples explain "…There are several reasons such as **external factors** like political issues, economic drivers but again I think a lot of it comes down to competition" (P7/2015). The external funding as a crucial factor is expressed as the alumni-driven approach shaping U9's funding model in terms of receiving donation support for enterprise activities through local business people, the majority of whom are past students. All participants commented on external funds as expressed by the following interview extracts: "…A lot of funding does come through the **Alumni Donations**" (P12/L122-123/2016).

"…We have significant donations coming in every year and what one or two people have done recently was that they provided resources, money for these activities but also importantly it shows senior management that our alumni are prepared to give us money which is not always done so easily. So, it is up to the senior management to see that this is a good thing to be doing. So, it has two effects: we have done co-operation and we have done alumni engagement" (P13/L78-83/2016).

"One of the big differences is that we are unique in terms of the Alumni Funding. We know all other universities have gone for HEIF, HEFCE, some European or ERDF funding and for that to come by, they give huge problems. So, this University made the decision about six or seven years ago, to rely on alumni for funding. So, we do not rely on HEIF or HEFCE funding. As such, our funding is alumni-given" (P14/L144-148/2016).

The government is aware of the difficulties regional universities encounter in contributing to the innovation system of the regional economy and provided significant funding to support their knowledge exchange activities. For example, by total HEIF-HEFCE

231

funding, U1 and U9 are among the universities that receive the largest amount of funding as evidenced in Appendix 17.

As shown in Table 62 (Appendix 21), the HEIF allocation influences the financial strategy adopted by the institutions. For example, U1's funding-oriented approach was described in terms of the University's high concentration of the HEIF money. While participants acknowledged that external funding is in various forms, it is important to understand what and how they are being used. P28 exemplifies "...we are doing very well both in terms of grant funding but also in terms of commercial funding as well" (P28/L38-40/2016).

However, funding cut by the UK government is another factor pushing universities towards entrepreneurialism. For example, the VC at U11 laments by stating that "the squeeze on funding streams from the UK government triggered the need for HEIs to be more innovative and enterprising organisations like ours" (University Website, 2015). This means that having an innovative and enterprising culture is crucial to sustaining the funding issues in the sector. Thus, culture is significantly important in the entrepreneurial ecosystems (Mason & Brown, 2014).

Another factor emphasised by the participants is an entrepreneurial opportunity. The extent to which the universities identify opportunities is influenced by their understanding and awareness of issues around them. For example, given that U12 is a pre-1992 institution rooted in the traditional way of delivering teaching and researching, being opportunity-aware and openness to taking initiatives (see Appendix 20) has helped the University to embrace changes in the HE sectors. In addition to this, P15 asserts that U12 is entrepreneurial because of:

"...Being very **opportunity-aware**; being aware of the changing conditions in the environment we are operating and the opportunities that come up consequently. The less entrepreneurial a university is the less they are aware of the opportunity and the less they embrace change and as such try to resist change. So, an entrepreneurial university will have great opportunity recognition and capabilities. There is a tension

232

between maintaining quality assurance of higher education and open to change at a very short notice, which is what an entrepreneurial university implies" (P15/L116-123/2016).

Adding to the importance of opportunity identification, it is important to pursue them: "…not just about identifying them. It involves pursuing opportunities beyond the resources currently available. So, we are not just bonded by the resources that we have" (P26/L93-95/2016). Having acknowledged this, P28 explains how opportunity is created by a university, outlining that:

"It is a fast-moving and an *opportunity-driven institution* that does not have too much bureaucracy and it is interested in linking up primary research with government and industry as well as private sector. It has clear support for entrepreneurial activities. For example, one of the things that U15 has which is the biggest and very important is that academics are encouraged to commercialise with industry staff whether that is advisory or whatever that is. So, you must align with certain systems to have that sort of activities and put mechanisms in place that encourage that alignment with teaching and research activities" (P28/L61-69/2016).

Apart from the explanation of the importance of entrepreneurial opportunity, the last sentence in the above statements suggests that teaching, research, and enterprise activities complement one another based on the need for their alignment.

National objectives including HEFCE requirements, impact objectives and expectations are driving universities' entrepreneurial agenda. From a strategist point of view, P3 discusses how national agenda have a significant impact on research agenda which in turn often (not always) generates innovation-led activities. She discloses:

"…The regional engagement strategy is under research strategy- the research impact because of all the time nowadays you got to make sure if you do research it is clear you can actually articulate what the impact of that research will be. So, you are creating new knowledge; how is that new knowledge going to be used, how do you monitor that and how does that go forward? More and more, the government wanted to see the impact statements of the research" (P3/L180-186/2015).

233

The statement 'government wanting to see impact statements of the research' is an indication that universities take into consideration government expectations to meet societal needs. As such, this becomes a major influence on what is being put in place to respond to the policy imperative 'to become more entrepreneurial' and this is done through research, teaching, and third-leg activities. From the same stance, and on the enterprise side, P9 provides a realistic example, stating that: "…with the social enterprise, the reason for setting up a business is about trying to solve a social problem" (P9/L504-505/2015). This suggests that an entrepreneurial response is an expected role of universities' contribution to the growth of their countries. On the side of teaching, P29 and P30 comment on what the perceived consequences of the forthcoming TEF could be:

"I think it will be driving a lot of the agenda going forward in terms of teaching quality and obviously have an impact on fees and things like that. It will obviously be a key driver to how enterprise and entrepreneurship aligned to teaching excellent framework as part of that. It will be key to how the University takes enterprise going forward" (P29/L312-316/2016).

"…To my knowledge, one of the key measures of the TEF is employability, probably that include using the DLHE (Destination of Leavers of the Higher Education Survey) in terms of having some higher skills components that have not been classified yet, we have to do that" (P30/L115-118/2016).

From the research side, P30 comments further on how the government has used the control tool widely known as REF as a way for requiring universities to become enterprising:

"Research, as I mentioned, is critical to the enterprise agenda. I spent some of my career outside the University working with companies and in other places. For example, if you have a company you want to work with the University and academics within the University because of their research and as a university, if you do not have good research, it will be very difficult to have any impacts and engagement with companies. In terms of the REF, its impact agenda is driven by enterprise and economic impact" (P30/L94-100/2016).

234

While **government expectations** on universities' roles in contributing to the technology-driven economy are harnessed by measures such as REF, U3 is highly responsive more than others in its institutional category through its entrepreneurship activities, resulting in an increased entrepreneurial impact. From P18's perspective, some insights were provided as to 'what' the government expect of them and 'how' U3 has dealt with it:

"For example, in the Sciences, the Research Council is looking for the application of research. So, all the time the departments are looking at this and the doctoral programmes. I think the Doctoral Research Centre now has been asking for skills development of doctoral students towards employability and that is bringing in an element of business and within that is entrepreneurship techniques. On our side of the Research Council, in the social sciences within the Business School, they are also increasing the weight given to impact measures in the way funding is allocated through the REF which is putting increasing weight on impact. Entrepreneurship is an obvious area through which we can engage, and we do have an impact on entrepreneurial activities" (P18/L48-57/2016). The official UK-wide assessment REF 2014 result confirms this as the University was ranked number one for its research quality with 48 percent of the University's research rated 4* and 39 percent rated 3* of the total submission of 2409 (University Website, 2014).

Geographical factors in terms of physical location emerged as a critical determinant that shapes the entrepreneurial transformation of a university. This factor describes how the environment within which a university is located affects its entrepreneurial activities including collaboration and relationship type (such as SME or large organisation engagement, local or international collaboration). This, in turn, has an impact on the level of competition among universities, employability for students and graduates and the entrepreneurial ecosystem. For example, P6, P29, P30 and P31 explain:

"You know most of your relationships unless you are an Oxford or London Business School if you are in the provinces and you are not up there you know in Leeds most of your relationships with companies if not in the Head Quarters it is operating 50 miles away.

235

Particularly, there are lots of universities around here, so they operate within at least 25 miles. So, if they are not resource-rich and willing to pay, they are kind of restricting what we can do" (P6/L637-642/2015).

The statement that "if they are not resource-rich and willing to pay" suggests that the resource level including the financial capability of the business organisations within the vicinity of U10 impact on the kind of entrepreneurial activity that the University put in place in terms of working with businesses. Likewise, P29, P30, and P31 from U13 commented on how their institution was influenced by the types of organisations that reside in their vicinity.

"The far South West has very few big employers, so the economy is driven by SMEs, particularly small and micro-sized firms. There are constraints in terms of entrepreneurial opportunities in such a peripheral region and Cornwall (where many of our students come from) is a low wage area. Many students must move away to find job opportunities. But there are sector specific strengths e.g. healthcare industries, marine industries. So, these things do shape the focus of activities" (P29/L426-431/2016).

"The other thing that informs our enterprise agenda and entrepreneurial activities is the geographical position. For example, we are situated in a very small geographical area of the United Kingdom, and that means that the number of companies, the types of companies, the knowledge intensiveness of companies that are located near the University are much smaller and much lower in value than it would be for a university located in London, Cambridge or Oxford or Manchester or Edinburgh. The smaller a company is the greater the difficulty to engage with other organisations in its local environment. So, that makes a real difference because it means that it is more difficult for us to engage with companies locally because there are fewer companies that need university's services because they are not knowledge intensive. Therefore, if we are trying to engage with companies in other parts of the country or internationally you are not seen as a local university. Therefore, we are competing with local universities as well as other universities

trying to get on the edge. So, that has a bearing on the way you approach enterprise in a university" (P30/L78-91/2016).

"The location of U13, in the City Centre of Plymouth and in the heart of the South West is ideal as the South West has a large population of SMEs due to its location" (P31/L388-390/2016). From a competition perspective, P8 expounds on how geographical location is a key element upon which universities compete to become more entrepreneurial:

"Different universities have different things. Some universities have strengths in recruitment, if you look at Birmingham for example; you have five universities in a very close geographical area. Now two of those will recruit on extremely very strong reputation and so students come from far and wide. Another two of those have a very local market so they are directly targeting local colleges and local recruitments and their students tend to be local, you know they have vocational programmes, students want to still live at home or still want to travel within their geographical area, some places and others have specialists. So, some places are geographical competitiveness. [] We are responsible for almost 40% of all CPD in West Midlands and we have Birmingham, the Aston, the Warwick but 40% of all businesses that want to train their staff up to the university level come to our University. So, we compete in different ways and we have different strengths and different weaknesses" (P8/L356-364/2015).

Further to the importance of the **geographical factors**, participants acknowledged that the location of U4 is considered suitable for business attraction. For example, P5 expresses: "We are not in the major city and I would not use the word easy, but it is easier. We are 19 miles North of London and we are 20 miles West of Cambridge. Our region itself as a County is 10 medium-size towns and cities. [] In terms of building economies of scale, it is all very self-fulfilling" (P5/L67-75/2015).

Another vital example is the location of U6 near the Beatles and Blackpool Pleasure Beach. This suggests that the region is a hub for business attraction. The region constitutes five counties including Cheshire, Cumbria, Great Manchester, Lancashire, and Merseyside. With a total population of 7,052,000 in 2011 (ONS, 2013), the region is one of the major

237

inhabited in Britain following South East and Greater London. Participants' perception of the U13's location is that it is in a low knowledge-intensive region where there are very few big employers with the majority being SMEs. Thus, "there are constraints in terms of entrepreneurial opportunities in such a peripheral region", said P29 (L429-430/2016).

Further to this, P30 compare universities in low and high knowledge-intensive area, exemplifying that: "…. if you are University College London, there is much going on for employment and there is a tendency that your students can get a graduate-level job easily at the end. I suspect that because we are a local University and if you have students coming from a local area it is difficult for them to get onto graduate-level jobs" (P30/L178-182/2016). This suggests one of the reasons why U13 focuses more on student entrepreneurship and start-up activities than a spin-off or academic entrepreneurship. Thus, the geographical concentration of similar organisations in the same region suggests the advantage of a localised knowledge spill over and universities like UI, U4, and U13 play an important role of localised knowledge actors in such environment as research institutions. Consequently, business and research organisations enjoy access to knowledge spilling over from one another (Oftedal & Foss, 2015; Ponds et al., 2010).

Further to this, the emphasis is also placed on raising awareness in terms of how a university is seen by others. For example, for U5, its business-facing approach led to the University been named as Higher Education Social Entrepreneurship Partner in August 2012 for UnLtd and HEFCE higher education support initiative. Such recognition expresses it **corporate brand awareness**. Therefore, recognising a university in this manner demonstrates its innovative nature and the desire to continuously adapt and respond to the increasingly ever-changing context.

In the same vein, as a regional actor contributing to fostering the Yorkshire and Humberside entrepreneurial ecosystem, U9 was recognised for its entrepreneurial contributions by winning THE EUYA most recently. Participants commented on how important it is to receive this prestigious Award. For example, P14 said:

238

"…Especially, it is a cool thing to have as a Russell Group University because Russell Group universities are not always known for being entrepreneurial. Five, six to seven years ago, the 'enterprise' term was not an adapted word in universities, especially in Russell Groups. Nowadays, things have totally changed we must be enterprising; we must be entrepreneurial just like every other university out there. These include enterprise for staff and the opportunities for them, Enterprise for students and graduates and the opportunities for them. Though it does not have to be complacent but be recognised as an entrepreneurial university is therefore important for universities" (P14/L87-95/2016).

Consistently, for the 2017 student satisfaction survey, the University is one of the top five universities (Bradford, Hull, Leeds, Sheffield, and York) measured on students' satisfaction and entry standards (The Complete University Guide, 2017).

Participants recognised that the importance of being tagged as entrepreneurial brings about other achievements. For example, at U12, P15 states that: "We are one of the first to win the Times Higher Education Award, one of the biggest in terms of our coverage and in terms of our staff dedicated to the Entrepreneurship Group. [] We won the Midlands Entrepreneurial University of the Year at the same time of the same year" (P15/L59-98/2016).

For further clarity, participants reinforce how the creation of a corporate brand publicises what U14 stands for. In recognition of the University's support for and provision of innovative programmes for students and researchers, U14 consecutively won two THE awards in the same year. First, it won Times Higher Education Award for Outstanding Support for Early Career Researchers, then the Times Higher Education University of the Year. In later years, it was awarded the Times Higher Education Entrepreneurial University of the Year. In 2014, U14 was ranked 2nd in Scotland and 9th in the UK by the Times Higher Education Supplement for Research Intensity. These prestigious titles reflect its corporate status as a leading international technological University and a reputation for flexible and innovative learning.

P20 comments on making a successful winning application for the Awards through network opportunity: "I would say we have a considerable effort across the key stakeholders in terms of the panels I had mentioned earlier (the **Enterprise Forum**, **Scottish Institute**, our **Enterprise Network**). They provided the guidance in shaping what contents we put into submitting the application. The key is that we have the right people in the room; the most up to date and the prominent information to bring forward the application as well as accurate statistics. This includes information like if there has been a big event or things we have done in the UK in terms of company creation that type of information must come out a bid to become an entrepreneurial university. So, we have those people who have that knowledge, who have that understanding to identify what information should be used. So, we have key stakeholders who guided that Forum for making the decision and what information to be included" (P20/L253-263/2016).

Shedding light on how U7 has managed to sustain the changes in the HE business context through entrepreneurial networking, P23 explains: "I would describe us as an entrepreneurial university because historically we have great **links** with many different sectors and industries. So, we have a very deep knowledge of engineering and mechanical engineering and we have certainly grown in that. So, what I would suggest is that in as much as we are not a Russell Group university- we are not research excellence. We have more of a practical approach which is more appealing to small-medium enterprises and large companies looking for a specialist. Because we are used to dealing with those groups they also have an easier interface into the University" (P23/L96-103/2016). Seizing this special area as a great opportunity, the University won the 2014 Outstanding Contribution to Innovation and Technology Award for pioneering research into new aerosol spray technology through its Petroleum and Spray Research Group.

In the same vein, is that of U10 when participants comment on how important networking foster entrepreneurial development, P3 remarks: "…network is really important because the network is about power and influence, so, quite often to make the vision happen you must have the networks to champion it; whether externally or internally by

advocating for what you are doing. So, you must not underestimate the power of your influential networks" (P3/L215-218/2015).

Having emphasised the importance of external (e.g. networking, corporate brand awareness, and geographical factors) and internal (e.g. leadership, culture, and financial capacity) determinants, the next paragraphs present and discuss the data associated with the strategic determinants.

6.1.3 Strategic determinants

The strategic determinants are the strategic reactions including organisational and national objectives devised in pursuit of social and economic development. Participants explanation express "…the University strategy- if you look at pretty much any universities' **strategic document** or look at their websites you will probably find enterprise as a core element of that" (P7/2015). "From the strategic perspective, there are strong indicators that there are expectations that we will engage significantly with industry and research" (P32/2016).

Participants repeatedly highlighted the importance of strategy in the context of the corporate plan in terms of the message it conveys and how clear it is to be understood by everyone. Some representative examples are as follows:

"…The strategy map of the University. I think they are focusing on things like inspiring, innovative, international those are all important to being entrepreneurial. [] they do focus on applying it and they do some sort of activities around it…" (P4/L266-268/2015).

"…It is about making sure that the School develops strategically and very much in the context of the University's strategy map. [] I think we get things done compared to other HEIs, compared to some businesses as they do things so slowly. But we have made a lot of changes, we get on with a lot of things and I contrast that with some places I have seen where for example, their planning documents or their strategic documents go on for pages, but they do not communicate the outcomes they are aiming for. I have seen school plan and strategic documents that are that thick like the old planning document that the

241

University used to send to Funding Councils years ago and it was full pages" (P6/L222-228/2015).

"…One of the things a lot of people have commented on is the clarity of the vision and the strategy that is within the University for What We Have Been Trying to achieve. As I mentioned before, it is the importance of our corporate plan which is not just a book or a document that sits on the shelf, but it is used a lot in terms of measuring targets and in terms of ensuring that we are progressing in the way that we want. I think the vision, the strategy, and sort of understanding of the direction for the whole University are important" (P11/L65-71/2016). The direct quotations suggest the need for universities' strategy plans to be well communicated and simplified for everyone to understand and can contribute entrepreneurially. P30 rounds up the discussion on organisational objectives and reputational strategic factors, concluding that "there is a need for clear strategy and vision to become an enterprising university. So, these are the main factors" (P30/L243-244/2016).

The entrepreneurial resonate portrayed by U2 was underpinned by its **research and innovation strategy**. The University's five years' research and innovation strategy for 2015-2020 target the pursuit of bold and creative ideas to drive economic growth through internationally significant research and innovation activity (University Website, 2015). The creation of a research and innovation strategy enables the University to establish collaborative partners, the source for alternative funding opportunities, create and test new ideas.

In responding to the policy imperative 'becoming more entrepreneurial', U3 puts forth innovation by integrating its research mission with an innovation image thereby prompting a upheave of a continuous entrepreneurial transformation implementing the elements of an innovation ecosystem (Appendix 20). Such incremental adaptation is quite unusual for a research-intensive University rooted in historical tradition. For example, a quote explains "The [] challenge is that you want to do things outside of teaching and researching then there is an issue of flexibility if you want to do things within the

242

curriculum. You are entering the complexity of the University administration that has many rules. Then the great challenge is that entrepreneurship is meant to be thought with experiential components and the British universities are not used to that method of teaching. They are mostly used to traditional exam-based mentality and ways of delivering courses" (P18/L110-116/2016).

For U4, it has developed a reputation for entrepreneurialism within the UK higher education sector as a leading business-facing institution with an explicit innovative and enterprising approach and an exemplar in the sector. This aspiration is reflected in its vision and has been formally acknowledged by the UK Quality Assurance Agency prior to the University winning the national Entrepreneurial Award, stating that: "In 2012, the U4 **vision** was to be a modern institution through its outreach interaction with local and regional industry as well as overseas partnership, thereby transforming the potential future of the academic community. In turn, this led to the advancement of the region" (QAA, 2009, p. 5).

In addition to this, U4 took the strategic decision to integrate careers with the enterprise. This strategic stance is to ensure that the ideas of self-employment or start-up were given to students as legitimate and possible outcomes during or through their studies, said P5 (L84-84/2016). As a result, U4 has responded to the call by Vitae in ensuring that researchers are supported in their career development (Vitae, 2008).

As part of its contribution to the Concordat, in 2010, U4 launched a publication entitled '*valuing research staff*' to illustrate its commitment (U4, 2010). The publication carries the **career development arm** of the University towards its research community, adopting 'no one size fits all approach' which sets out career development strategy illustrating how the University's systems, structure, and development opportunities support this group. However, recognising the changes in the wider business and higher education environment, U5 maintained a strategic position that integrates research with enterprise (Appendix 20).

At U6, it leadership clan was complemented by an innovation and enterprise strategy integrated with research. This innovation and enterprise strategy secured U6's ability to be

243

more responsive and adaptive to the current situation. This strategic effort was further enhanced by adopting the Allan Gibb Model; that is, U6 placed more focus on students' enterprise and entrepreneurship than on any other entrepreneurial activities. P22 acknowledges stating that:

"I think we are an early starter and one of the reasons why I came here in the first place was because there was this **obvious intention** to be more entrepreneurial. I think a lot of other universities have caught up quickly and gone ahead of us and we are slightly behind, but we are moving towards it. I think we kind of get stuck more with students' enterprise and there is a lot of more work to do. However, we are beginning to do more on intellectual property and linking research to all sort of other things. Again, it is the high-level intention and it is in our strategy" (P22/L323-329/2016).

U6 opportunity-driven approach allows the University to recognise opportunities and capitalise on those opportunities to use "enterprise and entrepreneurship to add value to employability through education and support to help people become more employable", said P22 (L275-279/2016).

An important differentiating factor that has been increasingly pushing U7 towards being more entrepreneurial is its internal oriented approach described as 'focused, inclusive, simplified and clarified', said P23. To continue to maintain its inclusive culture, U7 puts forth an integrated strategy by linking research with the enterprise. P23 describe this in two ways: "…First, is that we are definitely persistent. Second, we have clarity of our work and we are very clear on how to do that. We also have an integrated approach as well as our team effort" (P23/L91-93/2016).

U8's motto 'scientific knowledge is the rescuer of the empire' found in every document is a symbol of its external engagement and how it is reaching out widely. This suggests that the University integrates diversity into its mission. Clearly written in the 2015-2020 strategy map, the University mission is to achieve excellence in research and education through science, engineering, medicine, and business that is beneficial to the society (ICL, 2015). This mission was backed up by the research and innovation strategy.

Further to this, in responding to changes in the sector, the University claims to be utilising a **deterministic and top-down approach**. Top-down transformational mechanism from the central organisation (e.g. leaders within used their resources to seek new opportunities externally such as bringing in companies to work with the University) and the determined actions (e.g. the top leaders have the freedom and autonomy to define the University's overall entrepreneurial approach) to switch from being a Pre-1992 University rooted in tradition and routine to a modern 21st -century institution secured U8's ability to be responsive to the policy imperative 'becoming more entrepreneurial'.

Unlike most UK universities where the enterprise is integrated with careers, U1 took the decision to integrate research with the enterprise. Adopting the format of the former tends to align focus more on students and graduates only while the format of the latter extends beyond this to encompass the coverage of both the academic community and the industrial community. P21 confirms that "that way we can attract and move into different faculties but if it is in one faculty it is unlikely that you get people to talk to you" (L219-221).

Another example of a strategic determinant is that of U9 which entrepreneurial transformation was triggered by its enterprise strategy which was integrated with research and innovation. P12 expresses "…Moving forward for whatever reasons as I do not know what it was, increasingly, enterprise become more and more on the **agenda**. That I would say started from about 2011 onwards when the number started to increase as at that time" (P12/L15-17/2016). U9 is one of the first self-defined entrepreneurial universities to incorporate enterprise, innovation and research agenda together as shown in Figure 32. P14 describes how important it is for U9 to have this done in this way:

"The key things are that everybody has one voice by talking and taking the same direction as Enterprise sets out as one of the University's seven **strategic pillars** as we call them. The Enterprise Strategy is a great thing to have alongside research and innovation" (P14/L108-111/2016). In addition, U9's alumni-driven approach and engaging culture are

245

supporting its strength to be adaptive and responsive as a pre-1992 institution to the call 'becoming more entrepreneurial'.

U10 leadership mix was strongly supported through action-oriented, initiative-taking and target setting approach by integrating research with the enterprise (Appendix 20 Figure 38). Currently, the University is going through devising its **regional engagement strategy** to complement research and enterprise strategy. P3 accounts:

"I am in the middle of writing regional engagement strategy to align our strategy and position ourselves. So, we can extract maximum benefits out of the regional agenda. Because the ways they are devolved, and the economy are going in the UK, the agenda could have much more power like something called the Northern Power House. We then need to be ready to exploit the Northern House and regional agenda" (P3/L173-179/2015).

This is one of the first self-defined entrepreneurial universities to have this externally driven mission unified with research and enterprise. Increasingly, the growing need for the University to continuously be entrepreneurial by its peers led the strategic board to consider going for the ASHOKA accreditation.

"We are considering trying to go for ASHOKA status which will be a massive strategic initiative" (P3/L311-312/2015). This will allow the University to put in initiatives that can support the social business development and solve social world problem more strategically. As a result, U10 will be embedding a social enterprise culture across the whole campus.

Taking a different strategic approach, U11 incorporated the niche-oriented, resource-seeking and stakeholder approach (see Appendix 20 Figure 39) into its mission to help deliver its organisational purpose. These enabling factors are widely spread across the institution and as such U11 is fully autonomous based on its resource-seeking capability via the stakeholders. Further to this, U11 integrates Careers Services with enterprise strategy by placing employability and enterprise agenda at the core of the University:

"…The University took the **strategic decision** in 2006 which was when the student enterprise agenda started and the decision by the Vice-Chancellor then was that Entrepreneurship should be a Central Service. So, it should not belong to a faculty, it should

246

not belong to the Technology Park, it should be a Central Service. Physically, the enterprise has moved to various places. We send everything to the Central to do and it is fruitful because you have those who found you accidentally; people who say, 'what does that mean'? Or say we have a stand promoting and that can just entice people who had not thought about it. If you place it on the 5th floor of a horrible building nobody is going to find you. So, you know it is important that you are in people's face. So, it is a nice place to be and it is social, not academic" (P8/L5-21/2015).

The last sentence indicates the importance of making an appropriate decision about where enterprise should be placed. The above statement suggests that the arrangement was for two reasons. First, to enable U11 focuses more on students' business start-ups than spin-off activities. Indeed, this achievement was recognised as U11 was ranked top 10 for this activity: "Apparently, we are in the top 10 for the students' business start-ups in the UK" (P9/L115/2015). Second, for enterprise not to be placed within one restricted area or limited to certain people rather made available for all and visible to everyone as a central service.

Further to this, HEFCE acknowledges that the University's strategy was well aligned with that of its key regional partners. U11 was praised for its HEIF 4 strategy for adopting an innovative approach to managing and developing strategic partnerships through its "**Partnership Stairway Model**" including its ambitious goal-setting which has been developed following close consultation with its strategic partners (HEFCE, 2008, p. 4).

In comparison to U10 where most of its entrepreneurial initiatives are top-down driven by the senior leaders and managers, U11 are bottom-up driven by students and staff initiatives. P8 clarifies that: "…They [staff] are sharing their own best practices rather than being a top-down it is coming from within" (P8/L141-142/2015).

Like U11, U13 adopts a similar strategy but the bottom-up and top-down approaches are applied in different ways. In describing how U13 has managed to respond to becoming more entrepreneurial, P29 explains the bottom-up approach to show the relationship between leadership, strategy, and culture:

247

"…The university leadership was keen to embed enterprise agenda at the grassroots and this was done using a **bottom-up approach** to recruiting people who are self-selected and have a strong interest in the enterprise. These people were termed as **enterprise enablers**. We have approximately 50 or 60 of these people across the University in each faculty and key centres undertaking varieties of roles. Their role is to see how the enterprise agenda could be position within a particular area and to share good practice across the institution…" (P29/L108-115/2016).

This suggests that U13 demonstrates initiative and resourcefulness taking an entrepreneurial action approach which some participants defined as 'multiple approaches'. P31 clarifies the meaning of taking multiple approaches: "It means that we take a lot of influences from different places. For example, in terms of what influences our programmes, the Babson College, and their entrepreneurial action approach influence us. Then we have the general enterprise and entrepreneurship education environment in the UK which is quite popular in terms of what influences employability and them what we do in terms of market research for students' demand as well. So, this is how we define what we mean by the multiple approaches that we take" (P31/L38-44/2016).

Then giving a typical example of what it means to take a collegiate approach, P30 states: "By collegiate, I mean working together with external partners" (P30/L67-68/2016).

In complementary to all these, U13 aligns social enterprise strategy with the University's wide enterprise, innovation and research agenda as shown in Figure 41 (Appendix 20). P29 reinforces that "In terms of accepting change and embracing opportunities, there is a kind of switch in direction. So, it is a mixture of top-down and bottom-up approach" (P29/L86-88/2016). Having a clear sense of itself, the University's mission 'A place of useful learning' unfold as innovative, international and open culture which allows U14 to embrace change. U14 continuously evolved on this legacy and ethos by integrating SME strategy with research and innovation agenda (see Appendix 20 Figure 42).

With an emphasis on the notion of contingency, P28 repeatedly mentioned that both top-down (e.g. Scottish government-led) and bottom-up (e.g. university-driven)

approaches are beneficial to entrepreneurial initiatives. He precisely summarises: "It varies depending on the type and packet of entrepreneurial activities. Given that a lot of these are kind of organic, some of them are having a bit of commercialisation work which is partly supported by the University and the biotech, for example, is partly supported by the government. Also, I think that having cross-disciplinary research, as well as good research, are important and U15 is a research-intensive University" (P28/L34-38/2016).

It becomes apparent that all the universities embedded and enmeshed enterprise-related strategy in their wide-university agendas. However, while these self-defined entrepreneurial universities are customer-oriented and client-focused, they have distinctive approaches towards becoming entrepreneurial as shown in Appendix 19. The UHR (2012, p. 10) reported that key market differentiators involve "quick decision-making, promptness to act, the ability to deliver successfully, empowerment, and constant learning". Participants' connotations of the key market differentiators underpinning the entrepreneurial responses of their respective universities (selected cases) are captured and tabulated. As displayed in Appendix 19, this research captures how entrepreneurial universities integrate their strategies in the complementary pursuit of the teaching, research, and entrepreneurial goals. Therefore, in contrast to the European guiding framework, this thesis captures the emerging strategic issues and challenges of entrepreneurially bound universities through the identification of their strategic arrangements.

6.1.4 Link between the shaping determinants

In addition, the approaches outlined above describe and reflect on the cultural changes within the self-selected entrepreneurial universities and the strategy underpinning how their entrepreneurial initiatives have evolved. This suggests that there is a connection between the determinants. Participants commented on the relationship between having an entrepreneurial culture and student attraction. For example, P5 explains how this connection is shaping the entrepreneurial edge of U12 in the sector:

"This is important because you are going to be fighting for the best researchers. You know if you go back 15 years we are much more a selection University as many more students want to come here. So, we have about 13 to 14 students applying for every place. So, we decided and selected whether certain students will be able to come to the University. The situation now for all universities is completely different as we are constantly fighting for students and if you are trying to attract students you got to be *more opportunity aware* and we are very complacent. U12 has more applicants per place than any other universities in the UK. So, we were very complacent we did not think we had to impress them to attract them in. That realisation has come in and that was also driven by a more *entrepreneurial culture* and people had to be much more aware of it and from outside this affect students' choices" (P15/L225-236/2016).

Consequently, the three determinant dimensions identified in the data are significant to the study as they formed the basis for the taxonomy of factors of the entrepreneurial university as depicted in Figure 14 (Chapter Seven) with the double arrow showing that these dimensions have an influence on one another, as agreed by the participants. Another example of this is expounded:

"…It is like a chain and every factor depends on the other. But some might be more important to the organisational culture. The organisational culture is the most and the pedagogies, the strategies are of course more important than the buildings. [] the organisational culture, the strategy and the aims all that play major roles because even if you are not very enterprising and you go to a university that has that entrepreneurial culture it might motivate you in a way" (P4/L154-161/2015). This is how the culture relates to strategy

Therefore, if there is an issue with one aspect the others will be affected and vice-versa. Another example explains the relationship between strategy and leadership factors: "I would not say we were ambitious, we were not, and it was not until the first strategy map 2008-2013. But we had, and I think both at the University level and school level of ambition. That is one of the values that inspire the first one, the strategy map. I think that

is a big change here and that is how and part of why we have become a more entrepreneurial university to use your term. I think the Vice-Chancellor is *ambitious*" (P6/L186-192/2015).

Having identified and displayed the key factors and established a three-dimensional taxonomy of factors influencing the development of a university in becoming more entrepreneurial, it was observed that participants placed more emphasis on some factors than the others. As such, to illustrate the extent to which these different factors affect the entrepreneurial development of an institution; Figure 13 was used to virtualise the main determinant factors showing their different response rates in percentages. However, the numbers (percentages) are not done deductively and do not represent a deductive analysis. They only show the depth of consensus regarding the discussion of the key determinants. Further to this, the use of chart in this qualitative research is to focus on key findings by reducing less relevant data.

National Objectives 18.91%

Motivational Factors 19.40%

Making contacts & Networking 19.83%

Entrepreneurial Opportunity Exploitation & Exploration 27.62%

Physical Resources 41.00%

Funding & Government Expectation 46.15%

Individual Qualities & Capabilities 47.73%

Organisational Culture & Attitude 56.08%

Financial Capacity 58.42%

Brand Awareness 61.96%

Organisational Strategy 62.00%

Leadership, Management & Governance 97.09%

Figure 13: Responses showing a degree of emphasis on key determinants

Figure 13 denotes that the **leadership, management, and governance** (LMG) node receives the strongest emphasis. This node focuses on what it takes to leading and managing a university in a time of austerity where multiple objectives are expected to be accomplished concurrently, particularly, in a globally competitive business environment. This node is characterised by the 'buy-in' orientation of university leaders and managers,

252

and their support for the experimentation of innovative ideas. With this greatest emphasis on LMG, universities are being encouraged to look closely at the collegiality of making decisions and how accessible their management structures are open to people by reaching out in terms of communication to and engagement with all organisational hierarchies. This is of significance because some participants acknowledged that it is daunting to manage complex and diverse organisations like the universities where academics do their own things in their own ways. For example, P29 comments that:

"If you speak to any academics or managers in academic institutions, they will use phrases like 'herding cats' when they talk about managing people and giving direction. So, to achieve that type of buy-in around aspirations and giving direction can be quite challenging. Speaking from a higher education institution perspective, I think there are some significant challenges and not everyone buys into the concept of an enterprising university" (P29/L45-50/2016).

The above statements suggest that under a normal working condition it is a struggle for leaders and managers to fulfill their regular routines regarding managing and directing the people. Therefore, it could be argued that to enhance their strategising capability in the facilitation of entrepreneurial activities there must be great dependant on how open they are and the types of relationship (close or distance) they develop with the people. Further to this, university leaders, managers, and governors must be ready to accept the added task of multilevel relationship management.

For the minimum organisation, and as the themes related to determinants were refined and defined, tables 46 to 58 in (Appendix 18) were used to pinpoint all data relevant to this specific analysis.

6.2 The characteristics side

Having presented the findings on the factor side, it is crucial to report the data gathered on the characteristics in a rounded discussion. Therefore, this section reports what I found as the main activities and highlights the emerging themes.

253

Using the terms, such as practices, actions, initiatives and routines, participants refer to characteristics as activities undertaken by their universities with the primary goal of becoming more entrepreneurial (for example, see Example 4 P7 in Appendix 7). The characteristics are significant elements epitomising the entrepreneurial character of the entrepreneurial university and are unique to the individual case. These range from enterprise activities, regional boot camp, and entrepreneurial education to designated units/structures for carrying out entrepreneurial and innovative activities.

Some of these activities such as the entrepreneurial education are targeted to developing some of the characteristics of entrepreneurs (entrepreneurial skills, attributes, and behaviour) in students and graduates. As such, led to the top-down initiative from the government to finance key entrepreneurship programmes in HEIs. Then adopting the bottom-up approach, UK universities are drawing on the U.S model, especially the Babson College entrepreneurship education approach (Hayward, 2000). On this same ground, interview discussions with some participants confirm drawing on Babson College as best practice model (e.g. P20, P26 and P29). In turn, entrepreneurial education is leading to the pursuit of small business formation by graduate recruiters and triggering universities engagement with small business organisations (DfEE, 2000; Gibb, 2002; Hawkins & Winter, 1995).

For example, in describing the key initiatives that make U7 to be self-identified as entrepreneurial, P23 identifies two classifications: "There are several **external-facing** designations [] for example, we have people who work with our alumni. For our **internal-facing** role, we have our colleague in the Student Life who looks after things like graduates' opportunities and students' placement. We have our marketing team (people) who are looking for case studies for things like retention and recruitment strategies" (P23/L142-147/2016). Thus, these include the external and internal-facing entrepreneurial activities.

Using a different word, P32 at U8 describes entrepreneurial practices for business organisations as outward-facing illustrating with some examples: "We also have two **outward-looking** tools if you like. One is **I-Business Partner** which is a membership

program that currently has 14 companies subscribing to it and it involves a series of events and information. Then, the second is something called **I-Tech Forth-sight** which allows our academics to talk about their research and then speculate how their research will impact the society in 20 years' time. So, it is very much looking at the personal perspective from more businessman academic which is beyond exploration but very much about imagination. It helps people to see where research outputs may affect our society in the future" (P32/L42-49/2016).

Some other representative examples of interview extracts disclose:

"We have a combination of both *in-house and external* workshops. [] Since I have taken over the team I am trying to increase our contact with the rest of the University working with the other team. I know that is an *internal activity*. It does tend to be an *internal-facing* wide that I do. [] Our marketing team is much more interested in some of the external and high-profile stuff [] if they just want something that is *internal* for example, we do an ILF (Leadership Foundation) programme and we have been successful with that, but they are not really interested because it is not *outward-facing*. So, we try to promote what we do *internally* because it is more relevant and directly related to students" (P22/L47, 244-255/2016).

Therefore, these activities are categorised into three main classifications which I coded as intra, inter, and outward-facing as presented in Figure 15 in Chapter Seven.

6.2.1 Inter-facing entrepreneurial characteristics

The inter-facing practices are the in-between activities; that is, they are considered as activities connecting the academic community with other key players in the entrepreneurial ecosystem including government, business community and other institutions. These are often associated with the professional service units or centres integrating business engagement with academic such as TTOs as well as regional boots camp.

For example, as an inter-facing practice that combines both external and internal activities, P21 explains what Enterprise Ladder entails, stating that: "…We have 20-30 business mentors who are mostly individual business people to run something called the Enterprise Ladder which is every Wednesdays evening during the term-time up to Easter we run a one and half day enterprise session where we get different business people coming and talking about how to start your business, idea generation, public speaking, funding and all the normal things" (P21/L229-234/2016).

The statement reveals how U1 utilises the expertise and knowledge of business mentors (often the alumni network) to inform its in-house activities for current and past students' entrepreneurial development. Besides, running a series of professional development activities, U1 owns a multi-million-pound **Sports Park**. As a huge investment business venture and income generating Park, it is one of the key initiatives that make U1 entrepreneurial, P21 underlined.

"The Sports Park itself is entrepreneurial because it acts as a business on its own, it has facilities for students, and we have several teams training there. It is a venture of its kind and a big business. So, that is a big investment by the University to be entrepreneurial" (P21/L77-80/2016). Like U1, U2 brings together its established relationship with business people closer to its academic community to learn the reality of business. Some of these inter-facing activities are done through the **Start Your Business Institute**, as mentioned by P24 when he explains:

"We have another educational institute called 'Start Your Business' which runs one event in February to try and get people who kind of solve set of questions as part of brain thinking to try and start their own businesses. It is an educational event that allows them to do an exhibition style where they go and talk to people who have done it before, find out how they can support them and network. The idea is to let them rethink how they make the jump in starting their own businesses. [] We do several educational workshops throughout the year which is about networking to find out other people who can help them (P24/L23-30/2016).

256

Another key inter-facing activity is the **Enterprise Showcase Event** which is an annual networking event, said P25 whose responsibility is to oversee the project from sourcing speakers, managing logistics to its operation (P25/L11-13/2016). The event shed light on the innovative work undertaken by the academic and alumni communities. It encourages the development of an entrepreneurial spirit in students, graduates, and staff by honouring their passion and ambition for the enterprise. The annual Enterprise Showcase is an award ceremony event which involves a series of exhibitions where the academic community shares their experiences with guests from the business world. A different range of prizes is involved including business support that worth £1,000 or more, some of which are donated by local companies (UoP, 2016). P25 supplies detail about the event:

"We had our annual Enterprise Showcase Event back in March - this is an event that we run to showcase our students' start-ups. We have an exhibition of roughly 20 of our students' start-ups. We then invite both external and internal guests to come along to see what they are doing. Following that, we have an Award Ceremony (eight awards) where we present a series of awards to both graduates and undergraduates' start-ups. Some of them are nominated and decided by us as a team and this will be for students who have been part of our programme. Then, we also have some public nominations for start-ups of the year and entrepreneurial spirit for both students and staff" (P25/L24-37/2016).

Engaging alumni in knowledge exchange, the *U4 Angels* allows prospective and past students to present their business concepts with an affordable entry fee for financial aid from a substantial business established by former students. In meeting the needs of the market, the HEIF funded *U4 Graduate Consulting Unit* is run by a group of recently graduated students who are assisted by part-time students and supervised by senior academic tutors. The Centre was established to carry out customer-based projects that are very urgent and intersect between students' placement and traditional consultancy. The projects undertaken include creative design, market research, web design and ICT. The involvement of the student community in consulting activity enables them to develop self-confidence and enhance their employability skills. In doing so, they are introduced to the

257

practicality of a "commercial context and the academics are able to oversee a rich mix of involvement" (HEFCE, 2008, p. 56).

Furthermore, since 2005, U4 holds a yearly based *FLARE* competition aims to support the past and current students in generating creative ideas and in setting up innovative enterprises. To date, FLARE has impacted on up to the twenty-five student business enterprises worth of one hundred and twenty-thousand pounds.

Launched in 2011, the *Big Pitch* is a highly innovative CEDAR-led initiative aimed at encouraging students to embrace entrepreneurship. The business plan competition is an open event funded by Higher Education Innovation Fund, where students submit a one-minute business idea video, in which 25 of the entries- ten are chosen by popular vote and 15 are selected by a panel of entrepreneurs to attend an intensive week of training at the Big Pitch Boot Camp. Six finalists are then selected for a live pitch to a panel of judges with a range of prizes. The Big Pitch is the central pillar of student enterprise agenda.

The *Little Pitch* launched in 2012 is an idea generation competition to help spread and embed entrepreneurial culture among all students across the University. It runs during the first semester in three one-month blocks (October-December) focusing on an interactive website, the competition aims to provide a simple, accessible and engaging competition. It requires students to develop imaginative and creative business ideas, share and promote these online in not more than 140 characters. A prize of £140 and a Little Pitch t-shirt with a further three runners-up are available.

As part of it, an in-between entrepreneurial practice put in place to connect internal initiatives with external initiatives, U9 makes effective use of its alumni community. P13 explains the various ways they have been exploring this alumni opportunity to drive in-house activities:

"Another thing we have done really well is that we have engaged well with the alumni community. Both in terms of bringing them to campus, we called them **Enterprise Ambassadors** where other universities called them Entrepreneurs in Residence. So, we have got 20 of those now and we are about to double that to 40. These

258

are entrepreneurs who are happy to give their time and effort. The other thing we have done with our alumni is that we have engaged with them to fund activities" (P13/L72-78/2016).

From the business support side, P12 emphasises the work of both internal and external business advisers:

"Other than these people, we have another Business Adviser who comes in based on when she is needed. So, the sort of work the **internal and external Business Adviser** do will be very similar because they are the main service and the general business ideas that students may bring forward. With the external business adviser, most of her work will be to deal with people coming from less scientific backgrounds be more of general business base background from the Business School. We have a lot of people coming in from Fashion Design and all that kind of things and general spread from across the campus" (P12/L44-56/2016).

On the side of encouraging and empowering students to be more enterprising through series of competition challenges using enterprise managers across different regional universities as judging panels, P14 provides insight:

"Specifically, for the key enterprise activities, we have the **Enterprise Boot camps** and the Enterprise Scholarships. On the **Enterprise Scholarship**, we have 18 enterprise scholars who are funded by alumni donations. We take them to our residential boot camp in December where they get intensive training on running a business. But it is very competitive to get those eighteen places because we receive hundreds of applications every year. If an application becomes successful, they must pitch to a panel who decides who go. Also, there is a **Regional Boot camp** as well. So, eight universities (such as Leeds Beckett, Huddersfield, Leeds, York, Hull, Sheffield, Sheffield Hallam and Bradford) in the region send their entrepreneurs to attend. Everyone sends about thirteen entrepreneurs but because our University finds the funding for the camp through companies, it sends the highest number of participants. It has been held at York St. Johns and it might be Huddersfield this year. So, some of the universities' enterprise managers go running the

259

workshops as a way of working together and invited some external people" (P14/L195-208/2016).

An illustration of U10's in-between initiatives includes the Graduates Entrepreneurship Project. U10 is leading the European Funded **Graduates Entrepreneurship Project** that brings together ten Yorkshire and Humberside universities. Though the European Regional Development Fund has stopped, the universities continuously engage in collaborative projects to develop the entrepreneurial ecosystem of the region (European Commission, 2015).

Besides, through the University's bottom-up level initiative particularly using the key people with extensive entrepreneurial knowledge and expertise, U10 has been informing government policy at both regional and national levels. Thus, the University is impacting on top-down initiatives. P3 acknowledges:

"In terms of LEPs that is really very important. The Vice-Chancellor is part of that sitting on the board. I sit on one of those, the regional consortium groups for Yorkshire universities and I am the Chair of that. So, we have Yorkshire universities with eleven universities forming that consortium. There is a committee called the knowledge transfer partnerships (KTPs) and I am the Chair of that. So, in terms of how we as a group in the University engage with those bodies is very important" (P3/L460-466/2015).

The above comments suggest that U10 has multiple relationships by working with business organisations, government bodies and other universities to foster entrepreneurship in the region. Therefore, it is contributing to the economy in several massive ways.

Similarly, U11 provides support to existing and past students to develop social businesses by engaging them in different social enterprise projects through the University Social Enterprise initiative. P9 describes: "The **University Social Enterprise** initiative is the community interest company which is being set up to help staff, students and the alumni community to create and develop a social enterprise. We created this space about a year ago to be the shop front for the social enterprise programme. So, it is a place where

the social enterprise offer is made visible. So, people can come in at any time to discuss what the offer is" (P9/L10-27/2015).

Through **Regional Business Plan Competition**, U11 is demonstrating a connection between the entrepreneurial activities taking place within the institution and those directed towards supporting the external community. In this sense, P9 describes the importance of having a competition scheme: "Lot of ideas always come through competition. There are always competitions to encourage ideas. There are always activities to encourage students…" (P9/L116-118/2015).

Also, through the Business Advisory Group, U11 utilises the opinion of business experts to inform its academic delivery of entrepreneurship. P8 explains: "the **Business Advisory Group** which is where we have small businesses and large businesses coming in and advice on how we can improve the contents of our delivery. So, those two things; delivery and contents should create more entrepreneurial graduates" (P8/L36-39/2015).

P8 describes further how the Group works and what it entails:

"We have had the Advisory Group within the Business School for about three years and previously it was very large. It consists of National and international organisations and we are trying to use them as a gateway for placement and for recruitment. So, it is a very one-way stream and we have completely flipped that now in the last year and make it an inward dialogue. So, they look through our programmes, they look through our module contents and they say is that what they need and is that industry ready. Ultimately, the curriculum tends to be five to ten years out of date because the pace the University evolve that is very slow compared to industry. So, we need to find a way to engage with all sets of the marketplace. We are increasing the number of small businesses on the Advisory Group. So, their opinion is heard, and it should really be a dialogue, we should not just be exploiting these companies for placement opportunities only" (P8/L42-54/2015).

261

Apart from this inter-facing group, there are also the enterprise champions who are insiders in terms of utilising the University's staff to help deliver social enterprises from problem identification through to the real practical phase of business. P9 expounded:

"So, we have about 25 to 30 **Social Enterprise Champions** who are mainly staff, who are fully briefed and trained in social enterprise across the University. The idea is to help identify potential social enterprise entrepreneurs and then we work with the entrepreneurs to help them get the work off the ground, so, we try to be practical and problem-solving. We do not spend a lot of time helping them to develop the business plan. It is all about what the idea is, what you need to do to get it to the next step and how we can help you with that. So, that is all about the approach. We have had some finance where we have put £100,000 plus into the business of the entrepreneurs we have been working with" (P9/L48-57/2015).

Besides, U11 maximises its working relationship with business organisations to assist students in boosting their real-life business experience. P9 provides an example: "Things like there is a relationship between the University and UNIPART Manufacturing Group (UMG). They set up a partnership where students work with UNIPART on their factory floor and get real-life training. So, things like that which are new innovative ways of teaching and education" (P9/L195-199/2015).

To demonstrate that U12 is active in teaching and researching entrepreneurship, it was one of the first eight UK universities that won funding to set up an entrepreneurship education centre. P15 narrates:

"There was a competition announced in 1999 by Golden Brown called **Enterprise Challenge** and that was a competition to set up eight centres of Entrepreneurship Education across the UK and about 67 universities competed and that went down to 12 and then to eight. In 2000, we won the competition with the sum of £2.8 million which was a lot of money in those days to establish the Institute of Enterprise and Innovation then the **U12 Institute of Enterprise and Innovation** (UNIEI) was established. As I have just joined the Business School then I set it up in the Business School and that grew and was very

262

successful. It was set up for us to win the money arguing that we will be self-financing after five years and after five years we were" (P15/L27-35/2015).

The last sentence indicates that an entrepreneurial University is not just about winning grants and funding but also being able to continuously be self-financed to move things forward. By taking a similar stance, P31 comments on the use of competition to trigger entrepreneurial spirit in students. P31 explains how they link their students with others from different institutions:

"Our students can also take part in a range of competitions which include a national competition where they take part in an entrepreneurial challenge and present presentations which are then judged. They also take part in a social storm hackathon entrepreneurial challenge, which is a 24-hour competition which involves universities and colleges around the country where they are lined up for about 24 hours working together to solve that entrepreneurially" (P31/L143-149/2016).

Explicitly connecting internal-facing entrepreneurial practice with that of the external-facing, P15 and P16 make a linkage:

"External to the University, we use huge numbers of local business people to mentor our students. So, that group of 700 to 800 working in a group of five have been mentored by the local business people we have trained as mentors for this process" (P15/L352-354/2016).

Similarly, in connecting the academic side to working with the commercial side, U15 has been sustaining its entrepreneurial outcome by working informally with entrepreneurs thereby creating an evolving network that informs its entrepreneurship practice. From his previous strategic engagement role, P28 explains:

"I worked with entrepreneurs to draft MBA programmes at one point in terms of strategy; did a bit of strategy and engagement roles which is basically linking what is happening within the Business School with the wider community in terms of industry and public sector but also with the rest of the University" (P28/L42-45/2016).

263

6.2.2 Outward-facing entrepreneurial characteristics

Outward-facing practices are often considered as external-facing activities; that is, they could be activities undertaken within or outside the university but targeted towards the community and external audiences beyond the local market. These activities are often associated with acquisition, community and external engagement, internationalisation, and support to business and non-business community. For example, as a response to societal demands and a contribution to socio-economic development, the Regional Enterprise Hub was founded by the South East of England Development Agency with a network of 20 centres to drive innovation and enterprise-related activities in the region. Specifically, it aims to support and encourage businesses to grow a knowledge-based economy. As an outward-facing practice, P21 clarifies how U1 engages with the community, outlining that:

"Externally, the Regional Enterprise Hub was launched, and the University was part of that and then I was the Chair of the Enterprise Hub and the Head of Research and Enterprise Support was on the Board that was before I became the Entrepreneur-in-residence. The University is a big supporter of the enterprise by entering the Local Enterprise Partnerships. So, in that way, the University position itself as part of the business community and it is very active in doing that certainly for Surrey County Council, Guildford Council, and the CEO of the University is quite heavily involved. So, the University helps organisations to become more enterprising mainly because it brings connection and things in" (P21/L260-268/2016).

Another example is that while U2 drew money from government sources like the HEIF, it has the capability to support start-up businesses and SMEs to grow through its internal financial plan called the **Innovation Voucher**. P24 describes:

"For example, one of the things will do is that we have our own internal scheme which we called 'Innovation Voucher' which a company that works with us can use for testing activities, consultancy or pay expertise at the University and these must be fit within our strategic aim, not just anything. For example, we can give businesses to help them to

pay for our expertise which might be up to £5,000 worth of work and they may only pay two and half thousand because we pay for half of it" (P24/L245-251/2016).

Like U2, U5 provides support for businesses in the Southend area. In collaboration with the Southend Borough Council and the University of Essex, U5 delivers innovation and growth support to businesses in the area through the ***Innovation Voucher*** worth up to £5,000. The Voucher can be used in the following ways: student internship, consultancy, and bespoke training. Eligible businesses must be based in the Southend area with less than 250 employees, annual turnover of £25.9 million, hold 75% or more of the capital or voting rights, not agricultural or fishery businesses, and no history of university engagement or national KTP programme.

Outward-facing activities enable U9 to be more visible thereby enhancing its ability to generate income: "We also showcase to the audience what we do; our impacts and they are very generous with their money. For example, an alumnus funded the Product Development Fund and she had developed a product herself and she wanted to see other students do the same as well and as such, use the money to give them the opportunity to do so" (P14/L72-76/2016). Describing the outward-facing practices at U11, P9 outlines:

"There are various numbers of subsidiaries established; we [Enterprise Hub] are the smallest. Also, there is the **University Services Ltd** which sells the knowledge of the University to the outside world. The biggest business is the pre-sessional English. So, they run a lot of courses and there are a lot of people on it learning English. And of course, 50% of our income is derived from international students. They have a subsidiary called **The University Enterprise** which has been the primary vehicle for attracting European Funds into the University and from that they built the **Technology Park**. In the Technology Park, they run several businesses in there as well, they run series of games, there is a portfolio of businesses in there which are all derived from the core assets of the University" (P9/L132-142/2015).

Another key indicator of U11 entrepreneurial capacity regarding its outward-facing practice is that it owns 2/3 of the City:

265

"It is a very successful University but got its root in the locale. The University is very cautious about sustaining those routes and because externally **2/3 of the City Centre** is owned by the University and everywhere you go there is Phoenix logo everywhere. So, that annoys some people, saying 'bloody University takes over the City and there are students everywhere and all that kind of stuff. The City Centre is being run down as the University needs to have more buildings as it is recruiting more. So, the University also needs to do more about its routes, responds to some of those challenges and do something about it, but it is not going to be perfect. For example, it is by taking social enterprise as an initiative to respond to that challenge" (P9/L240-247/2015).

While it might be difficult for the University to make everyone in the community happy, with all initiatives, U11 is doing its best to ensure that the people are receiving the support required to becoming more enterprising. Another evidence that proves the University's commitment to engaging with SME and business organisations in the area is its ability to acquire government properties for enterprising use. P9 sheds light:

"…There is a commitment to engaging with businesses and SMEs and again is adding to the students' experience and that is why they do all these sorts of things. What is more interesting is that in a time of austerity the only institution which has any sort of public ethos is the university because with the cash flows already skimmed in several ways and what is left for universities is to go around the country and get involved in what it used to be the domains of local authorities' provisions. For example, you will see the University taking over Sports Centres and all these sorts of things. Some of that is about 'public good' and some of that is about been able to realise that there are opportunities for their students" (P9/L290-299/2015).

U15 has been engaging with the external environment through series of initiatives and P28 identifies the various ranges of people they have been working with: "It ranges from Pharma companies to small entrepreneurial ventures to the government in terms of both Scottish and the UK government widely. We are really working with anybody and everybody" (P28/L169-172/2016).

266

Using various sets of educational programmes, U15 has consistently been supporting businesses in enhancing their entrepreneurial capacities. P28 exemplifies:

"So, a lot of departments, private and public-sector organisations worked with me to support various aspects of our missions. For example, part of that include industry projects like **executive education and programmes** which were around partnership developments and building relationships with commercial managers that we are looking at developing relationships with other industry and building on their employee relationships in terms of industry projects and advisory support" (P28/L46-51/2016).

In contrast to other universities (e.g. U4) that have an established record in spin-out, participants at U7 does not view the entrepreneurial university based on the number of business activities. Some interview extracts read:

"The University's profile nationally depends on these types of activities. But for me on a day-to-day basis, I value what we do with students and in terms of the impact, it is not known. One of the things I am looking at is ways of showing and demonstrating the impact of what we do. Again, when I say impact, I do not just mean numbers of business started or success stories, it is about the impact on students' learning, confidence level, achievements, employability and all those things. But I do not think these are key drivers for senior management because they are not reflected in the []. They know it is important but that is not what they think of it in terms of are we going to be an entrepreneurial university" (P22/L347-357/2016). These comments support the strategic perspective of CE that an organisation might not necessarily develop a business (Corbett et al., 2013; O'Connor et al., 2013), but has done some changes in different ways and understand or has an intuition about its business context.

6.2.3 Intra-facing entrepreneurial characteristics

Intra-facing practices are the in-house activities; that is, they are considered as internal-facing activities within the university targeted towards the academic community only and are often associated with student enterprise activities (entrepreneurial education,

self-employment, start-ups amongst others) and enterprise support for staff which include enterprise designation and team, entrepreneurial departments and research groups. For example, the entrepreneurial endeavour of U5 is reflected through the appointments of the **Commercial Team** is another vital aspect of the University's entrepreneurial personnel with the principal function to: assist academics in increasing their research-generated and enterprise-led income rates on an annual basis by 20% on average.

In contrast to U5, the U2 entrepreneurial designation is handled by the admin team. P17 expounds: "We also have an administrative office here with about eight people who run events for local businesses and raise awareness of what we offer… (P17/L393-394/2016). Confirming entrepreneurial capacity at the senior management level, P10 specifies: "…A slightly different structure because it then allows them to organise their business in whatever ways suit them. So, I have a **Deputy Director for Research and Enterprise and Deputy Dean for Research and Enterprise** because I felt Research and Enterprise need it, so, I decided to put the structure in. Each department has to live on Research and Enterprise which has a lead on students' experience and quality" (P10/L230-235/2015).

P17 outlines further the significance of senior-level entrepreneurial designation: "We have invested in the Business School alone. We have the **Associate Dean for Students** who can champion the enterprise education for students. So, the enterprise is not a whole of that role, but it is quite a reasonable proportion of that let say maybe a quarter of an Associate Dean role on student enterprise agenda. We also have an **Associate Dean for commercial work** too who has the responsibilities for the International Franchising and the other commercial activities. All these are quite investments as posts" (P17/L386-392/2016).

Further to this, U2 has a set of internal groups and associations looking at how entrepreneurialism can continuously be fostered across the institution. Among these, there is one called the **Association for Innovation**. P24 illuminates:

"Internally, we have an Association for Innovation in the Business School and that is quite influential on the individuals in terms of becoming more entrepreneurial and making

sure that we set policies at that level to pursue things like small business charter which is a nice thing to have and it also lead us in the direction of trying to keep certain things where they are now and quick to achieve" (P24/L439-443/2016).

Further to this, these universities also embrace highly innovative courses. For example, U11 runs "BA in **venture creation degree** and that is being in Entrepreneurship and there is MA in International Entrepreneurship. Also, there are elective modules that are delivered by IAE which are around enterprise and every student must do an elective module as part of their degree course. So, it involves all range of different disciplines and subjects. So, about 1200 students take start-ups and enterprise modules. So, what that gives us is a whole set of tools and programmes and activities which encourage start-ups" (P9/L17-24/2015).

In contrast to U5 **BA (Hons) Enterprise and Entrepreneurial Management**, U2 entrepreneurial offerings at postgraduate level include MSc Innovation Management and Entrepreneurship and BA (Hons) **Business Management and Entrepreneurship** at the undergraduate level. The three years' undergraduate degree or four years including placement year is to help students with a passion for setting up their own enterprise to thinking in an innovative and creative way and to develop their entrepreneurial and commercial awareness expertise. Students are offered the opportunity to study oversee at a partner university, experience real-life projects by linking them with local organisations, and a one-year full-time paid role.

In addition to this, U2 also runs the **Enterprise Drop-in Session** that enables students to discuss their ideas with the Enterprise Team which could open opportunities including "signpost to other relevant resources and services outside the University", said P25 (L15-17/2016).

While P22 acknowledges the significance of creating a link between Careers and Enterprise Team, she comments on the challenges in making a connection:

"…We now have a career team with a really clear careers remit and the enterprise team. So, I am working hard trying to create links between both teams. It is hard because

269

their remits are slightly different, the aims and objectives of the individual staff are different, expertise is different and the confidence of the career team. We have one or two of the career staff who are really working closely with us and have a lot of confidence. But most of them are not that confident. But it is more separate than what I would expect it to be real. [] Since I have taken over the team I am trying to increase our contact with the rest of the University working with the other team. I know that is an internal activity. It does tend to be an internal-facing wide that I do" (P22/L190-247/2016).

Another intra-facing activity undertaken by U6 is the **Pre-and Post-Start-up Support** offer to students. This includes leadership foundation programme to help with soft skills development for growing and leading a business. P22 briefly described the programme:

"…Something that is internal for example, we do an ILF (Leadership Foundation) programme and we have been successful with that [] it is not outward-facing because it is more relevant and directly related to students" (P22/L252-255/2016).

Further to this, another internal-facing initiative is the **In-house Idea** Session. P22 outlines what the session is all about, detailing:

"There are other initiatives that I have not mentioned. Let say for example, tomorrow my colleague has organised a session for students, 16 of them coming in and they will be using the Media Station which they have already borrowed. The students will give presentations on any subjects. These are entrepreneurial students, but they might not necessarily be talking about their business ideas but talk about something like how they have developed their enterprising mindsets. We have another three days' event coming up in May for students about 'idea session' working in teams to develop an idea and then do a presentation at the end. Set of activities and workshops working in teams on a competitive basis. These are just a couple of examples of what we do" (P22/L113-123/2016).

However, the in-house activities include entrepreneurial practices targeted at students and staff. On the side of the students, through the Centre for Social Enterprise, U7 provides pioneering educational opportunities to students including bespoke innovative management education around social enterprise as well as its newly-launched MSc/PgCert/PgDip in Social Business and Sustainable Marketing. **The Social Business and Sustainable Marketing** programme aims to help students to develop creative and original solutions by solving social problems, prepare them for a career in social businesses by providing an opportunity for live Business Innovation Project as well as becoming social business leaders by gaining specialist knowledge around social enterprise and sustainability.

Similarly, on the side of the academic staff, series of social enterprise research and initiatives that cover a broad range of social needs (see Appendix 7 Example 8) have been successfully undertaken thereby is making a significant social and economic impact. In addition to this, the extent to which U7 is entrepreneurial in terms of people capacity could be measured through the senior staff participating in the national **Entrepreneurial University Leadership Programme** runs by NCEE for their entrepreneurial leadership skills development. There are also key entrepreneurial designations at the senior level to foster the support of entrepreneurial development. P23 points to this:

"From the capacity perspective, I will give example from the senior level; we have appointed a Pro-Vice-Chancellor with the responsibility for industry collaboration. So, we strategically build on that and it is our core message and we put the request forward to buy into that from our senior leadership team who will drive specifically different work teams around partnership, student experience, placement and there are several different teams within that. But the capacity is being put up now to lead that and we have sponsorship from our Deputy-Vice-Chancellor who buy into that. So, it is very much integrated…" (P23/L161-168/2016).

U7 runs a series of enterprising events including Be Enterprising, Enterprise Academy or Enterprise Masterclass, Student Enterprise Society, Business Boot camp, and

271

Postgraduate Enterprise to inspire students in becoming more enterprising. It is expected that the new generation of entrepreneurs will emerge from graduates and a new generation of innovation will come from research undertaken by current doctoral students (Martinez et al., 2015). Therefore, it is of importance to support enterprising students to build on their skills and knowledge. This in turn, impact on local, national, and international economic growth.

On the side of the internal activities provided to the academic community to support them in becoming more enterprising, P32 at U2 gives an example:

"Then the final areas are the Student Enterprise and we have a team called **Enterprise Lab** that is providing program support for the students including extra-curricular teaching and experiential learning through various competitions and programs" (P32/L22-25/2016).

Going beyond student enterprise that targets all students, U8 is distinctively innovative by having a designated workshop that covers the theme of female entrepreneurship. P32 explains:

"For example, in the last two years, we have run something called the **I-IDEA Program**, which is a program dedicated to female students' entrepreneurship. It is a series of events, coaching, and mentoring leading up to an award in form of Prize of funding that winning student team can put into their start-up companies. So, that runs during the academic year in October and the prize is awarded in May/June time. We have other programmes as well available to all students but this one is quite special because we don't see enough female students in entrepreneurship. As such, the programme is deliberately targeted to change that perspective and I think it gives significant confidence to female students who have very enterprising ideas when they see what their peers have done in previous years and how they have gone from nothing to succeed externally. So, it is a fantastic programme" (P32/L60-70/2016).

Explaining further, P32 comments on why it is very important for them to support student enterprise and entrepreneurship, stating that: "All of the students' entrepreneurship

272

activities are hope that the outcomes from them are strong pipelines of new SMEs coming out of the University from the student body. So, there are a lot of different ways we engage with the SMEs" (P32/L216-218/2016).

Extending beyond student enterprise activities, P32 highlight how academics are supported in becoming more entrepreneurial:

"…We have a related company called **I-Innovation** and that is a venture capital company which provides our technology transfer office for the in-house activities. They now operate as a separate company and are listed on the Stock Exchange. They drive a lot of entrepreneurial activities as well in the form of growing smaller spin-out companies coming from the University into significant large companies. It is quite a strong partner there that helps us to commercialise our IP" (P32/L188-194/2016).

In explaining the entrepreneurial capacity of the University's in-house activity in terms of its entrepreneurial designations, P12 and P13 expounded:

"The **Head of Enterprise** role include sitting down in her room to give face-to-face business advice occasionally and when we do need specialists in different areas, we have people whose responsibility involve the **Business and Incubation Manager** who deal with outstanding business support and incubator activities where students wish to take their ideas forward. We also have a **half-time Business Advisor** who will do a lot of the appointments. But in terms of when we say general, Mr. M. does have a specialist, for example, if it is technology base, we will try to refer it to him at first because he deals with a business aspect of Technology. He runs his own 3D Graphics Company. So, that will make sense to transfer all that has to do with technology-based to him" (P12/L38-51/2016).

Likewise, P13 adds that: "We get a lot of students which means we have a lot of money coming into the University and if you are clever with it could be used to build capacity. For example, when held the **Director of Enterprise** five years ago, there was three enterprising staff; one administrator and two were educators. Now there are nine people and that is about capacity building. In Business Support, there was a **Business**

273

Adviser and an administrator but now there are three Business Advisers and two Administrators. So, it is about building capacity" (P13/L209-215/2016).

On the students' side, P12 explains how the students are supported to realise their entrepreneurial potential:

"This is compared to 2007/08 when I used to see seven to eight people in a week. In the current situation, I see about 20 to 25 people now in a week. So, that shows that the numbers have gone up a lot. So, what we always do is to categorise the students and graduates into two groups and that will be my job when the students come in and decide whether their enquiries are about thinking of enterprise as a career option or somebody who has a different business idea and whether they are at the stage where they want to start putting business planning into writing. So, someone may come in with couples of different ideas and think about the enterprise as a career option to take one of those business ideas forward then we put them into the various groups and they will speak with the **Career Consultant**" (P12/L18-27/2016).

It was acknowledged that different students may require different support based on their level of enterprise ideas. P12 describe further that:

"…It may be that someone coming out of that meeting requires a programme with Business Adviser, they may be asked to come back two to three times to discuss their ideas and decide at that stage what they want to do. They put their **Business Plan** in place and then get the approval of the Enterprise within a short space of time say for a year (but often much shorter). But again, a lot of that depends; if students whether they want to start the enterprise when they are at the University or they want to do it after they graduate. In any of those two instances, if it is someone who came in from the outside with that same situation, I relatively include the process of starting a Business Plan to get some Marketing materials together. We would give them a **Star Business Adviser**. So, that is how we will break things down in the initial meeting of the needs of students and graduates support" (P12/L28-57/2016).

274

At U10, to support the academic community to be more enterprising and entrepreneurial, P3 shed light on the in-house activities:

"…Supporting academic staff to develop their research programmes, seek external funding, I put in place support or training for researchers, develop a strategy for the University. In addition, all the business development activities that academics required from forming a strategic partnership with external bodies develop collaborative relationship and partnership with industry. Also, offer support for the **commercialisation** of Intellectual property. Then, under that umbrella is support for student enterprise; helping graduates up to five years of graduation to develop their business proposals and start their own companies" (P3/L4-12/2015).

As a demonstration that being recognised as entrepreneurial is a continuous process, P3 discusses the plan to enrich the students' entrepreneurial mindset through the development of the curriculum with enterprise education. She states: "We are currently talking about how we are going to embed enterprise into the curriculum for the undergraduate students and how we are going to be accredited for that and that will be throughout the system" (P3/L128-130/2016).

To provide further insight into the activities available for students, P3 outlines:

"…We have **BA Enterprise** but how many students are on it now. I think there are some transitions regarding staffing. Head of Enterprise currently runs the Enterprise. We have a lot of students on that and this is one part of the curriculum and we are currently considering how to make the course available to all students you know we have degree courses; I mean all levels including **BA Enterprise, Master of Enterprise and Doctor of Enterprise** as well that are all link to setting up a business. Then, we also have **enterprise placement year**, instead of students going out to do undergraduate degree placement outside the University with businesses they rather set up their own businesses. We usually have 30 of those a year. They come here, supported by my teams to do an enterprise placement year. We have the Duke of York Young Enterprise Centre which is where our students and graduates develop their businesses. I have signed about 120 hot-desk licenses

275

for students doing it as extra-curriculum rather than doing it time-term" (P3/L131-145/2015).

Using the term pedagogy, P4 describes how the academics have been delivering these student-facing activities:

"…In terms of the ability of the staff. As I said, we are flexible in the way we teach, we are confined to the curriculum but the pedagogy; the way you choose to deliver it is yours. Pedagogy to me is the art of teaching. So, we are free to deliver this art the way we want but for some, it is very traditional. It is a lecture type, face-to-face lecturing but for others, it is more about engaging with students and getting the best out of them by inspiring them because I think you need inspiring students to have productive students" (P4/L97-103/2015).

To help manage these multilevel relationships and keep these branches of activities under control, P3 describes how this has been done:

"…We begin to have a continuum of activities. So, the enterprise and business developments are being threaded under the undergraduates' curriculum. Then we have placement on how the relationships that the undergraduate students form with the businesses. Then you might have a research relationship with that same business. So, one of the things we put in place and that is extremely useful is that we have the customer relationship management (CRM) system. So, that is important as you can see the full extent of the business you work with, type of businesses you work with and the type of relationships you have" (P3/L378-385/2015).

By expressing the student-facing entrepreneurial practices at U12, participants pointed to entrepreneurship courses and modules. P15 tells a story about how the University started teaching only two modules of entrepreneurship prior to 2004 to having a series of entrepreneurship courses and degrees available to all students between 2003/04. He narrates:

"Entrepreneurship was so central to our Business School students and what they should understand and therefore, it should be a **core module**. So, every student coming

into the School must take Entrepreneurship module in their first year in their first semester. We, therefore, designed a module which was very unusual because it was very big, and we had them working quickly in groups of five to invent a new product or process. I then wrote a book on how you go about that and teaching Entrepreneurship in our campuses abroad; China and Malaysia. So, we, therefore, had this module with almost 850 students on it. We then also started in about 2003/04 to introduce it across all Schools on campus. So, we also set up a Master in Entrepreneurship and we then set up a master's in chemistry and Entrepreneurship and in Engineering and Entrepreneurship as well as Agriculture and Entrepreneurship. We have eight to nine of those Degrees running" (P15/L41-58/2016).

Describing further, P15 considers a systemic approach to driving student-facing entrepreneurial practice, outlining that: "one other development you should know about is that we developed in eight years ago, a systematic way to help students generate radical invention and innovation. Then most innovations are incremental and just the same as we have done before or with a bit of twist to it. So, we have developed teaching technique to do that. We then made and put those into a very well-defined process called **Ingenuity**" (P15/L61-73/2016).

Unique to U12, P15 provides in-depth discussion about what Ingenuity entails:

"Ingenuity came with a booklet and with a set of colour cards and that takes the students all the way from not having an idea through to generating new ideas. We used Ingenuity here and in other countries which are extremely affected and has worked very well. Then in about three years ago, we raised some money and had that process put online. So, that ended up with a software platform called **Ingenuity online** and we now use that in Global Entrepreneurship Competition. All our students use it including our Master's students, we use it with a lot of small businesses, we use it with multinationals, with NHS and is there to help them generate new ideas and it works successfully. That now begins to grow very quickly. So, that is where we are now running with master's and undergraduates' programmes, programmes with other Schools across the university, programme in other countries in China and Malaysia. We are running **Ingenuity**

277

in cards and material forms and Ingenuity online. It is all growing, and we will continue to do so" (P15/L74-86/2016).

The last sentence suggests that U12 entrepreneurial transformation is not a one-stop platform with the same layout over a long period rather it is changing and improving its ways of doing things to suit current needs. This was further evidenced when P15 comments on funding attraction: "Two years after we won the £2.8 million we won another £2.9 million to work with the other universities in the region and some of them have kept going. It is success to success" (P15/L87-89/2016).

Identifying further other intra-facing entrepreneurial practice for the student community, P15 discloses: "Also, one other thing that worth mentioning is that quite earlier on in 2002 we established what is now called the **Enterprise Lab**, this is an incubator for students to set up businesses on the back of the ideas they generated in their courses. You know if you get 200 teams of students inventing and coming up with ideas as part of their modules, some of them will be good ideas and try to do it. So, we set up a Lab to try and do it and that has grown a lot" (P15/L149-155/2016).

Pointing to other ongoing developments aim at supporting the student community, P15 mentions: "Another new building will be ready towards the end of this year, September I think. The **Institute** will be one of the main parts of that and there will be a big incubation set up to help students set up businesses. So, now we have an incubator but having a big one is lovely, and this will be a new development again" (P15/L155-158/2016).

Commenting on the teaching aspect of entrepreneurship, P15 indicates two additional units supporting this:

"Here a lot of what we do involves encouraging initiatives that make our teaching more imaginative and that was called 'Enterprise in Higher Education' which started in 1991 and then in 2005 we won £5 million to set up a **Centre for Teaching and Learning** which was a government initiative. Both Centres were set up to encourage students to learn through creative problem solving and through experiential learning and reflective learning

and moving right away from just didactic and how this works really. So, it is about learning how rather than learning what" (P15/L256-263/2016).

Having described the educational aspect of student-facing practice, P16 points to the funding initiative available to support the students: "We also have a **Student Investment Programme called IPO** and that is a pledged fund and besides of that fund we have around a million pound now and that leads to making investment about £51 million" (P16/L13-15/2016).

U13 has been an institutionalising enterprise for all students by incorporating enterprise into its curriculum, said P30. He testifies "it is increasingly built into the curriculum itself and into co-curricular activities. We are increasingly pushing work placements too" (P30/L330-333/2016).

Similarly, P31 also comments on entrepreneurship programmes available for students: "We have two Masters; one in **Entrepreneurship** and one in **Entrepreneurship and International Development**. So, as a team, we are all involved in teaching on that. We are all committed particularly to that entrepreneurship journey" (P31/L53-56/2016).

Furthermore, P31 comments on co-curricular activities, pointing out that: "we also support the extracurricular programmes that we have here like the **Pitch Programme** which involves setting up and running student-led businesses. Although our academics are not directly involved in organising that programme they support it as when they can" (P31/L60-64/2016).

By identifying other support available to students, P31 declares: "We also have the extra-curriculum programme where students set up and run their own businesses with a grant funding of up to £1,500 to support them in doing that" (P31/L141-142/2016). While rounding up the discussion on the dominant defining characteristics at U13, P31 remarks on the role of curricular and co-curricular programmes in inspiring students' entrepreneurship and nurturing students' entrepreneurial mindsets:

"We also have the modules themselves within the curriculum where students undertake the assessment. For example, **hot box 500**, where students are given 500 waste

279

units from a business and they must redesign the units for community social and environmental benefits and they are assessed on the presentation on how they give answers to that brief and that is great because we get to work with a local company and they get to see whether they have the landscape to change their businesses to something different and something better for social good. So, these are a range of examples that we do on our programme which combined to give that entrepreneurial edge" (P31/L149-156/2016).

To effectively coordinate teaching and learning of entrepreneurship and other commercial related programmes, U14 has a designated unit called Centre for entrepreneurship. P27 describes how important the Centre is contributing to the University's entrepreneurial ecosystem:

"…A really strong academic centre for studying entrepreneurship and our place in the entrepreneurial ecosystem of the regional and national economy has been a very important development. I know that there are many universities that are entrepreneurial, but they do not have entrepreneurial departments or departments for entrepreneurship and they do teach entrepreneurship but, in this University, I think the founding of the **Centre for Entrepreneurship** and its growth and the top management teams support for this department has fulfilled a very important institutional mission. I think has been a central feature of entrepreneurship at this institution" (P27/L87-94/2016).

Further to this, U14 has provision to support the entrepreneurial development of its postgraduate researchers. P26 describes the available initiatives for them:

"I think we have been experimenting with **courses in entrepreneurship** since 1999 for Ph.D. students in Engineering and Science. We have tried several different ways of making this viable. So, this is the latest restoration where this course has been running for four or five years now and it drew on previous courses. Then when this kind of suit professional development for faculties at different levels became institutionalised with a certificate then this fitted very nicely in there. So, now it just rolls every year and we have about 30 students taking part and it is part of the structure now. So, it is a way of making a

280

viva, but we do not reach all the Ph.D. students with this, however, there are other ways or routes for them" (P26/L69-77/2016).

Participants share their views about how entrepreneurial offerings at U14 are enhanced at the senior level. P27 provides an example from her strategist role, outlining that:

"I am supporting entrepreneurial outcomes within the curriculum. Of course, one of our graduates' attributes is that students become more enterprising. So, it is in that regard there is a role for entrepreneurship and then I guess there is also a role for the institution because at the strategic level of the institution when we consider all the flocks and the changes that are affecting higher education across the world but particularly in the UK whether that is because of new technology, new students or new fee introduction and essentially, the marketisation of higher education requires an entrepreneurial response. The fact that I tried to breathe entrepreneurial response to the teaching and learning challenges of higher education and how we deal with the marketisation of higher education, I think in a second way, the strategic role I would say is in an entrepreneurial capacity of the institution in that regard" (P27/L13-23/2016).

Further to this, P27 testifies to how U14 has been assisting staff to develop their entrepreneurial potential by sending them on external courses: "I actually went on an **Entrepreneurial Leader Course** which ran for three weeks over a year and it was for top management. It was interesting because they kind of give you the theory of an 'Entrepreneurial University'. This I suppose comes from the background where my academic discipline is entrepreneurship; I look at it and was very interested in the course" (P27/L47-50/2016).

On the side of the staff-facing entrepreneurial practice, participants identified entrepreneurial designation as one crucial aspect. For example, P15 and P16 express the importance of senior-level entrepreneurial capacity:

"An example is the support of a very entrepreneurial **Head of Technology Transfer** for the University. It was not just me there are other individuals in some of the

281

sciences who also were very deep into the commercialisation and getting things out there were our responsibilities. This is not just regarding money making but regarding the opportunities that we must make sure people outside benefit from the work and research we do by making it relevant to the community. So, one influence is the people" (P15/L185-191/2016).

"We have a relatively new **Director of Commercialisation** with a focus on Entrepreneurship, new **Director of Intellectual Property** who is very keen on student entrepreneurship" (P16/L167-168/2016).

Overtly, in developing entrepreneurial capacity in both staff and students, P16 makes a connection: "We also run a large Institute which is the **Entrepreneurship Leaders Programme** in the UK, so we have between 16 and 18 people at one time on that. We also do placement, so, we introduce paid placement into our businesses" (P16/L22-24/2016).

In expressing the kind of roles that constitute U13's entrepreneurial designation, participants identified capacity at the senior level. For example, P29 mentions that: "To drive the enterprise agenda, we have a **Directorate of Enterprise and Innovation** which focuses on the university external engagement in terms of industry partnerships, entrepreneurship and so on" (P29/L88-90/2016).

Likewise, P30 and P31 clarify further on the extent to which U13 is entrepreneurial in terms of human capital at both senior and academic levels respectively: "For example, our Research and Innovation Directorate comprises of 80 people who are responsible for the ERDF, research grants and other external grants; we have people who help with business engagement, people who help with external engagement, people who help with intellectual properties. In addition to the research and innovation directorate, we have academics who work on enterprise activities such as winning contracts as well as in the strategic aspect, where I work" (P30/L262-267/2016).

"We have a team of entrepreneurship educators; we have three academic lecturers teaching entrepreneurship and two Associate Professors (Readers) in Entrepreneurship. They all specialise in different areas of entrepreneurship and their

282

teaching also focus on entrepreneurship which contributes to different modules that sit within the Business Enterprise and Entrepreneurship undergraduate programme. They are also programme and module leaders and teach on our Masters" (P31/L47-52/2016).

Further to this, participants identified entrepreneurial capacity at the operational or professional level. For example, P30 listed: "We have a small team of intellectual property advisers" (P30/L192/2016).

Having discussed the responses to the factor and characteristic sides, the next paragraphs present findings associated with the impact side showing how the universities differ.

6.3 The impact side

Since the impact side (Pillar 7) of the EU framework integrates factors and the outcomes from the activities (Figure 1, Chapter One), this section reports the similarities and differences between the group (shortlisted and winners) of self-defined entrepreneurial universities in terms of assessing why one group of the university is doing better than the other. It also tells which university group is low or high in entrepreneurial activities. In doing so, typologies of self-defined entrepreneurial universities are identified using qualitative cluster analysis (QCA). Frequently, cluster analysis is often used in quantitative research to group cases on the basis of the same responses to several variables (Cornish, 2007).

Taking together the common determinants and the elements characterising the development of these self-selected entrepreneurial universities, three typologies surfaced and labelled as: fledgling, fledged and fully-fledged by utilising what I described as QCA.

Rather than using statistical software, QCA is considered suitable because the universities were qualitatively clustered manually on similar responses using tables because this thesis is wholly qualitative grounded in visually-generated methods. A cluster is a group of homogeneous cases; i.e. identifying university with similar patterns. In this thesis, QCA was used to identify and group self-defined entrepreneurial universities into distinct types based on their similar responses to how they have managed to embrace changes in the

283

sector during responding to the policy imperative 'becoming more entrepreneurial' (see Appendix 21, Table 61). The Table expresses the extent to which entrepreneurial activities are coordinated to provide the universities with an entrepreneurial edge.

While illustrating with participant diagram (see Appendix 7 Example 8), P23 provides a virtual overview of the importance of coordinating the entrepreneurial initiatives and this was supported by some explanations. P23 explains:

"…Entrepreneurial, enterprise, and entrepreneurship do not fit separately from the other areas. They are well integrated closely with each other. It is on our core mission to drive these activities and as you can see in the diagram the whole range of different projects that we have; some are commissioned, some are engagement, and some are research-based. There are some aspirations and there are some other works too, but these are just to give you a flavour of the type of things we do with our partners" (P23/L133-139/2016).

As displayed in Appendix 21, integrating the sources (primary and secondary) of data collection is to enhance the validity of the typology by triangulating the data. On a continuum, three types of the UK self-defined entrepreneurial university are categorised: fledgling, fledged and fully-fledged to reflect on the degree of responsiveness to entrepreneurial call and show how UK self-defined entrepreneurial universities differ in their approaches to entrepreneurialism based on the level of coordination of entrepreneurial activities. Importantly, these typologies show the extent to which self-defined entrepreneurial universities in the UK respond to the policy imperative to 'becoming more entrepreneurial' differently through the coordination of their entrepreneurial activities.

6.3.1 Fledgling self-defined entrepreneurial universities

The fledgling entrepreneurial university means that the university is in an early stage of entrepreneurial development. Such university is experiencing some transformative changes and has mechanisms in place to adapt and be responsive to societal needs in an entrepreneurial manner but low in entrepreneurial activities and lack coordination. As such,

it is considered as inadequate and unconnected activities because the entrepreneurial culture is fragmented. While some of these universities put many dependencies on government fund, others receive less funding. Most of these universities were shortlisted for the NCEE THE award including U1, U3, U6, U7, and U15. Some examples of interview quotes are explained herein.

In this study, and in comparison, to the other fourteen universities, U1 was categorised as a fledgling self-defined entrepreneurial university in terms of highest funding allocation of the HEIF by HEFCE, inadequate, uncoordinated entrepreneurial activities and been shortlisted for the Times Higher Education Entrepreneurial University of the Year Award (see Appendix 21). Since over-reliance on the HEIF money tends to be problematic for the University because once this runs out there is financial difficulty and this is its weakness, therefore, suggesting that there is a need for U1 to maintain a balance between its shaping determinants such as financial capacity and leadership strength to move it away from being a fledgling to fully-fledged.

Other criteria used to typify U1 as a fledgling self-defined entrepreneurial university are illustrated in Figure 29 (see Appendix 20 for Figures 29-43). In addition, despite being in a great location, the identification of U1 as a fledgling entrepreneurial university means that its determinants and characteristics need to carry the overtone of entrepreneurial paradigm more. Though U3 might be moving slowly towards its entrepreneurial shift, there is widespread about entrepreneurship across the institution compared to what it used to be, said P18:

"I will not say our University is responding so quickly nor is a fast-moving organisation. No, it is not. Our University is moving slowly, and I think now there is awareness. [] But what is remarkable now is how widespread the changes are in terms of people finding interest in entrepreneurial activities across the wide range initiatives taking place in the institution" (P18/L60-66/2016).

U6 is also classed as a fledgling self-defined entrepreneurial university on the ground of its leadership and management lapses, coupled with other key criteria used in this thesis

285

for the cluster analysis classification. During its major entrepreneurial transformation, U6 suffers from leadership and management structure. The leadership represented through the VC and SMT (inclusive of the Head of Innovation and Enterprise) are important determinants of fostering innovation and entrepreneurial activities. They are in the best position to empower others to buy into the concept of becoming more entrepreneurial, but this lacks coordination at different management levels.

Unfortunately, this was a struggle for U6 as the old VC was himself not very proactive about enterprise and as such declined to buy-in. But with the appointment of a new VC, who understands the value of coaching and teaching enterprise and entrepreneurship, the institution hopes to regain its confidence in becoming a fully-fledged entrepreneurial university. This leadership issue was particularly striking for U6 to move enterprise agenda forward and this is reflected in the lack of coordination of its activities which are indicated by single-sided arrow (Appendix 20 Figure 34). P22 emphasises how to foster entrepreneurialism through leadership:

"It is important that you have leadership encouraging it. I suppose I mentioned it before you need leadership at all different levels and you need leadership at the highest level. [] 'It is important for a top leader to buy-in'. If you do not have that buy-in from senior management, you might forget it, but you are not empowered about it in the same way. This is important because academics and students have many other conflicting things going on and taking their time" (P22/L286-296/2016).

As listed earlier, U7 is another fledgling institution. This is because, despite its key entrepreneurial initiatives, U7 is still in a state of confusion about how to effectively organise these activities, said P23.

"I think we have to do more on publicising these initiatives and getting them right in terms of how they work; whether they go directly to the academics or whether they go through the school or whether they can be used for professorial review or review for promotion. These are questions that we have not answered completely yet but we are making progress on it because I have been doing that" (P23/L70-75/2016).

286

This lack of focus in the coordination of entrepreneurial activities coupled with other criteria led to the classification of U7 in this thesis as a fledgling self-defined entrepreneurial institution. That is, U7 is still at its early stage of an entrepreneurial turn. However, P23 acknowledges that getting academics involved in entrepreneurship is not an easy task. In this regard, P23 went further to suggest some areas for improvement. He recommends:

"I think the main one is recognition of their workload which is quite very important because their core activities are around teaching and research. Then these activities depend on the staff number. So, it is very important to let them know what the benefits are. That is, create the awareness about the gains associated with being enterprising. So, we do have to get a lot of work on the ground such as Congress, research group meetings and talking to individuals on a one-to-one basis to make sure that they understand how they can join and what the benefits are. So, it is not a straightforward engagement thing to do. But where we have engaged academics we can then use that as examples of what we are doing but again that depends on their own part if you like. They come out and talk about their assumptions about their engagement with our enterprise unit" (P23/L78-88/2016).

However, P23 identifies that funding and research opportunities are drivers for the academics to engage in entrepreneurial activities:

"…We do work with a good number of academics across the University and it is something that we are growing for example, if we look at the whole case studies where we did a proof of concept with an organisation and academics and, we learn more about the academics; what drive them for example; whether it is money or request for funding, whether it is looking at research opportunities (doing Ph.D.) or commercial activities. We understand more about our internal market and then we look at the opportunities that our clients may have. For example, we might look at our research or strategic partnership in most cases or we might look at very simple things like innovation vouchers. We might also look at other things like co-creation of knowledge, guest lectures, and graduate placement by getting students to undertake a placement in companies. These are sort of

narratives that really engage academics in terms of the reasons why they should join in" (P23/L58-70/2016).

To check how things have been improved, P23 emphasis on the impact achieved through such entrepreneurial activities. As such, he raised some questions about impact indicators. He questioned:

"…If we look at what are the benefits, in terms of return on investment? What is the staff time? Are we bringing in more students or can it help with the recruitment of students? What are the values? Is there anything associated with our marketing or brand awareness? Or can it help with the recruitment and retention of students? Basically, it takes time, it is not about tick the box only, but it has to have an impact on the work that we do…" (P23/L127-132/2016).

While participants acknowledged that there are different sets of entrepreneurial activities at U15, these are uncoordinated: "I think the first thing to mention is that at U15 there are a lot of packets of entrepreneurial activities, but they are not deeply well-coordinated. So, for a lot of the initiatives they are really organic" (P28/L9-11/2016). On the basis that there is a lack of coordination on every aspect of entrepreneurial initiatives to derive best entrepreneurial outcomes as shown using the one-directional arrow in Figure 43 (Appendix 20), U15 is classed as a fledgling University.

6.3.2 Fledged self-defined entrepreneurial universities

The fledged entrepreneurial university means that the university is in the second stage of entrepreneurial development. As such, it is high in entrepreneurial practices, but these activities are not well joined up and not well-coordinated. As such, it is considered as adequate but partly connected activities because the entrepreneurial culture is partially fragmented. While some of these universities receive a substantial amount from the government, others do not. Some of these universities won the NCEE THE Award including U4, U5, and others were shortlisted including U2, U8, and U13.

288

U2 financial strength was demonstrated through its **acquisition of a business-based high-growth company**. P4 narrates:

"…You also need the institution to behave entrepreneurially. For example, at this University, we look at acquiring companies that match our goals and aims and use them to generate income for us. Then we can reinvest that income to do more other things. So, rather than just sticking to education we recently bought a business called 'Technopole', which is a business-based and a high growth company. We bought that to generate income, so we could then use that income to do something else. So, as a University, we are looking at how we become entrepreneurial ourselves by looking for how to use unusual streams to generate income rather than just waiting for such income to come in and get fixed into that kind of routine" (P24/L194-203/2016).

The above statement reflects the extent to which a fledged self-defined entrepreneurial university can generate income through unusual means, that is, acquisition and entrepreneurial networking.

Interestingly, while bureaucracy is perceived institutional barrier, it is observed that this creates a context for a relational effect between risk-taking, opportunities, and innovation at both the individual and organisational levels. That is, there is a subjective element to innovation; where an individual (academic staff) might be willing to pursue entrepreneurial opportunities, the university as a business and risk-averse organisation might consider potential costs (mission-related, reputational, and financial) associated with those opportunities. In turn, the imbalance between the individual and organisational perspectives to risk-taking could constrain the I3EC elements. However, a balance can be derived by having viable leadership practices in place.

Some scholars (e.g. Guerrero et al., 2014, p. 419) argued that entrepreneurial universities require "leadership traits serving in professionalised full-time posts so as to accomplish their entrepreneurial mission". However, a balance between professional and academic staff might be one of the solutions to avoid bureaucracy leading to conservatism and fragmentation within the University, as recommended by P5.

289

The fragmentation of the University's group of companies is a reflection of the effect of professionalisation. Blackmore & Blackwell (2006) capture this well stating that:

There is a growing interest in transforming the way the academic community is operating, particularly moving towards taking professionalism against the backdrop of disintegration. Thus, certain areas of "professionalisation may have fragmented impact" (Blackmore & Blackwell, 2006, p. 373).

While U4 has a complicated entrepreneurial pathway, it mainly piggybacking on a group of companies as its core commercial arms, which are yet to be well-coordinated and integrated for greater sustainability and future advancement. Though there are series of Enterprise Leadership Programmes which has been reaching out to professional employees and senior member of third sector organisations as well as SMEs for professional development, U4 is classified as fledged due to its lack of coordination.

Another fledged university is U8 and to show evidence of how the bottom-up internally-oriented initiatives are informed by the top-down externally oriented initiatives, P32 makes a connection: "We have few enterprising academics who want to do more than conventional research and teaching. Quite often that involves and requires some sort of commercial structure between the University and third-party entities including SMEs, other universities, and government departments. For example, we have a group that specialises in sorting out those academic-commercial ventures but reaching across the University interest and the commercial interest of the other parties" (P32/L43-57/2016).

In describing the extent to which the University is entrepreneurial at the senior level, P32 identifies some key entrepreneurial designations:

"For example, within my team, I have Director of Enterprise Benches, Director of Enterprise Lab, Institute Enterprise Director of Project Management Office and a couple of managers in each of the faculties. These are in my direct report" (P32/L114-119/2016).

While this statement demonstrates the capacity of the University, participants acknowledged the need to do more.

"U8 is quite famous for its entrepreneurial approach; we are still at our heart of very much research and education focus and the entrepreneurial activities maybe only 10% of what we do overall. So, it is still a fringe activity. So, we rely on the Deans to encourage their faculty members to participate in entrepreneurial and translation related activities. They can do that by making time available to their academics and rewarding for entrepreneurial activities" (P32/L131-138/2016).

By acknowledging that entrepreneurial activities are still peripheral rather than core, U8 was typified in this thesis as a fledged self-defined entrepreneurial university which has gone through the early fledgling stage but is yet to enter the fully-grown entrepreneurial development stage.

For U13, despite being disadvantaged on location; the University was one of the six universities shortlisted for THE EUYA in three consecutive years including 2010. It is very interesting to find out in this thesis that one of the underlying reasons why U13 has not won the Award following serial selections was a lack of joined up in its entrepreneurial activities. P29 provides an overview of what the join up challenge was and how the University has improved on this since its last selection in 2012. He sheds light:

"One of the major challenges is that there are a lot of activities in enterprise and entrepreneurship related initiatives but not well joined up to some extent. Then providing mechanisms to join up these initiatives is certainly important and recently there is a new group formed which is called the **Joined-up Entrepreneurship Group** which recognises that there is a problem here because there are a lot of enterprising things happening within the University, but not well-coordinated as one part of the University does not know what the other part of the University is doing. Also, getting together on a regular basis helps to make sure that any activities are well-coordinated" (P29/L116-124/2016).

The above comments coupled with other criteria provide explicit insight into typifying U13 as a fledged university.

6.3.3 Fully-fledged self-defined entrepreneurial universities

The fully-fledged entrepreneurial university means that the university is in the grown-up stage of entrepreneurial development. As such, it is high in entrepreneurial practices and these activities are completely integrative because the entrepreneurial culture is fully integrated. As such, it is considered as adequate and coordinated. While some of these universities receive substantial government fund others receive less. Most of these universities are winners of the NCEE THE award including U9, U10, U11, U12, and U14. Interestingly, many of these universities are in the lower privileged regions. Underneath are some examples of interview comments about these universities.

At U9, to show the link between the engaging culture, enterprise strategy, and alumni-driven approach for effective coordination, P13 makes a connection:

"I think there are two main things we have done well. We have done a lot of things that you may see at any other university such as good programmes. But the two things we have done well include co-operating and connection and alumni engagement. We continue to co-operate across the institution; that means that faculties co-operating with the Enterprise Centre, academic co-operating with student education and business support. I think we have done a good job making that soft connection that make the people work together. A good example is that in the building next to here, [interview held in the Business School referring to Careers Centre as the next building] we work well together" (P13/L63-71/2016).

The culture and strategy of the University were strongly supported by top-level engagement with enterprise activities encouraging both bottom-up and top-down initiatives (see appendix 7 Example 6 and 7). P14 comments on how specific tenets of the University's leadership and management encourage coordination of the entrepreneurial activities:

"They really do because the Vice-Chancellor comes from the Scottish Enterprise, so he has an enterprise background. So, having the Vice-Chancellor with an enterprise background makes life so much easier for us. The Deputy Vice-Chancellor oversees enterprise which is important through to the senior management, the Departmental Heads,

292

and then to the academics. So, coming from top-down is very good and coming from bottom-up is also important as students could go there and talk to the Student Enterprise Society" (P14/L122-128/2016).

However, because enterprise activities are well-connected across the institution as shown in Figure 37 (Appendix 20) indicated with the use of double arrow, and in addition to other criteria in Figure 16 (Chapter Seven), U9 was classed as a fully-fledged self-defined entrepreneurial university in this thesis. P13 reiterates that capacity building and alumni funding provide them leading-edge in the sector: "…What differentiates us is building capacity and attracting alumni funding. So, we have some good projects for that money. But not just for the money but it is also about recognition" (P13/L216-218/2016).

As shown in Figure 38 (Appendix 20), the use of two-sided arrows indicates that entrepreneurial initiatives are well-connected at U10. Also, on the ground of being ambitious, the VC always set targets that keep the University out of debt. This strategic action led U10 to become one of the 1st top ten universities in the UK for financial stability over a long period. This groundbreaking record increases its confidence to be more responsive to changes in the sector. Praising the VC's effort, P3 confirms: "He wants to keep us in the top 10 financial stability; yes, financially stable University in the whole UK and we have been that for several years now and to maintain that position where we operate and manage what we do as an institution" (P3/L118-120/2016). Consequently, U10 is classified as a fully-fledged self-defined entrepreneurial university.

Like U10, U11 is another fully-fledged self-defined entrepreneurial university in this thesis based on how connected its entrepreneurial initiatives are (Figure 39). While commenting on the major source of income for the University's entrepreneurial initiatives, P9 laments on how U11 addressed the issue associated with the European funding. "…A lot of the projects and the schemes we have used to support entrepreneurs within the University is **European Funded** and they have come to an end. So, there has been a bit of restructuring" (P9/L6-11/2015).

The above comments signal the potential challenge in the HE sectors for the UK exit from the EU regarding funding for collaborative research projects amongst others as these will automatically stop rather than come to an end temporarily for the chance to make new applications. However, U11 has diversified its funding streams to third-leg activities by engaging more in social enterprise activities through the creation of space to generate more income. P9 explains further:

"The Social Enterprise initiative is a subsidiary of the University. It is a social enterprise and the idea is that we are a self-financing business which is about talking and talking, working and working. It is about we are a social enterprise, so we must be self-financing. So, while we are doing that we find ways of using our activities to help staff, students, and alumni to create their own social enterprises. It has a broad definition and there are several different elements to it. So, what we do is try to create **space** within the University" (P9/L41-47/2015).

Therefore, by being self-funding, U11 now relies less on government support for funding. This describes it entrepreneurial capacity in terms of finance and funding as a self-reliant and self-sustaining institution. Apart from being financially viable, U11 has a substantial level of publicity both in terms of being visible and sharing best practice. P9 highlights:

"…As part of the outcome, you will see in the local papers that the University's students launch a new business with the help of lecturers and that we are known for. From the University point of view, it does demonstrate that people have got and understand that enterprise and entrepreneurship are particularly the way of the University. Particularly in Arts and Humanities, the enterprise is a fundamental part of the students' experience" (P9/L97-102/2015).

Further to this, in describing the extent to which U11 is fully-fledged with a strong connection between its unique characteristics and distinct determinants, P9 explains:

"The University is an entrepreneurial university over series of activities. At its core, it has the long-term strategy and it grows and develops over a long period. So, one of the

294

reasons for creating the IAE in five or six years ago was to encourage entrepreneurship across the University which was why the enterprise modules and so on were created. [] Another factor that has driven these changes is that right across the University all those courses are anywhere relevant. There is at least a module on enterprise and it becomes one of the main DNAs of the organisation…" (P9/L88-95/2015).

By being able to wrap the bundle of entrepreneurial activities together as indicated in Figure 35 using a double-sided arrow, and applying other criteria for classifying a typology, U12 was categorised as a fully-fledged self-defined entrepreneurial university in this thesis. While participants acknowledged that U12 is externally driven, P16 clarifies with an example of how they manage to coordinate the multilevel activities and relationships:

"Sometimes, the Vice-Chancellor would like to see something different in the operation of the University because we are quite publicly focused. Also, we must deal with sponsors, donors and high network individuals who come to the University and how we manage that relationship is that we then lobby to the upper level of support. So, we invite the Vice-Chancellor to our competitions. For example, we have a big event in London once a year and when we go down there we put them on that" (P16/L276-282/2016).

In a contribution to continuously foster entrepreneurship in such a resilient economy, P20 clarifies the interpretation of the joined-up approach at U14: "…Having a committed resource to enterprise and entrepreneurship must have an *active approach* to developing those programmes. It has to be well integrated into the key message of the university, into the ethos of the university, into what the drive of the university is, of the belief of the university and make sure that they are coordinated" (P20/L211-217/2016).

On the notion that U14 has been trying its best to ensure that entrepreneurial initiatives are well joined up as demonstrated in Figure 42 using a double-sided arrow, coupled with other criteria for identifying a typology, U14 is typified as a fully-fledged self-defined entrepreneurial University.

While participants acknowledged the importance of effective coordination, this responsiveness gap is predominantly explained by internal determinants including leadership, management, and governance as well as the extent to which entrepreneurial activities are linked together irrespective of teaching and research agenda. According to P29 (L22-27/2016), "I think a university needs to be quite broad to allow more people to buy into it otherwise what you will end up having are faculties that aren't necessarily aligning themselves with enterprise and entrepreneurship...".

These comments suggest that there is a need for adequacy and coordination of entrepreneurial activities rather than just having them in place. Thus, for a university to be adequate and well-coordinated in its entrepreneurial activity means that there have been positive responses to all the common themes documented in Appendix 21.

Having understood where the selected cases sit in the UK HE sectors, Appendix 16 summarises their distinctive set of determinants. The next paragraph provides a summary of the chapter.

6.4 Summary

The strategic renewal component of CE was incorporated into the strategic factors. The notion of applying CE to the organisation of any size is defined in my thesis as pre-1992 and post-1992 institutions. Then these statuses influence their strategic factors in terms of how they embed enterprise with research and innovation (Appendix 20). The external and internal venturing of CE was incorporated into the classifications of entrepreneurial practices in terms of outward-facing, intra-facing, and inter-facing activities.

The findings in this thesis show that the individual university has a different set of activities leading to specialisation and differentiation in its multiple embedded relationships in the entrepreneurial ecosystem. Subsequently, the understanding of the sequence and how coordinated the dominant entrepreneurial initiatives that are unique to each case (Appendix 20) allowed for a typology of the self-defined entrepreneurial university to be developed. Therefore, the 3x3 (taxonomy, classifications, and typologies) best practice

model produced in Figure 17 (see Chapter Eight) modifies further the findings of European Commission and OECD's (2012) multiple countries qualitative research in Europe. The benefit of applying an integrated theory to this best practice model in a case-based qualitative single country research is to capture a comprehensive analysis into contextualising the subject and provide a rich interpretation of a specified set of the university. As such, this thesis captures the situational and contextual aspects of the entrepreneurial university.

Having presented the findings, the following chapter discusses the findings in the context of current literature and in relation to my research objectives.

Chapter 7 Discussion and analysis

The discussion of findings in this study contributes to the entrepreneurship literature on the determinants and characteristics of the entrepreneurial university. Particularly, insights are provided into how UK self-defined entrepreneurial universities are responding to the policy imperative 'becoming more entrepreneurial'. Therefore, this chapter discusses how the key themes identified are related to the three objectives in Chapter 1.3, the analytical framework in Chapter 4.4, and how they agree, disagree or add to previous studies.

To start with, Table 14 below illustrates the findings in the context of current literature.

Table 14: Summary of how findings respond to the literature

Prior study	Findings in this study			
	Agree	Disagree	Add	Section
EU framework (EC & OECD, 2012) the need to test the EU framework and the need to develop a comprehensive and innovative model.	x		x	7.1.1 management concept added to Pillar 1 7.1.2, 7.1.3, 7.1.5 & 7.1.6 rebranded Pillar 2 with individual and organisational-level (internal) factors. 7.1.4, 7.1.10, 7.1.13 new- extend with visibility (external) factors. 7.1.7 & 7.1.8 extend with strategic factors. 7.1.9, 7.1.11 & 7.1.12 clarify with external factors. 7.2 rebranded Pillars 3, 4, 5, & 6 with characteristics showing differentiation

Prior study	Findings in this study			
	Agree	Disagree	Add	Section
				and specialization in universities' entrepreneurial activities engagement (supporting information in Appendix 20). Thereby showing why and how different universities are considered 'entrepreneurial'. This further led to strategy types being identified for the different universities (supporting information in Appendix 19). 7.3 New- an extension of Pillar 7 with how coordinated the levels of impact (local, national, EU, & international) of entrepreneurial activity engagement are supporting the university's adaptation. Thereby showing how some universities are more entrepreneurial than others (refer to Appendix 21 for supporting information).
OECD (2008) call for the need to clarify how universities can foster innovation.	x		x	7.1, 7.2 & 7.3 with clarity on the determinants, characteristics, and definitions of the entrepreneurial (innovative) university respectively.
Lerchenmueller (2015) call for the need to advance	x		x	7.3 herein research-intensive and teaching-oriented institutions vis-à-vis Post/Pre-1992 within a 'self-

Prior study	Findings in this study			
	Agree	Disagree	Add	Section
entrepreneurship study by comparing different segments in a context.				defined' entrepreneurial university context of the UK.
Sakhdari (2016) calls for a more individual-level inquiry. The inadequate and lack of clarity or differentiation of the corporate entrepreneurial activities (see also Corbett et al., 2013; Hind & Steyn, 2015).	x			7.1.5 & 7.1.6 support the need for a more individual-level inquiry in entrepreneurship research. 7.2 confirms differentiated entrepreneurial practices.
Heavey & Simsek (2013).	x			7.1.2- my analysis supports their findings that the size and structure of the senior team influence entrepreneurial activity. It specifies that with small size decisions are quicker and vice-versa.
Barney & Arikan (2001); Zaheer & Bell (2005); Lavie (2006); Koka & Prescott (2008); Venkantraman et al. (2008); and Anggraeni (2014).			x	7.1 adds to the body of literature that has extended RBV with internal, external, or strategic factors.

300

Prior study	Findings in this study			
	Agree	Disagree	Add	Section
Morris et al. (2011); Lerchenmueller (2015); Kuratko & Morris (2018).			x	7.2 adds to the literature that has expanded CE with internal or external venturing, and strategic aspects.
Burgers & Covin (2014).	x	x		7.1.13- while my finding confirms that geographical factor determines corporate entrepreneurial activity; I did not observe organisational size as the moderating factor.
Lamidi & Williams (2014).	x		x	7.1.1- supports the idea that viable and mixed leadership styles are required to manage and lead universities in a dynamic business environment.
Davies (2014).	x		x	Table 47 in Appendix 18 and Table 60 in Appendix 19 add to how university leaders can improve their strategic practices.
Behress & Patzalt (2015).		x		7.1.2- in contrast, my analysis shows that the discontinuity of certain entrepreneurial activity is determined by the value. That is, if it no longer creates value, it can be discontinued rather than determined by past projects failure or the organisation's growth rate.
Wong (2011); Anggraeni	x			7.1, 7.2, 7.3, Appendix 16, 19 & 20-

Prior study	Findings in this study			
	Agree	Disagree	Add	Section
(2014); Lerchenmueller (2015).				support current literature on how organisations can deliberate on their strategies for entrepreneurial activities.
Barney & Arikan (2001).			x	7.1.10 and 7.3 add to the literature on why some firms outperform others.
Dutta & Thornhill (2008); Garrett & Holland (2015).			x	7.3 adds to the literature on why different entrepreneurs (universities) behave differently.
Hind & Steyn (2015).	x			7.2 supports the notion that there is a connection between venturing and strategy. This is evidenced in practice.

Note: please, go to Appendix 18 for reference to Tables 46-58 mentioned in the Chapter.

7.1 Determinants of the entrepreneurial university in the UK

In this section, findings are discussed in association with research objective 1- 'to explore the key determinants influencing the development of UK self-defined entrepreneurial universities' and the RBV 'factor side' perspective applied in this thesis. As such, the evolutionary RBV made it possible to identify, analysed and understood 13 main determinants (see Appendix 18 for supporting information). Consequently, the discussion on the amendment to Pillars 1 and 2 is amassed.

Higher education studies lack cumulative insights bringing together the roles, behaviours, and styles of LMG, this thesis has addressed this by clearly defining forms of leadership in entrepreneurial university and identifying most viable styles for

entrepreneurial transformation. Thus, this study contributes to strategic management literature about leading and managing multifaceted and multicultural institutions like the universities. For instance, Davies (2014, p. 295) invites strategic management scholars to rethink and reconstruct "how Business School leaders can improve and enhance their strategising practices". Over time, leadership and management in public sector organisations have been increasingly interrogated, particularly, exploring this within the higher education context which has been increasingly characterised by challenges and issues related to their roles in fostering innovation and entrepreneurial behaviour.

7.1.1 Leadership, management, and governance

In contrast to the EU framework, management was added to Pillar 1 as complementary to leadership and governance. This is because participants connect the ability to initiate entrepreneurial activities with the individual, faculty (e.g. manager or Heads) or to whom they are reporting or responding to who then seek permission from their bosses (e.g. Vice-Chancellors). While this suggests that within an entrepreneurial university autonomy is to some extent, it reflects a chain of decision-making route. As such, various hierarchical levels influence the entrepreneurial university either directly or indirectly. That is, the smaller the size of the management team, the quicker decision is to make and vice-versa. Consequently, this has an implication on the decision-making process of Post-1992 and Pre-1992 universities.

Following Middlehurst's (1999) suggestions that the reality of leadership must be captured in three approaches in terms of specific post-holders' roles (e.g. Vice-Chancellors and Deans), functions and as processes of social change affecting the individuals towards certain missions. Thus, the data in Table 46 (see Appendix 18 for Tables 46-58) identified key areas of LMG that is crucial to the entrepreneurial development of a university. These include LMG behaviour, LMG roles, and LMG styles.

While four over-riding behavioural dimensions were identified: the ability of leaders and managers to be committed to the enterprise agenda, engage, empower and encourage

the people to get involved in enterprise-related activities are more vital for a university in becoming more entrepreneurial, there are various behavioural components of LMG that can foster and hinder the development of entrepreneurial activities. The data set herein suggests that these major behaviours are influenced by the 'can-do and buy-in attitude' of university leaders, managers, and governors.

The importance of leadership and governance is widely supported, in particular, Pillar One of the European framework where the authors reckoned that there must be a commitment from those at the top and that evidence of such commitment is to have people at the top level with the responsibilities for driving entrepreneurialism (EC & OECD, 2012). The notion of having someone at the senior level with responsibility for entrepreneurialism was highlighted by most of the participants (see Table 46).

However, leaders, managers and governors' key underlying roles involve activities such as consulting and communicating, enhancing and monitoring, championing and delegating, resourcing and recruiting right people with keen interest in enterprise related activities, thinking and inking, and experimenting, changing, judging and executing. Though, as the roles of LMG frequently arose, the recurring theme was in relation to the Principal or Vice-Chancellor's role as well as Senior Management Team (SMT) in the successful development of an entrepreneurial university. The downside is that leaders and managers in an entrepreneurial university setting may be proactive in taking the risk because they allow a lot of experimentation encourage creative thinking and support the development of innovative ideas. This risk-taking role is unusual for many UK universities as universities are generally characterised as risk-averse organisations, said participants in this study.

In addition, three (enterprising and entrepreneurial, responsive and responsible, and visionary) out of the ten leadership styles that surfaced in this thesis is more viable in leading and managing a university towards becoming more entrepreneurial. Thus, universities must encourage entrepreneurial leadership for the effectiveness of independence (Clark, 2001). The responsive and responsible leaders have engaging

304

attitudes to inspire entrepreneurial behaviour in their people, they accept changes, react quickly to challenges as they arise and adjust to circumstances by being proactive. In common, these leadership styles are vision-driven to foster innovation with the tendency to maximise opportunities. This perspective of the people in authority is consistent with the statement that people in authority must have an entrepreneurial vision (Bennis et al., 1985) and this was repeatedly mentioned by the majority of the participants.

Whereas, it is extremely explicit that the micro-manager forms of leadership-autocratic and transactional are less feasible towards achieving the entrepreneurial transformation goals or even foster innovation. The work of Clark (2001) supports this notion when he mentioned that a dictator, tyrant and authoritarian leader cannot permanently feature in entrepreneurial universities.

Nevertheless, the significance of other forms of leadership including collaborative, transformational, business and market leadership were acknowledged by the participants. Likewise, Shattock's (2003) view expresses the idea of collective leadership when he mentions that the individualistic and central leadership alone is insufficient without shared leadership across the organisation that frequently present the centre with strategic options. In this regard, collaborative leaders are critical factors in leading and managing the multiple relationships involved in the development of an entrepreneurial university.

Bass (1990) supports the idea of a change-driven leader stating that transformational leadership upsurges employees' interests through the acknowledgment of their purposes during the transition towards organisational goal. Although transformational leadership style was hushed, yet the four LMG behavioural dimensions in Table 46 (see Appendix 18) are directly linked to its tenets. The contribution of Bjerke (1999) on business leadership becomes ageless on the discussion about this leadership style when it was conceded that culture-free business leader exists in terms of their unique character to transcend beyond their own cultural perspective. This special attribute is critical when considering the unstable globalised economy (Clawson, 2014) and the internationalisation aspect of an entrepreneurial university.

305

The understanding of these diverse LMG styles within the entrepreneurial university setting is a response to the call that there is a need for the identification of viable leadership styles for managing universities in a dynamic business environment (Lamidi & Williams, 2014). Perhaps, this thesis provides a cumulative insight into the unique characteristics of each of the styles. The identification of these leadership styles suggests that a single form of leadership cannot on its own make an entrepreneurial university. Besides, understanding how these various forms of leadership impact on innovative and entrepreneurial universities show there is an intersection between leadership, innovation, and collaboration. As such, I concede that university leaders and managers should recognise combined styles for their leadership practices.

So far, the findings herein provide in-depth insight into various LMG issues that were excluded in the European Framework. Also, by identifying a series of LMG styles, this thesis responds to the call- how university leaders can improve their strategic practices (Davies, 2014).

7.1.2 Organisational culture and attitude

The relevance of understanding the cultural perspective of an entrepreneurial university lies in its link with the ideas of innovation, enterprise, entrepreneurship, experimentation, and creativity (I3EC). Innovation and creativity are rarely perceived as synonyms. Some scholars (e.g. Amabile et al., 1996) perceived creative ideas as entrances to any innovation. This perspective suggests a link between the two terms. According to others (e.g. Amabile, 1996) innovation is the effective exploitation and implementation of creative ideas and creativity is the outcome derived from unique ideas. These different meanings suggest they are two separate terms. In relevance to this discussion, Logie's (2015) definitions indicate a complementary relationship, in what he describes creativity as a spark of idea leading to innovation, and innovation can in turn (but not always) lead to entrepreneurship, and entrepreneurship may result in new or different ideas (Logie, 2015).

While advocating for a new approach to entrepreneurship study, Gibb (2002), claims that creating an enterprise culture within a university setting is a response to the European

political imperative 'developing an enterprise culture' for greater international competitiveness, noting that, an increased interest in entrepreneurship ensued due to globalisation. Perhaps, entrepreneurship is perceived as the continuity of innovation (Drucker, 1998). The outcome of the linkages between these four terms and ideas may be described as 'entrepreneurial behaviour'- the capability of embracing and establishing change (definition has emerged from data). Therefore, the findings in this thesis suggest that there is an essential relation between I3EC and culture.

Thus, herein consider creativity as a *golden idea* that could generate innovation and innovation could probably lead to a *discovery or even an invention*. Occasionally, this, in turn, may become entrepreneurship where an enterprise is developed thereby *moving away* from the traditional ways of doing stuff. As such, this continuous transformation can bring about a changed culture which most of the participants described as an enterprise or entrepreneurial culture.

Having acknowledged the important link between the four terms, it is appropriate in this thesis to document what the findings express about the cultural factors that support IEEC. As shown in Table 47 (see Appendix 18), data suggest twelve overarching norms: encouraging openness and transparency; meeting clients' needs; building relationships; establishing and embracing change; seeking, identifying and recognising opportunities; taking risk; communicating and sharing common vision; providing internal support structures; encouraging creative thinking; appreciating efforts; developing and empowering people to innovate. In addition to the different economic ideas such as innovation, creativity, enterprise, and entrepreneurship, learning by doing or action learning was identified herein. In a simple term, experimentation makes the third 'E' in the acronyms 'I3EC'.

On a similar ground with Gibb (2002) that an enterprise is an approach of moving away from narrow paradigm was repeated several times by some participants (e.g. P4, P8, and P15) using terms such as 'jump, destructive, discontinue and moving away'. These terms are consistent with the idea of "creative destruction" proposed by Joseph Schumpeter

307

which defines entrepreneurship as a prerogative of business. To expand on the relevance and applicability of creative destruction concept as a prerogative of public-sector organisations like the higher education settings. Therefore, findings herein confirm that innovation and entrepreneurial activities that no longer appreciate should be discontinued.

Enterprise and entrepreneurship culture are a platform for tackling social exclusion which is a derivative of government initiatives associated with growing interest in small enterprise formation; social entrepreneurship; the emergence of more small businesses; increased rates of high-growth organisations and technology-generated firms; and enterprise in public sector organisations like universities (Gibb, 2002). Substantially, the focus of an enterprise culture is in different stages of education, and the major objective of embedding entrepreneurial education in the curriculum agenda is to develop entrepreneurial attributes and behaviour.

Then the comments show there is a relationship between the three types of organisational culture (collaborative, open, and enterprise and entrepreneurship) identified in this thesis (see Appendix 18 Table 47). It suggests that to become more entrepreneurial the university must embrace change which is influenced by openness to change and teamwork. From the changing perspective, OCA has a direct link with LMG. In relevance to this discussion, Bennis et al. (1985) finding becomes timeless as it points out that the philosophy of sustaining a transformation is that those in authority must be social architects to study and shape the culture of organisation, examine the values and norms of organisation and how they impact on the individual, especially in relation to changing them. This institutional habits of change are cultivated by the lucky ones; that is, the change-promoting universities with adaptability, flexibility and self-reliant nature as described by Clark (2004).

In agreement with other organisational scholars (e.g. Hofstede et al., 1990; Logie, 2015) who have acknowledged that there is a range of components such as values and structure in support of cultural development, the system was identified as an additional dimension of organisational culture. From the opinion of P10, the system of a university is

described as 3Ps: policies, procedures, and processes put in place to ensure the effective accomplishment of entrepreneurial tasks. This, in turn, determines how open the university is to explore opportunities and embrace change. For example, U10's CRM system helps to shape how it manages and deals with its internal and external relationships. Such a system can dictate how activities are organised and how resources are allocated thereby having a direct effect on what is considered as urgent and important.

A recurring theme that surfaced in terms of translating system into teaching activities is pedagogy, which was repeatedly highlighted as an influence on how topics are delivered. However, it was suggested that having the best pedagogy is not adequate without creating a supportive environment to executive it. This is important because, for some individuals, it is challenging to get things done well without the appropriate support. The apparent concern is perceived to be the culture in terms of how supportive it is to tolerate what the individual staff has brought into the institution.

Likewise, some participants shed light on the perceived tensions due to a constant battle between those who look after the system and those who are driving or receiving entrepreneurial. This is associated with resources allocation between academic and admin staff. This does not conclude that all participants admitted there was a lack of supportive culture within their individual institution per se; rather it raised a potential issue. Thus, other participants signaled that structure and system should not be used as mechanisms for not been able to carry out entrepreneurial tasks and suggested that universities must crack on structure and system that support their core business and what they are doing.

To wrap up this discussion, organisational culture is the main thing. The organisational culture affects the staff, the pedagogies, strategy and all these will affect the students. This implies that the cultural perspective of any universities determines their responsiveness to the entrepreneurial pursuit. This implies that transformational change is the evolving entrepreneurial role of universities that are making them more responsive to social and economic demands. Responsiveness in adjusting and readjusting their culture, systems, and structures in an entrepreneurial style (Kuipers et al., 2013; Stensaker & Vabø,

309

2013). While from a narrow perspective, Etzkowitz and Dzisah (2015) describe this as the cultural transformation of universities to play significant roles in the knowledge-driven economy, Williams et al (2015) pointed to it as a structural transformation to revitalise the regional and national economy. In either path, the important thing is that there is transformational change.

7.1.3 Financial capacity

As expressed in Table 48 (Appendix 18), participants recognised the importance of the financial capacity of their universities drawing on costs and budget instances which they link directly to sources of income. Apart from teaching and research income, entrepreneurial universities generate income through various means including acquisitions and redundancy. In contrast to the EU framework (EC & OECD, 2012) that ascribed capacity to non-monetary only and in addition to Clark (1998) sources of third stream income, redundancy (non-monetary) and acquisitions (monetary) are uncommon income generating means among the entrepreneurial universities.

Using the descriptor diversified funding base to raise the importance of financial capacity, Clark (1998) points to three sources of income for public universities, namely: government funds (block grants), Research Council funds, and third-stream income that is true financial diversification. These statements fit well with the characteristics of UK universities as many are public with the likelihood to encourage the development of their financial capacity through any of these three means. In a different publication, Clark (2004) identified student tuition fees, endowments, alumni-funding, campus operations, licensing of intellectual property and royalty income from patented inventions as sub-streams of third stream income. To add to this list, acquisition, and redundancy in Table 48 may complement Clark's view on sources of third-stream income.

By acquisition, this thesis refers to any sources of income from both internal and external streams for universities, and this involves generating funds by taking over other organisations' business activities or even their properties, collaborating with other universities to provide education services for income generation purposes as well as

310

merging less income-generating departments with substantial ones. The cumulative effect of acquisition is that a university expands its own course thereby relies less on government funds, in turn, this provides flexibility and autonomy for such institution.

It is crucial to maintaining a strong financial position because most sensitive financial instruments are effective ways of developing and sustaining an academic entrepreneurial culture (Davies, 2001). Clark (1998) adds that a change-driven university needs greater financial resources, and that change becomes a habit that may lead to an institutionalised state of being (Clark, 2015). In considering the issue of balance, strong emphasis was also placed on course programmes which have a direct bearing on student fees. While this supports the notion of Clark (1998; 2004), it contradicts Slaughter & Leslie's (1997) findings that overlook basic research including efforts to generate university income through recruitment of students who would pay full or high fees. Categorically, full or high fee-paying students are international students which entail global and international education markets. Then if Slaughter and Leslie (1997) exclude globalisation and internationalisation which are influential in creating an entrepreneurial university, this is at odds with the whole notion of expanding third-stream income as part of funding diversification (Langridge, 2006).

Thus, financial capacity determines and shapes the future of the university and this was emphasised by some participants as 'future proofing' and 'financially prudent'. Perhaps, some higher education scholars have acknowledged that an entrepreneurial university is a place with the capacity for changes (Clark, 2015), and in his concluding thoughts, Clark (2015) expresses that a diversified income is perhaps the most enabling of all.

In the context of financial capacity, the entrepreneurial university does not happen overnight, it takes time and as such requires financial planning and assessment by taking into consideration the questions raised by P24 regarding which area of entrepreneurial activities is the money required for, when and how much is needed. Nevertheless, any university can experience financial difficulty issues at any time. Therefore, this thesis concedes that the financial capacity of an entrepreneurial university expresses its forward-

311

oriented, forward-looking, self-reliant and self-supporting, self-sustaining and self-determined entrepreneurial edge in responding to societal demands and expectations.

The discussion on financial capacity was well summed up by the EC and OECD (2012), under Pillar Two emphasising that it is crucial for the university to invest in its entrepreneurial activities through a sustainable financial strategy, but it is not good to rely much on limited sources of public funding. Therefore, the entrepreneurial university objectives must be backed up by a wide variety of funding sources or investments including external stakeholders' investment.

7.1.4 Physical resources

In his substantial work on what he described as 'five pathways of transformation', Clark (1998) uses a unique descriptor known as an expanded development periphery to explain the importance of entrepreneurial-based departments that enterprising universities exhibit a growth of units that, more readily than traditional academic departments, reach across old university boundaries to link up with external organisations and groups. It is crucial for entrepreneurial universities to take the risk of promoting an entire new periphery of non-traditional units.

However, responding to the changes in the society requires extensive organisational creativity taking place within certain entrepreneurial units. From Clark's (1998) view, the development of new peripheries takes various forms including managerial centres that aid research and education contracts, including consultancy. As such, participants make connections to how different departments (e.g. engineering or science) operate differently because they have access to major grant to keep key pieces of equipment that give them a competitive advantage that not so many universities in this country can do that for. As such, different universities develop differentiated responses to the entrepreneurial transformation.

Using PVM (see Appendix 7- Example 9), participants emphasised the significance of providing space for solving societal problems. The implication of this is that universities are

fulfilling their socioeconomic role in terms of regional innovativeness by helping businesses including SMEs to overcome the challenges relating to working space. Having acknowledged the importance of physical environment, some participants (e.g. P5, 12, and 24) have cautioned about over-eagerness, keeping a tight rein and not doing it at the detriment of the traditional education purpose of the university.

7.1.5 Individual abilities and capacities

Findings in this subsection support Davidsson et al. (2006) notion that enterprising individuals or highly skilled staff are associated with certain resources. To demonstrate the significance of human resources, participants recognised the importance of individual abilities and capabilities to the sustainable development of universities as entrepreneurial organisations (see Table 50 Appendix 18). They acknowledged that it is more than people, but a lot can be achieved with people than anything else. Other factors such as employment backgrounds, experiences, skills, and expertise of the enterprising individuals are identified as influential to social enterprise activities and entrepreneurial reputation of a university.

Findings herein could also add to the body of literature on types of entrepreneurs (e.g. Dutta & Thornhill, 2011; Garett & Holland, 2015). Based on the extent to which academics are engaged in entrepreneurial activities, two types of academic entrepreneurs are distinguished in this thesis.

The *serial entrepreneur*, a kind of person who is just entrepreneurial and will find a way of making money setting up several businesses and this type of entrepreneurs will start a business and sell a vision and may start product design related stuff. But because of testing the product design and if they have no test for the product such an entrepreneur might lose money in the industry. So, this type of person engages very easily with the University because it is all about doing things that directly link to what the University is doing in terms of looking for new knowledge and new ideas. So, generally, such a person is financially buoyant looking to expand and finds it very easy to engage with the University

313

and do a different kind of projects. Their unique attribute is that they possess a very distinct skills level to be entrepreneurial.

On the other side, there are the *subject entrepreneurs* who stick to their field and start with only one product but want to grow that bigger and bigger but if they launch new software they probably spin-out new company. That kinds of person unless they have a business need that a university can fulfil such as a building they can occupy or working space, they need an extremely subject specific expert. That is, they only need the University if it can do something for their businesses that they cannot do themselves and worth the money paying for.

The main difference is that the entrepreneurs labelled as the serial engage easily with any universities and the latter only need a subject expert of the university and it is not about whether a university is entrepreneurial, but does it have the expertise in their subject areas. Nevertheless, there is a kind of link between the two because what you normally find is that the serial entrepreneurs become the investors in the subject entrepreneur's business area or use them when they are looking to expand and look for someone who has done it before to deal with what they are doing in their businesses.

My analysis suggests that the assessment of the know-how of students determines the sort of entrepreneurial support they receive. Therefore, this requires that universities must develop capacity by working with other educational providers and users of knowledge as well as developing competencies in their users (such as students and enterprises) for the current working conditions (Potocan et al., 2016).

However, while the university may make provision to support the entrepreneurial development of people, the people also need to have confidence in acting and taking initiatives. Otherwise, this could, in turn, become a potential barrier for the entrepreneurial transformation of a university.

Further to this, some participants pointed out that there may be tension between individual personality and group expectation. This suggests the extent to which the expectation of a certain group may affect individual innovativeness.

314

7.1.6 Motivational factors

In Appendix 18 Table 51, results show that engagement in entrepreneurial activities does and does not appeal naturally to some academics and that the method used to motivate them may inbuild in them the entrepreneurial spirit and vice-versa. In contrast to the EU framework, I identify institutional factors, autonomy and freedom at the departmental level as both motivators and demotivators.

As discussed in sub-subsections 7.1.1 to 7.1.6, Pillars 1-2 of the EU framework are associated with internal determinants in this thesis. Consequently, the two pillars are modified and expanded with management, culture, and physical resources. As such, the external (sub-subsections 7.1.9-7.1.13) and strategic (sub-subsections 7.1.7-7.1.8) determinants in the next discussions are newly added to the EU framework.

7.1.7 Organisational objectives and reputational strategies

As noted in preceding sections that there is a link between teaching, research and enterprise strategy, some participants clarified that it is not essential for universities to have a separate strategy for enterprise since they already have one for research. This supports Kuratko and Morris (2018) notion that organisations struggle with having thoughtful strategies to stimulate entrepreneurial activities. However, such struggle could be due to the ability of the management because most of the participants emphasised how essential it is to have clear and visible strategies that align universities' objectives with that of their stakeholders (see Table 52 in Appendix 18). On the notion that research is close to enterprise and innovation, participants outlined how national agenda (e.g. HEFCE) drives Business School to put up a strategy that supports work with external businesses. This agrees with Anggraeni's (2014) notion that an integrated and coherent strategy shapes the balance between an organisation and its business network.

7.1.8 National objectives, priorities, and requirements

The recurring message in the interview extracts (see Appendix 18 Table 53) is that government via various forms of frameworks is controlling and shaping the universities' direction toward being more entrepreneurial. This is done by giving them challenges to work up to and opportunities for transformation. It is challenging because all these frameworks create an intensely competitive environment because they are measured and provide an opportunity for recognition as they are ranked. Therefore, findings herein add to entrepreneurship literature (e.g. Dutta & Thornhill, 2011; Garett & Holland, 2015) on the notion that corporate entrepreneurs (herein referred to as universities) are analytic and comparatively risk-averse because they rely on prevailing norms and frameworks, as previously explained in Chapter 3.1.

For example, universities are measured and ranked primarily on the REF and TEF in terms of first and second mission and to stay competitive in the HE sectors and in a highly competitive environment, they need to focus on teaching and research only. However, this could influence the people to take their eyes off the enterprise agenda for its own sake. So, they focus on impact relating to REF and graduate employability relating to TEF making sure that quality in teaching and research is reflected in maintaining their positions in terms of REF scores and the TEF results. So, importantly, they must get their core right, for example, if they can show that their teaching and research are as good as possible and that they are structured on a financially sustainable business model, they make sure that it is reflected in their reputation and ranking like the League Tables, REF or TEF.

To some extent, TEF, REF and enterprise impact (measured via Times Higher Education NCEE award) are frameworks considered as elements of competitiveness in the UK HE sectors. That is, teaching, research and enterprise are the basis upon which universities compete to become more entrepreneurial. Again, this presents strong evidence that supports the notion of the complementarity between the three missions of a university.

So, there is a regional agenda and equally a national. In the UK, the government has what is called the industry strategy which has 11 priority thematic areas and there are great

eight technology areas and to align programmes into those areas are critical. This is because for funding, either for research or enterprise, the government is aligning its own funding priority into these thematic areas. So, some universities' strategy might reflect that the research strategy is about using inspired research with impacts which are informed by external demands.

7.1.9 External funding and government expectation

As documented in Table 54, apart from the financial capacity discussed in preceding paragraphs as internal resources, different funders and various political and funding issues related to entrepreneurial development were identified. In contrast to the EU framework (2012), these include Brexit uncertainty and developing a working relationship with Local Enterprise Partnerships (LEPs) to obtain funding from the government.   As such, participants' opinion expressed that, for funding attraction, it is crucial to be knowledgeable about the main themes specified in various strategic partnerships.

So, it is crucial for universities to understand the regional strategies as well, the LEPs in the UK which each one has its own strategic economic plan and understand the themes that sit within that and how the university align to that drawing down infrastructures and strategies (research or business relationship strategies) is key. So, an entrepreneurial university today really need to act like a civic university of the 21st century, as highlighted by some participants.

Therefore, findings herein support the strategic view of CE (e.g. Corbett et al., 2013; O'Connor & Rice, 2013) that organisations may not necessarily set up a new business (herein start-up or spin out activities) but have a proper understanding of and an intuition about the changing environment involving multiple actors. Being knowledgeable of the funding, political and economic issues is critically important because increased competition in the HE sector makes the system become more complicated and a bit of a mess, said some participants. So, some universities take advantage of their internal resources (e.g. personnel) to attract externally by getting out regularly meeting more people (P9/L488-490/2015).

317

In turn, using a warm calling strategy shows how some universities explore the opportunity to stay ahead of the market competition. While acknowledging that different universities have different funding models, some models are considered more challenging than others. For example, participants distinguished between faster and slower model. The alumni funding (e.g. alumni donations) being the faster and funding from the government (e.g. HEIF, HEFCE, and European or ERDF funding) being the slower because different requirements must be met.

This suggests that universities must have their own funding model rather than depend extensively on that of the government. As highlighted by some scholars that the attraction of enterprise income is from sources like the HEIF (Woollard et al., 2007).

7.1.10 Corporate brand awareness

As clarified in Table 55 (Appendix 18), becoming an entrepreneurial university is itself a stamp and gives such institution an identity to be associated with. This self-identity speaks about what the university is good at and known for in an entrepreneurial sense. To express their views on why being shortlisted and winning the Times Higher Entrepreneurial University of the Year Award is important for competitive and market environment, some participants used terms such as 'brand', 'positioning', 'niche', 'reputation', 'stand out' (e.g. P3, P7, P8, P9, P23) and others used words like 'status', 'badge' (e.g. P4, P14). The Award raises awareness about why the winning and shortlisted institutions stand out from their various institutional groups such as Russell or Alliance. For example, some participants distinguished between how different groups of universities brand and position themselves based on enterprise-based subject or discipline (e.g. high in Engineering) to initiate entrepreneurial behaviour in students. Such areas are well branded in some universities' brochure than others.

Participants' view clarified that receiving the prestigious entrepreneurial badge is unique for Pre-1992 and Russell Group universities members because they are not always known for being entrepreneurial. So, this distinctively stands them out from their peers in the same Group and represents their current state in the modern environment. Naturally,

318

the enterprise was associated with the business concept and therefore, not an adapted word in universities, especially in Russell Groups. Nowadays, things have totally changed as universities must be enterprising and entrepreneurial just like every other organisation out there. Consequently, embed enterprise for staff and the opportunities for them, enterprise for students and graduates and the opportunities for them to deploy resources.

These analyses indicate the extent to which tradition and status of universities shape their entrepreneurial outlook. As such, in pursuit of entrepreneurialism, some of them are in partnership with the modern association such as the European Consortium Innovative Universities and more interested in working with old institutions that have been entrepreneurially grounded such as MIT and Stanford University. So, being entrepreneurial is growing up a lot and continuously evolving.

Such association with U.S. based outstanding entrepreneurial universities suggest distinct positioning by having certain elements in common, which include their entrepreneurial brands. Clark's (2015, p. 2) concluded that: "there is finally, only one MIT, one Twente, and one Monash". That is, there is also only one Stanford, one U13, and so on.

From the recognition perspective, participants disclosed how the universities' recognition is shaped by the resources (using their own individual networks) to striking balance between strengthening partnerships and enhancing their collaborative capacity. So, being identified as entrepreneurial means it happens a lot because *more people are interested in the University now than before*.

To summarise the discussion, some participants commented on how being entrepreneurial is important for universities' reputation and ranking because they are continuously going up and increasing their reputation over time. So, being entrepreneurial is massively moving forward and that is by being innovative. Therefore, embracing it not only through teaching, but embracing it within the management structures because so often universities teach one thing, but they do not do what they teach and that is something that all other universities are guilty of, especially within their business or management schools.

319

Thus, findings herein have implications for managerial practices to be more outward-facing and practice what they teach.

7.1.11 Entrepreneurial opportunity exploitation and exploration

As highlighted in Table 56 (Appendix 18), the keywords: recognise and pursue opportunities are important factors for people to drive some of those changes toward entrepreneurialism. As such, some participants outline the perceived organisational risks associated with entrepreneurial opportunity exploitation and exploration as *loss of money* and *loss of energy*, as well as their *managerial time*. This generates some questions about how much effort it will take even if universities make a success of it? What does the opportunity cost involved for internationalising? For example, to set up a campus in the Middle-East or the Far East, how much effort will that use as well as money? What would the university have done or considered rather than that? Will people forget about it? What is the amount of capacity required?

The questions outlined above express that thoughtful consideration must be given to the benefits and costs of exploiting internationalisation opportunities. Though internationalisation tends to be a significant aspect of an entrepreneurial university, it takes different forms and sizes. That is, a university does not necessarily need to build campus overseas but can still have foreign present while in its home country. The findings herein add to CE literature (e.g. Corbett et al., 2013) that business activities come in various shapes. The implication is that these questions may inform the managerial toolkit for assessing entrepreneurial activities before, during, and after being initiated.

In addition to being able to recognise, exploit and explore opportunities, different types of entrepreneurial opportunities emerged: collaboration, internationalisation, investment and/or resources, innovation, and new business and start-ups were identified in this thesis, as shown in Table 56. However, collaboration opportunity is the most apparent followed by start-ups opportunity.

Further to this, quotations in Table 56 suggest the need to collaborate for funding and employability opportunities. It was also observed that funding is a common element between the five types of entrepreneurial opportunities. Therefore, one could assert that entrepreneurial universities' ability to identify, exploit and explore opportunities can be considered as a strategising tool for funding.

On the ground of strategising, some participants emphasised the idea of scanning the environment to predict the future. The ability to search, scan, source, and screen the market and competitive environments to exploit and explore opportunities was identified as a crucial part of the development of an entrepreneurial university. Participants outlined that universities must give people the opportunities to lead, create new opportunities, *recognise* and *explore* those opportunities. Thus, *identifying* opportunities and *driving* those opportunities to produce and develop new but also quality products and services.

The keywords: recognise opportunities and pursue opportunities are important factors for people to drive some of those changes themselves. As such, factors herein were coded as entrepreneurial opportunity exploitation and exploration.

7.1.12 Entrepreneurial networking

Though networking is mentioned in the EU framework as Pillar 3- Pathways, it is associated with entrepreneurial education only. In this thesis, it emerged as a key factor that feeds across the university. This is because it affects all levels (individual, organisational, and relationship with both business and non-business associates). As succinct in Table 57, participants explained how previous contact and existing networks can be utilised to initiate a new project. Further to this, the findings enlighten us on the extent to which a well-established link can help to maintain a leading edge in a niche market. For example, for an industry to engage with a university in terms of knowledge transfer partnerships there must have been extremely strong links with certain industry like automotive, art design technology, serial games where such institution have engaged. As such, some universities like Birmingham and Warwick are in automotive. So, this makes it

difficult for other universities like Coventry in the same region to compete in the same industry because both Birmingham and Warwick have been well known for that key area for a longer time, and they have established the track records. Rather other universities may develop mainstream in niche areas. Consequently, this provides specialisation opportunity for the Post-1992s to focus on specific niche areas. For example, U11 carve a niche by focusing on transformational entrepreneurship which is embodied in internationalisation thereby expanding beyond regional or home market using its international contact. This supports Kempton et al. (2013) notion that universities will be known for smart specialisation.

Furthermore, a series of networking opportunities were identified including industry, research, and investment. Some participants noted how being a delegate at relevant programmes can provide an opportunity for networking. Apart from attending educative events, participants identified other routes (e.g. interface via referrals through their supply chains, websites, word of mouth, and social media routes) to networking. This also includes close working relationships with other universities signposting people around the economy for enterprise partnership.

In addition to all these, extending network reach may maximise the chance of winning the Entrepreneurial Award. This suggests that the universities' ability to provide networking opportunities can shape the balance of being recognised as entrepreneurial and expand their organisations' business network. That is, findings in subsections 7.1.10, 7.1.11, and 7.1.12 are practically linked.

7.1.13 Geographical location

The geographical factor is an addition to Pillars 1 and 2 of the EU framework. This is because concepts such as localisation and entrepreneurial ecosystem are recognised as drivers for the entrepreneurial university. As such, this adds to the body of literature (e.g. Audretsch, 2013) that consider that location matters in entrepreneurship. While competing on a geographical level, some universities stretched out by building campuses in the heart

of England, London. In so doing, it is assumed that they can attract more students and more businesses as Central London is highly populated. However, some universities are very conscious of the risk associated with having campuses in different locations. U10, a fully-fledged self-defined entrepreneurial university took the decision not to join the London-based campus group, yet it is entrepreneurial to the core. U10 is very cautious about closing campuses shortly after being established. Particularly, by considering the resources (time and money) and other activities to undertake that could generate more income.

The economics and management disciplines of entrepreneurship (Figure 5 in Chapter Three) surfaced herein when participants drew on the link between employability and entrepreneurial ecosystem. On the employability side, participants shed light on how the graduate level job is affected by the location of the universities. This is highlighted in relation to job accessibility (how easy or hard to get graduate-level jobs) students after graduation based on the number of businesses in the area. From the entrepreneurial ecosystem side, participants explain how the vibrancy of a location can foster support for university entrepreneurship. They emphasised how a variety of resources are available to support any stage of entrepreneurs in a more exclusive location that is enhanced by governmental support for funding. This supports Davidsson et al. (2006) notion that micro-level environment is a fundamental rationale shaping macro-level analysis. This suggests that the entrepreneurial university takes a genuine interest in the creation of job and contribution to the economy.

The entrepreneurial ecosystem is quite vibrant in some places (e.g. Scotland and England) than others. This is because of a lot of the individuals who have developed their own businesses and have grown to scale and are quite willing to give back by supporting entrepreneurship in a variety of different ways. They are persistently engaging with students to help them take their businesses to the next level.

To round up discussion on geographical location, this thesis concludes that place is critical to the enterprise. This is because it is much tougher for a university based in a

323

peripheral, low-value economy (like U10) to engage high-value companies in high-value activities than it is for a university based in London or a similar city (e.g. U9 and U11).

An important observation is that competition is repeatedly emphasised in the majority of the 13 determinants as a key driver for focusing on certain entrepreneurial activities. Therefore, university competitiveness is a common element. The implication for this is that RBV and CE applied in the study is further justified in the emergent data as appropriately conducive.

Figure 14 summarises discussions on the emerging themes and show the link between the three determinants. It is worth noting that emerging themes in Figure 14 were not arranged per the frequency mentioned by participants but presented in the order identified in the analysis.

Leadership, Management and Governance

Financial capacity

Organisational culture and attitude

Physical resources

Motivational factors

Individual qualities and capabilities

Internal determinants

External determinants

A 3-dimensional taxonomy of determinants shaping the entrepreneurial university

Corporate brand awareness

Funding and government expectations

Entrepreneurial opportunity exploitation and exploration

Geographical factors

Making contacts and networking

Strategic determinants

Organisational objectives and reputational Strategies

National objectives, and priorities requirements

Figure 14: 13 determinants and 3 taxonomies

Having provided an in-depth explanation of the data related to determinants, those associated with the characteristics are discussed below.

325

7.2 Characteristics of the entrepreneurial university

The results herein are discussed in association with research objective 2- 'to identify the key characteristics of the self-defined entrepreneurial universities in their own context' and the CE 'activities side' view adopted in the thesis. In contrast to the European framework, this thesis recognised three unique classifications of characteristics: (i) intra-facing embodied in the enterprise for staff and students including graduate entrepreneurship and self-employment; (ii) inter-facing embodied in professional service units and regional boot camps; and (iii) outward-facing embodied in provision of space to SMEs, expansion of physical present, and acquisition of business and government properties as associated with UK entrepreneurial universities. Thereby amending Pillars 3-6 with intra (Pillar 4), inter (Pillar 3), and outward-facing (Pillars 5-6) activities.

Figure 16 below summarises the emergent themes for the characteristics of the entrepreneurial university. The dashed line used to house the inter-facing activity is an indication of connectivity between the university and external engagement. While activities in each practice may vary, the double arrow expresses that they are influenced by one another and this may not necessarily happen in a linear manner.

In addition, the findings suggest that student enterprise and knowledge exchange activities are common denominators among UK self-defined entrepreneurial universities. Entrepreneurial activity in UK HEIs covers a broad spectrum of activities taking place at different levels in different ways as observed in the narratives of the individual case. As such, and as has been stated in Chapter Three, this thesis emphasises that entrepreneurial activity evolves as multilevel relationships that embed multiple actors (individual entrepreneurs, faculties, business, government, and society) as such taking place at various levels (individual, organisational, industrial, governmental and societal).

Outward-facing:
Community and external engagement, acquisition of business and government properties, commercial arms, support to business organisations particularly innovative SMEs (space provision and regional engagement).

Collaboration and partnership types: research collaboration, corporate or strategic partnership, private-public engagement, University-to-University (U2U) partnership.

Inter-facing:
Professional service units' integration, commercialisation

Regional and national competition (boot camps and summer schools), business challenge projects.

Entrepreneurial development, education and support.

Intra-facing or student-facing:
Start-ups, graduate entrepreneurship and self-employment.

3 classifications of entrepreneurial activity

Key entrepreneurial actors herein are: students, graduates, academics and enterprise staff.

Entrepreneurial designation, departments, and research groups.

Incubators, innovation centres, IPOs, research institutes and Parks, TTOs, knowledge exchange and transfer activities.

Internationalisation: ERASMUS, Horizon 2020, student exchange program, foreign campuses, overseas partnership and collaboration, student socialisation.

Key entrepreneurial actors herein are: enterprise staff, academic & industrial scientists.

Key entrepreneurial actors herein are: professional and business support staff, funders, alumni, banks, investors, venture capitalist, SMEs, government bodies other universities.

In a clearer way, Figure 15 synthesises and virtualises the classifications of activities. While the double arrow shows a two-way process in terms of the elements influencing each other, the single arrow indicates a linear process with a direct flow outward without inward flow back to other elements.

Also, the results generated the case-by-case models (see Appendix 20) that map the distinctive set of characteristics defining what each university has in place and how used to adapt and respond to the policy imperative 'becoming more entrepreneurial'. These activities are unique to each case in terms of the selected universities. The importance of the case-by-case models is in several ways. First, they show how entrepreneurial universities are internationalising by competing beyond their domestic markets and through the adaptation of their strategies. Second, they explain why it is important for universities seeking entrepreneurial paths to ensure the coordination of their entrepreneurial activities. Finally, they show how the strategic actions and entrepreneurial culture are embedded to generate entrepreneurial outcomes and impacts.

As identified in the interview session, within each model the benefits associated with engagement in entrepreneurial activity to a wide range of actors from individual to organisational and from organisational to wider societal gain taking place across various levels are also discussed. For example, individual impact or academic value is associated with both personal and professional development of the individuals such as entrepreneurial skills and talent. Organisational impact includes benefit to the university undertaking the entrepreneurial activity and to other organisations or bodies that have working relationships with such a university; these include reputational image and helping businesses to address their business problems.

Extending beyond individual and organisational benefits are gain to the society in the form of public value, these include economic impact such as national competitive advantage; political impacts such as new policies and standard; social impact such as training and development of people for future uncertainty, and cultural impact such as the

328

encouragement of an entrepreneurial ecosystem that foster entrepreneurial mindset and attitude of the people to be more entrepreneurial. The various levels at which the involvement in certain entrepreneurial initiatives influences economic development are mapped on the 'Y' axis of each case-by-case model for the individual university.

In each model, it is conceded that different universities with the same educational orientation and power status might have different models depending on where the emphasis is placed by participants within the individual institution (see figure 29-43). The use of a case-by-case model was prompted because generally, entrepreneurship research lacks virtual approach in reporting findings, particularly practices that entails multidimensional and multilevel relationships. As such, I argue that to reconcile these shortcomings, there is a need to pursue a more virtual methodical approach to presenting how certain entrepreneurial practices may be beneficial to different levels.

In filling this gap, I borrow heavily from the field of management, specifically international business mainstream where such methods have been applied. Therefore, following Boojihawon and Acholonu's (2013) reporting style, charts are used to illustrate how the key entrepreneurial initiatives at the individual institution are shaped by embedded and nested relationships across local, national, European and international different levels.

In addition to this, these case-by-case models (see Appendix 20) visualise how these universities respond differently to the policy imperative 'becoming more entrepreneurial' thereby contributing to socio-economic growth by showing the entrepreneurial activities against levels of impact.

Since this study advocates for the application of an integrative theory which combines RBV with CE for (i) making a clarification between the actual determinants and characteristics in the seven pillars of the European framework; (ii) identifying other taken-for-granted factors and characteristics; and (iii) gaining insights into how different universities with different or similar institutional status and power in the same country have different responses to becoming more entrepreneurial.

Different universities with different status have heterogeneous focus. While pre-1992 are more inclined to spin-off activities which can generate spin-out companies, post-1992

are more inclined to start-ups activities which can generate students' enterprise or graduate businesses. That is, the teaching-oriented post-1992 (e.g. U10, U11, U13) emphasise more on softer forms of engagement including SME collaborations whereas, the research-oriented pre-1992 (e.g. U8, U12, and U15) focus on harder forms of engagement including hi-tech, biotech and spinning out companies which reflect their research intensiveness. The technological-oriented universities (e.g. U14) maintain a balance between harder (spin-outs) and softer (start-ups) forms of knowledge exchange.

While this differentiation was contingent on their institutional status and historical background, the majority of post-1992 universities do engage in students' business start-ups because they do not have spin-out policy and agenda as well as funding to support and drive harder knowledge exchange activities like their pre-1992 counterparts. However, engaging in softer knowledge exchange activities is good for their employability metric in the League Table, particularly, DLHE. This in turn, impact on their students' experience. In common, both pre-1992 and post-1992 universities certainly engage in knowledge exchange activities.

7.3 Discussing the judging criteria for the typologies

In this section, findings were discussed in relation to research objective 3- 'to identify the typologies of UK self-defined entrepreneurial universities' and within the integrated analytical lens (both factors and characteristics sides) of RBV and CE. As such, the discussion on the changes to Pillar 7 is amassed. Consequently, three types of UK self-defined entrepreneurial universities are recognised. These typologies range on a continuum from a fledgling, fledged, to fully-fledged based on the extent to which the universities are entrepreneurial. Insights into the typology have implication to understanding how some universities are more entrepreneurial than others. In doing so, it provides a response to the call for advancing entrepreneurship research by comparing segments within a context (Lerchenmueller, 2015).
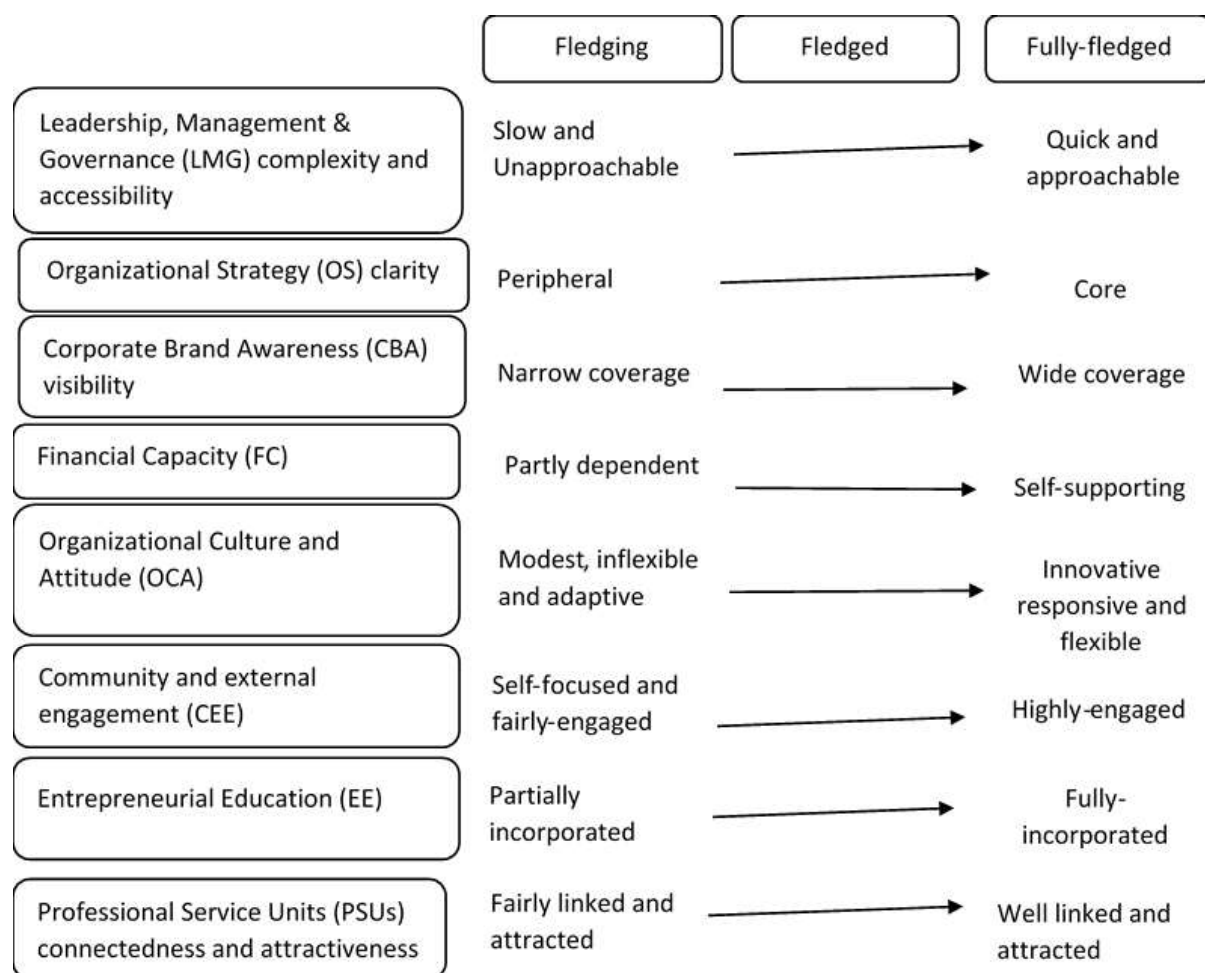
330

In contrast to previous studies (e.g. Yokoyama, 2006), these typologies are directly connected to the developmental stages towards entrepreneurialism by showing the extent to which different factors and different characteristics of these universities shape and define their entrepreneurialism. Therefore, the empirical interpretation in this thesis suggests a linear approach in these three phases (fledgling, fledged, and fully-fledged) of entrepreneurial transformation. For example, the universities low in entrepreneurial activities that have bid for the NCEE THE award but not yet become winners must demonstrate how their entrepreneurial practices have improved following their initial applications if they are to bid again.

Likewise, those universities high in entrepreneurial activities that have already won the award must show strong evidence that there are significantly different from what they are currently doing compared to what has been done and demonstrated when they won the award if they are to reapply and win again. To enhance entrepreneurialism, participants expounded that universities must improve in all aspects of what they do whether that include world-leading, role changing and thinking about doing things differently which is not even easy.

Another interesting observation is that while it is generally challenging for all universities to connect entrepreneurial activities to the different parts of their institutions, it is more pertinent among large-sized and pre-1992 universities than in mid or small-sized and post-1992 institutions. The two major reasons that surfaced in this thesis for this degree of connectedness and responsiveness include cultural and structural perspectives of universities.

On the side of the culture, post-1992s are more flexible and easily adapt to changes than pre-1992s that are more conservative and traditional. Structurally, post-1992s tend to have a small number of strategic management teams with a flat structure which facilitates their decision-making process than as within pre-1992s with a hierarchical structure which makes decision-making process to be slow thereby responding sluggishly to changes in the sector. This evidence demonstrates the complexity in the UK HE sectors in terms of the issue of flexibility.

331

Hence, the pre-1992 universities' administration is associated with many rules which make it somehow more difficult to do something outside of teaching and research, especially to do things within the curriculum. Then the great challenge is that if entrepreneurship is meant to be thought with experiential components, the post-1992s are more likely to be more adaptive to this teaching method on time because of their historical and educational orientation, i.e. teaching oriented. Participants commented that the modern universities found it easier to be proactive than some of the very traditional universities. Some participants clarified that British universities are typically not used to that method of teaching because they are mostly used to traditional exam-based mentality and ways of delivering courses.

	Fledging	Fledged	Fully-fledged
Leadership, Management & Governance (LMG) complexity and accessibility	Slow and Unapproachable	→	Quick and approachable
Organizational Strategy (OS) clarity	Peripheral	→	Core
Corporate Brand Awareness (CBA) visibility	Narrow coverage	→	Wide coverage
Financial Capacity (FC)	Partly dependent	→	Self-supporting
Organizational Culture and Attitude (OCA)	Modest, inflexible and adaptive	→	Innovative responsive and flexible
Community and external engagement (CEE)	Self-focused and fairly-engaged	→	Highly-engaged
Entrepreneurial Education (EE)	Partially incorporated	→	Fully-incorporated
Professional Service Units (PSUs) connectedness and attractiveness	Fairly linked and attracted	→	Well linked and attracted

Figure 16: Eight common judging criteria for identifying the three typologies

Source: Author's own

As shown in Figure 16, the universities were assessed based on the three most common characteristics in relation to entrepreneurial practices: CEE, EE, and PSUs. While all these universities engage in some sort of external activities, knowledge transfer is the common denominator of entrepreneurial activities for the pre-1992 institutions and the reason for this is directly link to their research and resource intensive capacity to spin-out companies. Student enterprise commonly emerges as the similar denominator for them as well as the top five highly emphasised determinants. Three from the internal determinant: LMG, FC, and OCA, one from the strategic determinant: OS and one from the external determinant: CBA.

333

LMG means that the university was assessed based on how quick decision-making process is and how accessible the senior management teams are.

OS means that the university was assessed based on how clear and understandable the strategic plan in is communicating the entrepreneurial objectives and whether the vision for the enterprise is core to the overall strategy.

CBA means that the university was assessed based on the richness of communication, coverage of activities and celebration of achievements by showcasing their activities.

FC means that the university was assessed based on self-supporting and self-reliant from traditional financing sources.

OCA means that while these universities are open to embracing change, they are more flexible than one another and so, were assessed based on how supportive and favourable the culture of entrepreneurial activities is.

CEE means that the university is engaged with its local/regional community

EE means that the Entrepreneurial University institutionalises entrepreneurial-related programme at both undergraduate and postgraduate level.

PSUs means that the university was assessed based on the services it offers to both the academic and business community concurrently, and the extent to which the entrepreneurial initiatives are linked and attract people.

Thus, making it easier to show and assess why one university is doing better than the other, the individual report and profile of the cases are summarised and visually displayed in Appendix 16. So, having clarified the entrepreneurial university components, the typologies connect the factors and characteristics together. For example, they explain how the buy-in attitude of university leaders and financial capacity of the institution may affect the coordination of entrepreneurial activities. Therefore, this subsection provides answers to RQ3.

RQ3: How do UK self-defined entrepreneurial universities differ in their entrepreneurial approaches and why do some do better than others?

334

7.4 Summary

In this Chapter, through the lens of the RBV theoretical and CE conceptual underpinnings, findings were organised around the three research questions.

In response to RQ1 (what are the key determinants influencing the development of UK self-defined entrepreneurial universities?), thirteen determinants under three taxonomies were identified: (i) internal determinants (leadership, management, and governance; financial capacity; organisational culture and attitude; physical resources; motivational factors; individual qualities and capabilities; (ii) external determinants (corporate brand awareness; external funding and government expectations; entrepreneurial opportunity exploitation and exploration; entrepreneurial networking; and geographical factors); and (iii) strategic determinants (organisational objectives and reputational strategies; and national objectives, priorities and requirements). In contrast to previous findings, internal determinants are more dominant, and this could be an opening for future research.

In response to RQ2 (what do UK self-defined entrepreneurial universities consider 'entrepreneurial' in their own context and why?), three classifications of entrepreneurial practices were identified: (i) outward-facing; (ii) inter-facing; and (iii) intra-facing.

In response to RQ3 (how do UK self-defined entrepreneurial universities differ in their entrepreneurial approaches and why do some do better than others?), three typologies of the self-defined entrepreneurial university were identified on a continuum of (i) fledgling; (ii) fledged; and (iii) fully-fledged. More importantly, the overall research results were used to introduce a 3x3 best practice model (see Chapter Eight) that is anticipated to advance policies and practices of entrepreneurship in the higher education sector. An in-depth discussion on how this thesis contributes to knowledge and responds to calls is discussed further in the next chapter.

Chapter 8 Conclusion and recommendations

Having discussed the analysis of the findings in relation to the research objectives and in the context of the literature, this chapter highlights the value and originality of this research. Table 15 below shows how this thesis contributes to calls in current literature in relation to practical, conceptual, theoretical, and methodological contributions.

Table 15: Summary of calls and contributions in this thesis

Calls	Contributions (section)
OECD (2008) calls to clarify how universities can foster innovation.	Practical: My 3x3 practical model has implications for management and strategic practices advancement in higher education entrepreneurship (8.2).
EU framework (EC & OECD, 2012) calls to verify the framework and need for an innovative model.	
Sakhdari (2016) calls for a theoretically grounded model rich in contextualisation, capability-building, social, process, and individual-level.	
Aldrich (1999); Barney (2001); Barnett (2005); and Arya & Lin (2007) call for more to be done with RBV.	Theoretical: the extension of RBV with evolutionary perspective by showing how selected universities herein are considered 'entrepreneurial' (Appendix 16). This led to a taxonomy (internal, external, and strategic factors) been identified (8.1.1.1).
Kuratko & Morris (2018) call for more to be done with CE because organisations struggle with devising appropriate strategies to initiate	Conceptual: the extension of CE with strategic types (Appendix 19) by outlining the different strategies used by universities to drive their main entrepreneurial activities. Thereby showing a link between 'renewal and

Calls	Contributions (section)
entrepreneurial activities.	venturing' (Appendix 20). This has a major implication to enhance both strategic and management practices.
Kuratko & Audretsch (2013); Hind & Steyn (2015); Sakhdari (2016) call for empirical research to clarify and differentiate corporate entrepreneurial activities.	Conceptual: this thesis provides a coherent clarification and differentiation of the entrepreneurial practices (8.1.1.2).
EC & OECD (2012) Call to clarify what the entrepreneurial university constitutes.	Conceptual: the separation of factors (8.1.1.1) from the characteristics (8.1.1.2) components of the entrepreneurial university. This led to taxonomy and classifications been recognised respectively.
Logie (2015) calls for use of a diagram.	Methodological: the application of participant-led visual methods to advance qualitative research and inspire entrepreneurship scholars.
Davidsson et al. (2006) lack of service sector research in entrepreneurship.	Methodological: this exploratory research details the evolution of entrepreneurialism within the higher education (university) sector.
Lerchenmueller (2015) calls to compare sectors within a specific context.	Empirical: I empirically select and compare universities of different sizes, status, and orientations within the 'self-defined' entrepreneurial university context (7.1.10 and 8.1.1.3).
Davies (2014) calls for how leaders can improve their strategic practices.	Practical: this thesis provides cumulative insights into leadership and management issues highlighting styles viable in leading and managing a changing environment (see Appendix 18, Table 46). Indeed, a significant contribution to strategic management literature and higher education studies.

Calls	Contributions (section)
Corbett et al. (2013) and O'Connor & Rice (2013) call to show how strategic renewal connects with venturing.	Practical: this thesis provides a practical insight into the linkage between the distinctive entrepreneurial activities and the strategies underpinning them (Appendix 19 & 20). A crucial contribution to entrepreneurship discipline.
Kenyon (2011) and Higgins et al (2018).	Findings in 6.2 support the notion of work-based and experiential learning. It also suggests that universities must have designated Centres to encourage students to learn through creative problem solving, experiential, and reflective learning thereby moving students away from 'what' to knowing 'how'.
Packard (2017) calls for a more interpretivism approach to entrepreneurship research.	My axiological perspective of interpretivism emphasises on 'meaning through multiple views' could advance research philosophy by understanding how research paradigm can be embedded into the researcher's own value.

The current chapter reflects on how the 3x3 best practice model introduced in this thesis modifies the EU framework. First, the research objectives are revisited to highlight the empirical and theoretical contributions to knowledge. Second, the practical implications are highlighted followed by the limitations of the study. Finally, it offers some best practice and actionable suggestions.

The findings in this thesis shed light to how integrative view (RBV and CE) modifies the European framework (EC & OECD, 2012) six years after it was launched by identifying thirteen key determinants around three taxonomies of factors, three classifications of entrepreneurial practices and three typologies of the entrepreneurial university. In this thesis, the 3x3 best practical model (see Figure 17) was developed to bring together taxonomies, classifications, and typologies of the entrepreneurial university. So, Figure 17 recaps the emergent themes in Figures 14, 15, and 16. Consequently, Figure 17 integrates

the taxonomies of factors, classifications of characteristics, and typologies of the entrepreneurial university.

Precisely, the first three represents taxonomies (1-3), the second three represents classifications (4-6), and the last three represents typologies (7-9). Figure 17 shows the flow of each figure in the discussion chapter and how they relate to each other. That is, Figure 14 emerged to summarise the taxonomies, Figure 15 emerged to summarise the classifications, Figure 16 emerged to summarise the typologies, and figure 17 shows the relationship between Figures 14, 15, and 16.
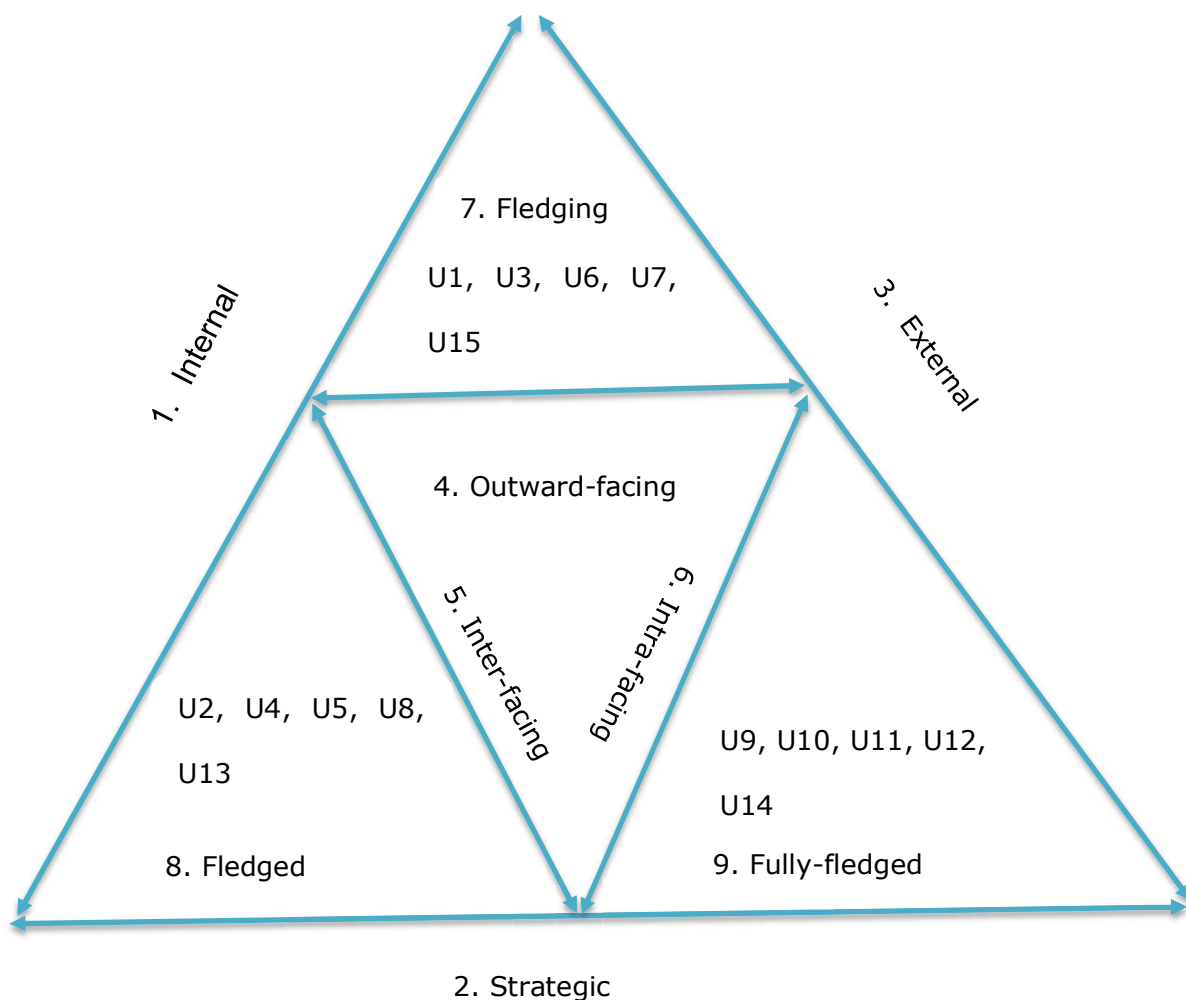
Figure 17: 3x3 practical model of the entrepreneurial university

As explained in Chapter Five, U1 is a pseudonym for University 1 and so on. In general, Figure 17 portrays how connections between taxonomies of factors and classifications of practices were analysed to generate the typology of the self-defined entrepreneurial universities. In addition to identifying thirteen dominant determinants, entrepreneurial university is positioned at the intersection between three taxonomies (i) internal factors, especially the buy-in and commitment of university leaders, managers and governors; (ii) strategic factors, especially the strategic ambition and action of the university; and (iii) external factors, especially the geographical differences and concentration of firms in the area where the university resides. In this manner, this thesis captures the intersectionality of the entrepreneurial university components by introducing the 3x3 best practice model.

8.1 Contributions to knowledge and practice

Given that the objectives of this study are to (i) explore the key determinants influencing the development of UK self-defined entrepreneurial universities; (ii) identify the characteristics of UK self-defined entrepreneurial universities in their own context; and (iii) develop typologies of UK self-defined entrepreneurial universities, the core contribution to entrepreneurship literature and higher education studies is the extension of the European framework (EC & OECD, 2012). This thesis contributes to the small business literature by observing the interconnected relationships between universities and SMEs. Increasingly, universities are finding ways to supporting small business in overcoming their challenges in terms of space and flexibility to aid daily operations. In this regard, this thesis documents the various ways universities have been increasing their engagement with SMEs. This will enable SMEs to identify both potential and existing support available for them in universities in their areas and help them to make informed decisions about which universities will meet their needs and how. In doing so, this thesis captures the complex relational context among a variety of entrepreneurial participants in the entrepreneurial university.

Also, this thesis contributes to growing literature about advancing qualitative research in social sciences by introducing various innovative ways to collect and analyse

data. First, it adopts a systematic approach to present the reviewed literature organising them by the concept and context in Chapter Three thereby enriching the interpretation of the entrepreneurial university phenomenon. Second, it incorporates multiple views in understanding the subject in detail thereby allowing for triangulation that enhances the quality of research outcomes (see Chapter Five). Besides, the multilevel analysis suggests that enterprise activities in universities should be institutionalised for all and well-coordinated together to derive best entrepreneurial outcomes. Third, it explores PVM to encourage participants to actively engage in the research process by inviting them to reflect on their experience in enterprise activities prior to interview discussions. PVM enables me to explore and clarify further taken-for-granted determinants shaping the entrepreneurial university. Finally, it proposes a new insight to using NVIVO in a tabular format coded as a grandchild, child, and the parent node (see Appendix 18) for transparency of the data, clarity, and simplicity of the analysis and enhancing the quality of the overall research.

8.1.1 Modifying the European framework

Utilising elements of the RBV theory and CE concept, the study modifies the EU framework by introducing a 3x3 best practice model. The study reveals thirteen (13) key determinants which were categorised under three (3) taxonomies including internal (leadership, management, and governance; corporate brand awareness; financial capacity; organisational culture and attitude; individual qualities and capabilities; motivational factors; and physical resources), strategic (national objectives and organisational strategy), and external (entrepreneurial opportunity exploitation and exploration, external funding and government expectations, geographical factors, and entrepreneurial networking) determinants, classifications of activities, and typologies.

In contrast to the findings of the EU framework, this study identifies three taxonomies of factors, three classifications of entrepreneurial activities, and three typologies of self-defined entrepreneurial universities. Therefore, the study advances our knowledge by introducing the 3x3 best practice framework which constitutes nine components. The first

three components are the taxonomies (internal, external, and strategic determinants); that is, modifying the factor side of the EU framework with both the external and strategic determinants. The second three components include the main classifications of entrepreneurial practices (i) intra-facing; (ii) inter-facing; and (iii) outward-facing activities; that is, modifying the characteristics side of the EU framework with new brands of activities associated with the UK universities as well as identifying the strategy types underpinning them. The last three components are the typologies of UK self-defined entrepreneurial universities ranging on a continuum from (i) fledgling; (ii) fledged and (iii) fully-fledged; that is, modifying the impact side of the EU framework with a typology.

The integrative approach adopted in this thesis considers that multiple perspectives provide comprehensive interpretations. Therefore, it modifies the European framework in the following ways:

8.1.1.1 Taxonomy of factors

Contrary to what the European guiding framework presented, this thesis clarifies and defines the determinants shaping and characteristics epitomising the entrepreneurial university. Therefore, it modifies the European framework. To address the first RQ: what are the factors shaping the development of UK self-defined entrepreneurial universities? Thirteen dominant determinants under three taxonomies were identified. Therefore, the entrepreneurial university is positioned at the intersection between three determinants (i) internal- especially responsive and responsible leadership practice, the buy-in and commitment of university leaders, managers and governors; (ii) strategic- especially the integration of enterprise and innovation with research agenda, strategic ambition and action of a university to strategise and prioritise its entrepreneurial activity; and (iii) external- especially the entrepreneurial networking for income generation and funding attraction, geographical differences and concentration of firms in the area where a university resides.

8.1.1.2 Classifications of entrepreneurial practices

To address the second RQ: what do UK self-defined entrepreneurial universities consider 'entrepreneurial' in their own context and why? This thesis simplifies entrepreneurial practices into three classifications: (i) intra-facing; (ii) inter-facing; and (iii) outward-facing practices thereby modifying further the European framework in terms of activities defining a university as being entrepreneurial. Intra-facing entrepreneurial practices are internal or in-house initiatives in place to support the entrepreneurial development of the academic community including entrepreneurial designation, entrepreneurial education offerings, and entrepreneurship research groups. Outward-facing entrepreneurial practices are initiatives in place to foster an entrepreneurial ecosystem of the society including support for business organisations, international and outreach activities and community engagement. The inter-facing entrepreneurial practices are in-between initiatives in place that brings in-house and external-facing activities together for the best entrepreneurial outcome to be derived, and this includes university-to-university interaction (regional boot camps and/or competition schemes). The differentiation of entrepreneurial activities in this manner is of significance because "innovation and entrepreneurial activities are integral to effective management practice" (Corbett et al., 2013, p.812).

Also, these classifications are an important response to- how the university can foster innovation (OECD, 2008).

8.1.1.3 Typologies of self-defined entrepreneurial universities

In addition to clarifying and defining the determinants and characteristics of the entrepreneurial university, the third RQ: how do UK self-defined entrepreneurial universities differ in their entrepreneurial approaches and why do some do better than others? This was addressed through the identification of three typologies of the self-defined entrepreneurial university: (i) fledgling; (ii) fledged; and (iii) fully-fledged. On a continuum of developmental stages, the fledgling self-defined entrepreneurial universities are in their

early stage of entrepreneurial development by having some initiatives in place which are yet to be coordinated, the fledged are into their developed stage but with minimal coordination of their entrepreneurial initiatives and the fully-fledged have all key initiatives in place which are well joined-up as well as effectively coordinated. The claim here is that universities in the same country respond differently to entrepreneurialism and their degree of responsiveness is contingent on different factors, the resources in their possessions and how the various entrepreneurial activities were undertaken and coordinated.

This typology has implication for entrepreneurship research advancement. This is significantly crucial as a response to the call- comparing divisions within a specific context (Lerchenmueller, 2015). In this study, it is the comparison between the Post-1992 and Pre-1992 institutions within the self-defined entrepreneurial universities in the UK HE context. The comparison of such backgrounds is important due to stark differences in teaching and research orientations. In turn, the strategies for adapting the entrepreneurial practices are identified. Such recognition of the strategy types (Appendix 19) is a response to the call for the need to clarify corporate entrepreneurial strategy (Hind & Steyn, 2015; Kuratko & Morris, 2018).

Now that the contributions to knowledge have been established, the next subsection provides an insight into the practical implications in transforming universities toward becoming more entrepreneurial.

8.2 Practical implications: Transforming universities toward entrepreneurialism

Finally, this thesis contributes to strategy and entrepreneurship in the higher education sector. A transition toward a more information-based economy increasingly pressurised universities to be more entrepreneurial (Stewart, 2015); that is, involved in external engagement (Thune et al., 2016), be innovative (Schmitz et al., 2016), and action-oriented. Such responses about how universities are embracing, evolving and adjusting to recent changes and challenges in the environment, particularly, the policy imperative 'to

344

becoming more entrepreneurial' (Martin, 2012) is the starting point for exploring this research.

Thus, the idea of creative destruction; that is, 'deconstruct to reconstruct' (Schumpeter, 1942) by replacing old ways of undertaking activities with modern approaches prompted the assumption that the evolutionary perspective of the RBV theory adopted in this thesis is pertinent to understanding the evolving role of universities towards contributing to socioeconomic needs through entrepreneurial functions. Although universities are sustainable in teaching and research, however, these functions are not adequately responsive to societal demands as we now live in a more knowledge-intensive economy.

These issues require structural adjustments, strategic renewals to mission and values, and the ability of universities to co-evolve and relate with other entrepreneurial-social actors (ESAs) in the entrepreneurship ecosystem. In doing so, the essence of CE perspective adopted in this study is captured herein. By understanding how self-defined entrepreneurial universities of different status (pre-1992 and post-1992 institutions) and orientations (teaching, technological, and research intensiveness) in the UK vary in their responses to the policy invitation to be more entrepreneurial, we can further foster entrepreneurship practices in the higher education sector, improve how entrepreneurial activities are coordinated within an individual university, and provide additional support for entrepreneurial activities coordination in the region where necessary.

While acknowledging that multi-level embedded relationships (individual, centres, organisational and macroeconomic players such as industry and government) exist in entrepreneurial university, the decision to deconstruct for a reconstruction is countless and complex because multiple ESAs are involved. The efficiency of these multilateral decisions is contingent on leaders, managers and governors' ability to strategise their universities toward the fulfillment of entrepreneurial mission and visions. Given the nature of those decisions, I would suggest further research on entrepreneurial decisions at the individual university level (unilateral) and ESAs level (multilateral) within academic settings valuable.

This could improve the decision-making and responsive capability of university leaders, managers, and governors toward entrepreneurialism.

8.3 Limitations of the study

The lack of the clarity in the European framework is associated with its seven components in terms of what elements are factors and what the characteristics of the entrepreneurial university are. So, in contrast to the European framework, my research extends our knowledge by clarifying these components through the identification of additional factors (including leadership, management, and governance), characteristics (including regional boot camps and internationalisation), and the identification of three typologies of self-defined entrepreneurial universities (fledgling, fledged, and fully-fledged) in relation to the extent in which the entrepreneurial activities are coordinated.

However, the limitation of this thesis lies in different patterns such as a method for collecting data including sampling for participants and universities, the data itself, and the national context of the study. First, the scope of the study focuses on a specific group of universities conceptualised as 'self-defined entrepreneurial universities' from the whole higher education institutions. This group was identified using the UK Times Higher Education Entrepreneurial University of the Year Award between 2008 and 2015. This thesis examines 32 participants in 15 British self-defined entrepreneurial universities across England and Scotland whose responsibilities directly or indirectly involve entrepreneurial related roles.

Although within and cross-case analysis was undertaken, generalisation to other non-academic (such as consultancy and research institutions) and public sector organisations are limited. Langridge (2006) and Logie (2015) investigated 19 and 12 respondents for their doctoral theses respectively in single study organisation only. This suggests that to enable rich description (Geertz, 1973), entrepreneurship research focuses on small datasets.

Second, on the side of the data generated, this thesis emphasises on interpretation and meaning where the perceptions and opinions of participants at different hierarchical levels were explored rather than providing numerical data on how a university is

346

entrepreneurial based on the number of spin-offs created as Fini et al. (2016) did in their research study of institutional determinants of academic spin-off. The numbers of spin-off activity were not taken into consideration in this thesis because not every university sampled for this study to develop entrepreneurial capacity in this special area. This thesis draws more on understanding the determinants shaping general entrepreneurial activities at the university level from the view of the multi-level analysis of the respondents.

Finally, the national context of the study focuses on the UK by investigating fifteen universities from England and Scotland rather than drawing on a cross-country study as Fini et al. (2016) did by comparing three countries (Italy, Norway, and UK) with different institutional approaches to develop framework conditions conducive for spin-off activities. After U.S based universities, the UK university sector is one of the most attractive places to study in the world as well as has an increased engagement in collaborative and outreach activities. Besides, the UK has a heterogeneous landscape whereby the university sector is characterised by dynamism, diversity, and complexity. Dynamism in terms of the UK dynamic environment having four sub-countries (England and Scotland examined in this thesis) each with its own regulated system that shapes the dynamic of institutional and environmental changes. Diversity in terms of differential institutional status and power (teaching vs. research and post-1992 vs. pre-1992) describing the orientation of the selected universities, leading to complexity within a specific university and between different universities adopting differing responses to becoming more entrepreneurial. This national landscape is suitable to explore how different universities in different parts of the UK are evolving toward becoming more entrepreneurial. Therefore, it can be claimed that this study provides representational examples that illuminate the determinants and characters of entrepreneurial universities.

8.4 Recommendations

In today's global competitive knowledge-based economy, the entrepreneurial university becomes a significant element for any country including the UK. The crucial role of the entrepreneurial university in fuelling social and economic development can be achieved through a well-coordinated set of entrepreneurial activities. Undertaking an entrepreneurial activity highlights the 'utilisation of series of expertise', which can be defined as a set of 'multiple ESAs (e.g. universities, funding institutions, private and other public-sector organisations)' who come together to foster and sustain such activity. Consequently, the entrepreneurial university concept is important given its emphasis on the co-existence between the missions (teaching, research, and enterprise activities) and the interconnected relationships that co-evolve among the ESAs.

Based on the outcomes derived from this research, the following 22 practical recommendations (see Tables 16 and 17) are offered to universities, policy planners, and funders:

348

Table 16: Advice and best practices to universities: responsive, responsible, and resilience

Number	Responsive, responsible, and resilience (3Rs)
1	Be willing to take a risk by accepting and embracing change and challenges as they emerged.
2	Establish a 'we' culture where the norm focuses on the 'team' (that is, together we achieve more) rather than pursuing an individual goal. This is important because complexity within the individual university is due to the variance of the culture. These cultural differences ensue from the fact that faculties and centres are different both in terms of discipline/subject and sizes.
3	Empower and influence the leaders and managers at various levels to buy into the enterprise agenda.
4	Encourage a joined-up and well-coordinated approach toward enterprise activities to ensure the best entrepreneurial outcome is derived.
5	Create support mechanisms to relieve the workload and timing issues for academics.
6	Enhance teaching with entrepreneurial pedagogy. In doing so, entrepreneurship education and students' experience will be improved. Thus, fostering the capacity for employability thereby having implication for TEF and NSS as highlighted in Chapter Two sub-sub-section 2.1.1.2.
7	Facilitate postgraduates and academic researchers to consider developing innovative ideas beyond research impact to encompass enterprise impact by being creative at every stage of their research rather than just competing in disloyal ways.
8	Develop a platform that will strike balance between those looking after the system including administrators and those with a passion for the enterprise.
9	Establish a system to oversee and manage the interconnected relationships with other ESAs in the entrepreneurial ecosystem.
10	Embed the incorporation of spin-out policy in the university-wide strategy and

	indicate the intent that entrepreneurial development of the people is an overriding priority.
11	Encourage trials and experimentation.
12	Encourage publicity by showcasing enterprise achievements and recognise enterprising individuals. This is important to continuously communicate the entrepreneurial image of the institution and create awareness of its corporate brand.
13	Regional universities to jointly organise quarterly or annual ESAs event specifically for small businesses to explore the opportunity for collaboration. This is important for both academic and enterprise placement as students will have the opportunity to meet other entrepreneurs and prospective employers. Again, this will strengthen opportunity for employability.
14	Accommodate multilateral decision and facilitate consultation across centres and faculties.
15	Acknowledge that every centres and faculty are unique and tailor their needs accordingly.
16	Allow greater flexibility. This is important because entrepreneurs do not often abide by rules and innovation is constrained by too much bureaucracy.
17	Encourage open access to the management or strategic team, possibly by organising a periodic presentation for management to liaise with and listen to people.

Table 17: Advice and best practices to policy planners and funders: commitment, improvement, and continuity

Number	Commitment, improvement, and continuity (CiC)
18	Government policy to support universities in the creation of more office spaces for innovative SMEs. This is important because complexity in the sector is due to the nature of HEIs as public-sector organisations that are extensively driven by process, procedures, and policies. These administration and rules shape the extent to which a university may or may not be flexible in responding to today's globally competitive economy.
19	Commitment and back up of UK banks and other financial institutions to continuously invest in SMEs.
20	Funding bodies to amend their investors' policy thereby facilitating the allocation of more money for enterprise activities and business development. This is important because currently only Santander Universities is actively committed to and uniquely working with 81 universities (including 11 universities in this study: U1, U3, U4, U7, U8, U9, U10, U12, U13, U14, and U15) to provide funding and support initiatives for higher education enterprise and entrepreneurship.
21	Government at various levels (local, regional and national) to encourage a joined-up approach that will coordinate resources available to support entrepreneurial activities.
22	UK government to promote and foster policy that will support the management of the interconnected relationships among the ESAs in the entrepreneurial ecosystem.

These actionable recommendations could shape management and strategic practices.

Bibliography

ACCA. (2010). Positioned-Based and Resource-Based Strategies. Association of Chartered Certified Account.

Ackroyd, P., & Ackroyd, S. (1999). Problems of University Governance in Britain: Is more Accountability the Solution? *International Journal of Public Sector Management*, *12*(2), 171–185.

Aghion, P. M., Dewatripont, M., Hoxby, C., Mas-Colell, A., & Sapir. (2008). *Higher Aspiration: An Agenda for Reforming European Universities* (Breugel Blueprint Series No. 5). Brussels, Belgium: Breugel Blueprint Series.

Ahmed, P. K. (1998). Culture and Climate for Innovation. *European Journal of Innovation Management*, *1*(1), 30–53.

Akio, T. (2005). The Critical Assessment of the Resource-Based View of Strategic Management: The Source of Heterogeneity of the Firm. *Institute of International Relations and Area Studies, Ritsumeikan University*, *3*, 125–150.

Aldrich, H. E. (1999). *Organisations evolving*. London: Sage.

Aldrich, H. E., & Ruef, M. (2006). *Organizations evolving* (2 edition). London: Sage.

Al-Tabbaa, O. (2013). From Beggar to Partner: Non-profit-business Collaboration as a Strategic Option for Non-profit Organisations (Ph.D. Thesis). University of Leeds, UK.

Altbach, P. G. (2009). *The Complex Roles of Universities in the Period of Globalisation* (pp. 1–14). Higher Education in the World.

Altbach, P. G. (2014). MOOCs as Neo-colonialism: Who Controls Knowledge? *International Higher Education*, *0*(75), 5–7.

Altbach, P. G., & Knight, J. (2007). The Internationalisation of Higher Education: Motivations and Realities. *Journal of Studies in International Education*, *11*(3–4), 290–305.

Altrichter, H., Posch, P., & Somekh, B. (1993). Teachers Investigate Their Work: An Introduction to the Methods of Action Research. Routledge.

Amabile, T. M. (1996). Creativity and Innovation in Organisations. *Harvard Business Review*, 1–15.

352

Anderson, P., & Tushman, M. L. (1990). Technological Discontinuities and Dominant Designs: A Cyclical Model of Technological Change. *Administrative Science Quarterly*, *35*(4), 604–633.

Antoncic, B., & Hisrich, R. D. (2001). Intrapreneurship: Construct Refinement and Cross-Cultural Validation. *Journal of Business Venturing*, *16*(5), 495–527.

Aristei, D., Vecchi, M., & Venturini, F. (2015). University and inter-firm R&D collaborations: Propensity and intensity of cooperation in Europe. *Journal of Technology Transfer*.

Anglia Ruskin University. (2015). 2015/16 International Prospectus. Anglia Ruskin University. Retrieved from http://www.anglia.ac.uk/international/how-to-apply/step-1---choose-your-course

Anggraeni, E. (2014). The Impact of Internal and External Resources, and Strategic Actions in Business Networks on Firm Performance in the Software Industry (Thesis). Bogor Agricultural University, Netherlands.

Arya, B., & Lin, Z. J. (2007). Understanding Collaboration Outcomes from an Extended Resource-Based View Perspective: The Roles of Organizational Characteristics, Partner Attributes, and Network Structures. *Journal of Management*, *33*(5), 697–723.

ASHOKA. (Website). ASHOKA Changemaker Campuses. Retrieved 28 August 2015, from http://ashokau.org/programs/changemaker-campus/

Atkinson, D. (1999). VET Funding: Processes and Outcomes. Retrieved 8 April 2017, from http://www.leeds.ac.uk/educol/documents/000001035.htm

Audretsch, D. (2007). *The Entrepreneurial Society*. Oxford, England: Oxford University Press.

Audretsch, D. B. (2003). *Entrepreneurship: A Survey of the Literature* (No. 14) (pp. 1–73). Brussels, Belgium: Commission of the European Commission.

Audretsch, D. B. (2014). From the Entrepreneurial University to the University for the Entrepreneurial Society. *The Journal of Technology Transfer*, *39*(3), 313–321.

Audretsch, D. B. (2015). Shaker A. Zahra: Pioneering Entrepreneurship Scholar. *Small Business Economics*, *44*(4), 721–725.

353

Audretsch, D. B., Hayter, C. S., & Link, A. N. (2015). *Concise Guide to Entrepreneurship, Technology, and Innovation*. Edward Elgar Publishing.

Audretsch, D. B., & Lehmann, E. E. (2005). Does the Knowledge Spillover Theory of Entrepreneurship hold for regions? *Research Policy*, *34*(8), 1191–1202.

Audretsch, D., & Phillips, R. (2007). *Entrepreneurship, State Economic Development Policy, and the Entrepreneurial University* (CEPR Discussion Paper No. 6242). C.E.P.R. Discussion Papers.

Bahm, A. J. (1993). Axiology: The Science of Values. Rodopi.

Baker, S. E., & Edwards, R. (2012). How many qualitative interviews is enough? Expert voices and early career reflections on sampling and cases in qualitative research (pp. 2–43). National Centre for Research Methods (NCRM) Review Paper.

Baum, J. A. C., & McKelvey, B. (1999). *Variations in Organization Science*. SAGE.

Barahona, J. H., Cruz, N. M., & Escudero, A. I. R. (2006). Education and Training as Non-Psychological Characteristics that influence University Students' Entrepreneurial Behaviour. *Journal of Entrepreneurship Education*, *9*, 99.

Barakat, S., & Hyclak, T. (2009). Entrepreneurship Education in an Entrepreneurial Community. *Working Paper, Cambridge University, UK*.

Barnett, R. (2000). *Realising the University in an Age of Super complexity*. Buckingham, UK: Society for Research into Higher Education & Open University Press.

Barnett, R. (2005). Convergence in Higher Education: The Strange Case of 'Entrepreneurialism'. In *IHME: Entrepreneurship* (Michael Shattock, Vol. 17, pp. 51–64). OECD Publishing.

Barnett, W. P., & Hansen, M. T. (1996). The red queen in organizational evolution. *Strategic Management Journal*, *17*, 139–157.

Barnett, W. P., Greve, H. R., & Park, D. Y. (1994). An Evolutionary Model of Organizational Performance. *Strategic Management Journal*, *15*(S1), 11–28.

Barnett, W. P., & McKendrick, D. G. (2004). Why Are Some Organizations More Competitive than Others? Evidence from a Changing Global Market. *Administrative Science Quarterly*, *49*(4), 535–571.

354

Barney, J. B. (1986). Organisational Culture: Can It Be a Source of Sustained Competitive Advantage? *The Academy of Management Review*, *11*(3), 656–665.

Barney, J. B. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, *17*(1), 99–120.

Barney, J., B. (1997). Differences between Entrepreneurs and Managers in Large Organisations: Biases and Heuristics in Strategic Decision-making. *Journal of Business Venturing*, *12*, 9–30.

Barney, J. B. (2001a). Is the Resource-Based 'View' a Useful Perspective for Strategic Management Research? Yes. *The Academy of Management Review*, *26*(1), 41–56.

Barney, J. B. (2001b). Resource-based Theories of Competitive Advantage: A Ten Year Retrospective on the Resource-based View. *Journal of Management*, *27*, 643–650.

Barney, J., B., & Arikan, A. M. (2001). The Resource-Based View: Origins and Implications. In *Handbook of Strategic Management* (Hitt, M. A., Freeman, R. E. & Harrison, J. S., pp. 124–188). Oxford, England.

Barney, J. B., Wright, M., & Ketchen, J. D. (2001). The Resource-based View of the Firm: Ten Years after 1991. *Journal of Management*, *27*, 625–641.

Bartelse, J. A., & Huisman, J. (2008). The Bologna Process. In *Towards Global Ph.D.? Forces and Forms in Doctoral Education Worldwide* (M. Nerad and M. Heggelund, pp. 101–113). CIRGE: University of Washington Press.

Bathelt, H., Kogler, D. F., & Munro, A. K. (2010). A knowledge-based Typology of University Spin-offs in the Context of Regional Economic Development. *Technovation*, *30*, 519–532.

Bathmaker, A. M. (2003). The Expansion of Higher Education: A Consideration of Control, Funding, and Quality. In *Education Studies* (Bartlett, S. and Burton, D., pp. 169–189). London: Sage.

Battaglia, M., P. (2011). Nonprobability Sampling: Encyclopaedia of Survey Research Methods. *Sage*, 523–526.

Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*, *13*(4), 544–559.
355

Behrens, J., & Patzelt, H. (2015). Corporate Entrepreneurship Managers' Project Terminations: Integrating Portfolio-Level, Individual-Level, and Firm-Level Effects. *Entrepreneurship Theory and Practice*, *40*(4), 815–842.

Bell, D. (2016). The University of Reading. Retrieved 18 September 2016, from http://www.reading.ac.uk

Benelux Communiqué. (2009). *The Bologna Process 2020: The European Higher Education Area in the new decade*. Leuven/Louvain-la-Neuve, Belgium: Communiqué of the Conference of European Ministers Responsible for Higher Education, Leuven and Louvain-la-Neuve.

Benton, T., & Craib, I. (2011). Philosophy of Social Science: The Philosophical Foundations of Social Thought (2nd ed.). Palgrave Macmillan.

Beraza, J. M., & Rodríguez, A. (2012). Typologies of University Spin-Off Support Programmes: The United Kingdom and Spain. In A. M. Gil-Lafuente, J. Gil-Lafuente, & J. M. Merigó-Lindahl (Eds.), *Soft Computing in Management and Business Economics* (pp. 61–75). Springer Berlin Heidelberg.

Bercovitz, J., & Feldman, M. (2005). Entrepreneurial Universities and Technology Transfer: A Conceptual Framework for Understanding Knowledge-Based Economic Development. *The Journal of Technology Transfer*, *31*(1), 175–188.

Bergen Communiqué. (2005). *The European Higher Education Area: Achieving the Goals.* Bergen: Communiqué of the Conference of Ministers Responsible for Higher Education.

Berger, P. L., & Luckmann, T. (1967). The Social Construction of Reality: A Treatise in the Sociology of Knowledge. Harmondsworth: Penguin Books.

Berggren, E. (2011). The Entrepreneurial University's Influence on Commercialisation of Academic Research. *International Journal of Entrepreneurship and Small Business*, *12*(4), 429–444.

Berggren, E., & Lindholm, D., Åsa. (2009). Creating an Entrepreneurial Region: Two Waves of Academic Spin-offs from Halmstad University. *European Planning Studies*, *17*(8), 1171–1189.
356

Berlin Communiqué. (2003). *Realising the European Higher Education Area*. Berlin: Communiqué of the Conference of Ministers Responsible for Higher Education.

Bernard, H., R. (2000). *Social research methods*. Thousand Oaks, CA: Sage.

Bertaux, D. (1981). From the life-history approach to the Transformation of Sociological Practice. In *Biography and society: The life history approach in the social sciences (*Daniel Bertaux, pp. 29–45). London: Sage.

Beugelsdijk, S. (2007). Entrepreneurial Culture, Regional Innovativeness, and Economic Growth. *Journal of Evolutionary Economics*, *17*(2), 187–210.

Blackmore, P., & Blackwell, R. (2006). Strategic Leadership in Academic Development. *Studies in Higher Education*, *31*(3), 373–387.

Blaikie, N. (2000). *Designing Social Research*. Cambridge: Polity.

Bleiklie, I., & Kogan, M. (2007). Organisation and Governance of Universities. *Higher Education Policy*, *20*, 477–493.

Blenker, P., Dreisler, P., Faergemann, H. M., & Kjeldsen, J. (2008). A Framework for Developing Entrepreneurship Education in a University Context. *International Journal of Entrepreneurship and Small Business*, *5*(1), 45.

Blumer, H. (1956). Sociological analysis and the variable. *American Sociological Review*, 21 (December), 683-690.

Boal, H., & Stallivieri, L. (2016). The Influence of Massive Online Open Courses (MOOCs) on the Internationalisation Process of Higher Education. *Digital Universities: International Best Practices and Applications*, *2*(2/3), 21–38.

Boliver, V. (2015). Are there Distinctive Clusters of Higher and Lower Status Universities in the UK? *Oxford Review of Education*, *41*(5), 608–627.

Bonner, K., Hewitt-Dundas, N., & Roper, S. (2015). Collaboration between SMEs and Universities: Local Population, Growth and Innovation Metrics: Report to HEFCE by the Enterprise Research Centre (ERC): May 2015.

Boojihawon, D. K., & Acholonu, K. K. (2013). Internationalisation Process of African banks: An Exploratory Study. *African Journal of Economic and Management Studies*, *4*(2), 244–266.

Brannick, T., & Coghlan, D. (2007). In Defence of Being 'Native': The Case for Insider Academic Research. *Organisational Research Methods*, *10*(1), 59–74.

Bratianu, C., & Stanciu, S. (2010). An Overview of Present Research Related to the Entrepreneurial University. *Management & Marketing*, *5*(2). Retrieved from

Braun, V., & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, *3*(2), 77–101.

Breitmayer, B. J., Ayres, L., & Knafl, K. A. (1993). Triangulation in Qualitative Research: Evaluation of Completeness and Confirmation Purposes. *Image- the Journal of Nursing Scholarship*, *25*(3), 237–243.

Brennan, J., Williams, R., Harris, R., & McNamara, D. (1997). An Institutional Approach to Quality Audit. *Studies in Higher Education*, *22*(2), 173–186.

Breznitz, S. M., & Etzkowitz, H. (2016). Making Sense of University Technology Commercialisation: Diversity and Adaptation. In S. M. Breznitz & H. Etzkowitz (Eds.), *University Technology Transfer: The Globalisation of Academic Innovation* (pp. 463–466). Abingdon, UK: Routledge.

British Council. (2015). Higher Education: Introduction Education UK (Global). Retrieved 23 July 2015, from http://www.educationuk.org/global/articles/higher-education-introduction/

Brizek, M. G. (2013). Explaining Corporate Entrepreneurship: A Contemporary Literature Investigation. *Journal of Management and Marketing Research*.

Brock, D. D., & Kim, M. (2011). Social Entrepreneurship Education Resource Handbook for Colleges and Universities engaged in teaching, Research and Applied Learning in Social Entrepreneurship (Ashoka U, the University Division of Ashoka: Innovators for the Public) (pp. 1–14). ASHOKA U.

Brockhaus, R. H. (1982). The Psychology of An Entrepreneur. In *Encyclopaedia of Entrepreneurship* (Kent, C. & D.L. Sexton & K.H. Vesper, pp. 39–56). Englewood Cliffs, NJ: Prentice-Hall.

Bronstein, J., & Reihlen, M. (2014). Entrepreneurial University Archetypes: A meta-synthesis of Case Study Literature. *Industry and Higher Education*, *28*(4), 245–262.

358

Brown, L., & Osborne, S. P. (2013). Risk and Innovation: Towards a framework for Risk Governance in Public Services. *Public Management Review*, *15*(2), 186–208.

Brown, P., & Lauder, H. (1995). Post-Fordist Possibilities: Education, Training and National Development. In the *South Education, and Work. World Yearbook of Education* (Bash, L., and Green, A., pp. 19–32). London: Kogan Page.

Browne, J. (2010). Lord Browne report on Securing a Sustainable Higher Education: An Independent Review of Higher Education Funding & Student Finance (Independent Review of Higher Education Funding & Student Finance). UK: Independent Review of Higher Education Funding & Student Finance.

Brush, C., Greene, P. G., & Hart, M. M. (2001). From Initial Idea to Unique Advantage: The Entrepreneurial Challenge of Constructing a Resource Base. *Academy of Management Executive*, *15*(1), 64–78.

Bryman, A. (2001). *Social Research Methods*. Oxford, England: Oxford University Press.

Bryman, A., & Bell, E. (2015). *Business Research Methods*. Oxford University Press.

Buchanan, D. A., & Bryman, A. (2009). *The Sage Handbook of Organisational Research Methods*. SAGE Publications Ltd.

Buckley, C. A., & Waring, M. J. (2013). Using Diagrams to Support the Research Process: Examples from Grounded Theory. *Qualitative Research*, 1468794112472280.

BUFDG. (2015). British Universities Finance Directors Group. British Universities Finance Directors Group (BUFDG). Retrieved from http://www.bufdg.ac.uk/financial-statements

Burgelman, R. A. (1983). Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. *Management Science*, *29*(12), 1349–1364.

Burgers, J. H., & Covin, J. G. (2014). The Contingent Effects of Differentiation and Integration on Corporate Entrepreneurship. *Strategic Management Journal*, *37*(3), 521–540.

Burnett, K. (2016). University Response to the Outcome of the EU Referendum: Vice-Chancellor Updates - Vice-Chancellor's Office - Vice-Chancellor and President. The University of Sheffield.
359

Burr, V. (2015). *Social Constructionism* (3rd ed.). UK: Routledge.

Burykhina, M. (2009). Entrepreneurial University in the Development of 'Innovative regions'. Retrieved 1 September 2015, from http://digilib.k.utb.cz/bitstream/handle/10563/8590/burykhina_2009_dp.pdf?sequence=1

Bygrave, W., D., & Minniti, M. (2000). The Social Dynamics of Entrepreneurship. *Entrepreneurship Theory and Practice*, *24*(3), 25–36.

Cantillon. (1755). *An Essay on Economic Theory: An English Translation of Richard Cantillon's* (2010 by Mark Thornton). Alabama, USA: Ludwig von Mises Institute.

Carpenter, M. A., Geletkanycz, M. A., & Wm Sanders, G. (2004). Upper Echelons Research Revisited: Antecedents, Elements, and Consequences of Top Management Team Composition. *Journal of Management*, *30*(6), 749–778.

Casson, M. C. (1982). *The Entrepreneur: An Economic Theory*. Rochester, NY: Social Science Research Network.

CEC. (2003). *The Green Paper 'Entrepreneurship in Europe': Reaction from EIM Business & Policy Research* (Business & Policy Research). Brussels, Belgium: Commission of the European Communities.

Chandy, R., & Narasimhan, O. (2011). How Micro-Entrepreneurs Could Change the World. *Business Strategy Review*, *22*(1), 52–55.

Chang, Y.-C., Phil, Y., Martin, B. R., & Chi, H.-R. (2016). Entrepreneurial Universities and Research Ambidexterity: A Multilevel Analysis. *Technovation*.

Charles, S. (2015). *Research Methods for the Behavioural Science* (5th Edition). Wadsworth Publishing Co Inc.

Charmaz, K. (2006). Constructing Grounded Theory: A Practical Guide through Qualitative Analysis. Thousand Oaks: Sage Publications.

Chumas, C. J. (2014). Intellectual Entrepreneurship. Retrieved April 28, 2018, from https://you.stonybrook.edu/charleschumas/2014/03/12/intellectual-entrepreneurship-2/

Checkland, P. (1981). *Systems thinking, systems practice*. Chichester: Wiley.

360

Christos, A., José, C. R., & Mario, G. (2012). A Resource-Based View Model in Achieving Entrepreneurial Innovation for Canadian Universities. In *European Conference on Innovation and Entrepreneurship* (p. 17-). UK: Academic Conferences International Limited.

Clark, B., R. (1998). Creating Entrepreneurial Universities: Organisational Pathways of Transformation. UK: IAU Press, Pergamon.

Clark, B., R. (2001). The Entrepreneurial University: New Foundations for Collegiality, autonomy, and achievement. *Higher Education Management and Policy*, *13*(2).

Clark, B., R. (2004). Sustaining Change in Universities: Continuities in Case Studies and Concepts. England: McGraw-Hill Education.

Clark, B. R. (2015). The Character of the Entrepreneurial University. *International Higher Education*, *38*(Winter), 2–3.

Clarke, K. (2015). Understanding Effective Teaching: Perceptions from Students, Staff, and Executive Managers in a Post-1992 University. (Thesis). University of Wolverhampton, UK.

Clarke, T. (2001). The knowledge economy. *Education & Training*, *43*(4/5), 189–196.

Clarke, A., & MacDonald, A. (2016). Outcomes to Partners in Multi-Stakeholder Cross-Sector Partnerships: A Resource-Based View. *Business & Society*, 1 –35.

Clarysse, B., Tartari, V., & Salter, A. (2011). The impact of Entrepreneurial Capacity, Experience, and Organisational Support for Academic Entrepreneurship. *Research Policy*, *40*, 1084–1093.

Cleverley-Thompson, S. (2015). The Role of Academic Deans as Entrepreneurial Leaders in Higher Education Institutions. *Innovative Higher Education*, 1–11.

Cohen, L., Manion, L., & Morrison, K. (2000). *Research Methods in Education 5th Edition*. London and New York: Routledge.

Cohen, W. M., Nelson, R. R., & Walsh, J. P. (2002). Links and Impacts: The Influence of Public Research on Industrial R&D. *Management Science*, *48*, 1–23.

Committee on Higher Education. (1963). Higher education: Report of the Committee appointed by the Prime Minister under the Chairmanship of Lord Robbins 1961-63 (No. Cmnd. 2154,). London.

Committee on Standards. (2010). Second Report of the Committee on Standards in Public Life: Higher and Further Education (pp. 1–19).

Complete University Guide. (2014). MOOCs (Massive Open Online Courses). Retrieved 18 September 2015, from http://www.thecompleteuniversityguide.co.uk/distance-learning/moocs-(massive-open-online-courses)/

Copeland, A. J., & Agosto, D. E. (2012). Diagrams and Relational Maps: The Use of Graphic Elicitation Techniques with Interviewing for Data Collection, Analysis, and Display. *International Journal of Qualitative Methods*, *11*(5), 513–533.

Corbett, A., Covin, J. G., O'Connor, G. C., & Tucci, C. (2013). Corporate Entrepreneurship: State-of-the-Art Research and a Future Research Agenda. *Journal of Product Innovation Management*, *3*(5), 812–820.

Coughlan, S. (2015a). Students Doubt Fees Value for Money. Retrieved 25 June 2015, from http://www.bbc.co.uk/news/education-32991494

Coughlan, S. (2015b). University Inspections face a Major Overhaul. Retrieved 25 June 2015, from http://www.bbc.co.uk/news/education-33254140

Covin, J. G., & Slevin, D. P. (1991). A Conceptual Model of Entrepreneurship as firm Behaviour. *Entrepreneurship, Theory, and Practice*, *16*, 7–25.

Coyle, P., Gibb, A., & Haskins, G. (2013). The Entrepreneurial University: From Concept to Action. *National Centre for Entrepreneurship in Education (NCEE)*, 2–58.

Creswell, J. W. (1998). Qualitative Inquiry and Research Design: Choosing among five Traditions. Thousand Oaks, CA: Sage.

Creswell, J. W. (2003). Research Design: Qualitative, Quantitative and Mixed Methods Approaches (2nd ed.). London: SAGE Publications Ltd.

Creswell, J. W. (2007). Qualitative Inquiry and Research Design: Choosing among Five Approaches. Thousand Oaks, CA: Sage Publications.

Creswell, J. W. (2009). Editorial: Mapping the Field of Mixed Methods Research. *Journal of Mixed Methods Research*, *3*(2), 95–108.

Creswell, J. W. (2013). Qualitative inquiry and research design: Choosing among five traditions (3rd ed.). Thousand Oaks, CA: Sage.

Creswell, J., W. (2014). Research Design: Qualitative, Quantitative, and Mixed Method Approaches (4th ed.). London: Sage.

Crilly, N., Blackwell, A. F., & Clarkson, P. J. (2006). Graphic Elicitation: Using Research Diagrams as Interview Stimuli. *Qualitative Research*, *6*(3), 341–366.

Crilly, N., Clarkson, P. J., & Blackwell, A. F. (2006). Using Research Diagram for Member Validation in Qualitative Research. In D. Barker-Plummer, R. Cox, & N. Swoboda (Eds.), *Diagrammatic Representation and Inference* (pp. 258–262). Springer Berlin Heidelberg.

Coventry University. (2010). Corporate Plan 2010-2015.

Cunningham, J. A., Menter, M., & Young, C. (2016). A Review of Qualitative Case Methods Trends and Themes used in Technology Transfer Research. *The Journal of Technology Transfer*, *Pre-Print Version*.

Dana, L.-P., & Dana, T. E. (2005). *Expanding the Scope of Methodologies Used in Entrepreneurship Research* (SSRN Scholarly Paper No. ID 1503857). Rochester, NY: Social Science Research Network.

Davey, T. (2013). *State of European University-Business Cooperation*. Presented at the Science-to-Business Marketing Research Centre, Münster, Germany. Retrieved from http://www.slideshare.net/todddavey/state-of-european-unibversoidavey-2013

Davey, T., Baaken, T., Galan Muros, V., & Meerman, A. (2011). The State of European University-Business Cooperation: Part of the DG Education and Culture Study on the Cooperation between Higher Education Institutions and Public and Private Organisations in Europe. European Commission, DG Education, and Culture.

Davidson, C. C. (2014). MOOCs and the Promise of Internationalisation. Retrieved from http://chronicle.com/blogs/future/2014/01/29/moocs-and-the-promise-of-internationalisation/
363

Davidsson, P., Delmar, F., & Wiklund, J. (2006). *Entrepreneurship and the growth of firms.* Cheltenham, UK: Edward Elgar.

Davidsson, P., & Wiklund, J. (2006). Conceptual and empirical challenges in the study of firm growth. In *Entrepreneurship and the growth of firms.* (pp. 39–47). Cheltenham, UK: Edward Elgar.

Davies, H. (2002). *A Review of Enterprise and the Economy in Education* (pp. 6–63). Norwich UK: Her Majesty's Stationery Office.

Davies, J. (2014). Hybrid Upper Middle Manager Strategizing Practices: Linking Archetypes and Contingencies in the UK Business School Deanship (Thesis). Coventry: Warwick Business School, UK.

Davies, J. L. (1987). The Entrepreneurial and Adaptive University. Report of the Second U.S. Study Visit. *International Journal of Institutional Management in Higher Education*, *11*(1), 12–104.

DBIS. (2013). *Enterprise Education Impact in Higher Education and Further Education* (pp. 3–104). Department for Business Innovation and Skills: Department for Business Innovation and Skills.

DBIS. (2014). *Growth Dashboard*. UK: Department for Business, Innovation, and Skills.

DBIS. (2015). Recognised UK degrees - Detailed guidance - GOV.UK.

Deal, T. E., & Kennedy, A. A. (1982). *Corporate Cultures: The Rites and Rituals of Corporate Life*. Addison-Wesley Pub. Co.

Dearing, R., & NCIHE. (1997). Higher Education in the Learning Society: Dearing Report of the National Committee of Inquiry into Higher Education. *Great Britain Report of the National Committee of Inquiry into Higher Education*.

Debackere, K., & Veugelers, R. (2005). The role of Academic Technology Transfer Organisations in Improving Industry Science Links. *Research Policy*, *34*(3), 321–342.

Denison, D. R. (1996). What is the Difference Between Organisational Culture and Organisational Climate? A native's Point of View on a Decade of Paradigm Wars. *The Academy of Management Review*, *21*(3), 619–654.

Denny, S. (2011). A Socially Enterprising University: A New Model for Higher Education? Retrieved 7 May 2016, from http://www.theguardian.com/social-enterprise-network/2011/jun/13/social-enterprise-higher-education-northampton-university

Denzin, N. K. (1984). *The research acts*. New Jersey: Englewood Cliffs Prentice Hall.

Denzin, N. K. (2009). The research acts: A theoretical introduction to sociological methods. UK and USA: Aldine Transaction.

Denzin, N. K. (2017). The research acts: A theoretical introduction to sociological methods. UK and USA: Routledge.

Dey, I. (1999). *Grounding Grounded Theory*. San Diego, CA: Academic Press.

DfCELS. (2009). *For our Future: the 21st-century Higher Education Strategies and Plans for Wales* (pp. 1–21). Wales. UK: Department for Children, Education, Lifelong Learning and Skills (DfCELS) and Welsh Assembly Government.

Department of Education. (2016). Teaching Excellence Framework: Year Two specification. (pp. 5–77). The UK.

DfEL. (Website). Higher Education Knowledge Exchange. Retrieved 31 December 2015, from https://www.delni.gov.uk/articles/higher-education-knowledge-exchange

Di Gregorio, D., & Shane, S. (2003). Why do Some Universities Generate more Start-ups than Others? *Research Policy*, *32*(2), 209–227.

Di Guardo, M. C., & Harrigan, K. R. (2015). Shaping the Path to Inventive Activity: The Role of Experience in R&D Alliances. *Journal of Technology Transfer*, *20*.

Diaconu, M., & DUŢU, A. (2015). The Role of the Modern University in Supporting the Entrepreneurial Ecosystem. *European Journal of Interdisciplinary Studies*, *7*(1), 11–24.

DiCicco-Bloom, B., & Crabtree, B. F. (2006). The Qualitative Research Interviews. *Medical Education*, *40*(4), 314–321.

Dornbusch, F., Kroll, H., & Schricke, E. (2012). Multiple Dimensions of Regionally-Oriented University Involvement: How Motivation and Opportunity Prompt German Researchers to Engage in Different Ways. *Econstor Working Papers, Firms and Regions, No. R6/2012*, 1–35.

DrCath. (2012). Document Analysis. Retrieved 24 August 2015, from http://www.drcath.net/toolkit/document.html

DTI. (2006). United Kingdom National Strategic Reference Framework: EU Structural Funds Programmes: 2007-2013. Retrieved from http://www.dfpni.gov.uk/final_nsrf.pdf

Duderstadt, J. J. (2000). *A University for the 21st Century*. Ann Arbor: The University of Michigan Press.

Dutta, D. K., & Thornhill, S. (2008). The evolution of growth intentions: Toward a cognition-based model. *Journal of Business Venturing*, *23*(3), 307–332.

Dul, J., & Hak, T. (2007). *Case Study Methodology in Business Research*. Oxford, England: Butterworth-Heinemann.

Easterby-Smith, M., Thorpe, R., Jackson, P., & Lowe, A. (2008). *Management Research*. Sage Publications.

EC. (2000). *Towards a European Research Area* (COM No. 6). Brussels.: European Commission.

EC. (2014). Communication from the Commission to the European Parliament, the Council, The European Economic and Social Committee and the Committee of the Regions: Taking stock of the Europe 2020 Strategy for Smart, Sustainable and Inclusive Growth (130) (pp. 3–21). Brussels: Communication from the Commission (COM).

ECCTIS. (2012). Description of Higher Education in the UK: England, Wales, and Northern Ireland. EUROPASS.

EC & OECD. (2012). *A Guiding Framework for Entrepreneurial Universities* (pp. 1–53). Organisation for Economic Co-operation and Development Report.

EC & OECD. (June 2014c). HEInnovate Workshop. In *World, International Conference of Small Business Proceedings*. Dublin, Ireland: OECD.

EC & OECD. (May 2014b). The HEInnovate UK Thematic Forum on Developing Entrepreneurial University. In *Thematic Forum*. Swansea University, Wales, UK: OECD.

Economist. (2015). Higher Education in the 21st century: Meeting Real World Demands. Retrieved 23 November 2015, from analysis/1786/case studies

366

Edmondson, J. (2010). *Knowledge Exchange and the Third Mission of Universities* (Vol. 24). UK: Industry & Higher Education.

Eghtedari, N., Hosseini, M., Malekmohammadi, I., & Chizari, M. (2013). Corporate Entrepreneurship Antecedents and Performance in Agricultural Advisory Services Corporations in West of Iran. *International Research Journal of Applied and Basic Sciences*, *5*(6), 80–812.

EHEA. (1999). The Bologna Declaration of 19 June 1999: Joint Declaration of the European Ministers of Education. The European Higher Education Area.

Eisenhardt, K. M. (1989). Building Theories from Case Study Research. *Academy of Management Journal*, *31*(4), 532–550.

El-Annan, S. H. (2013). Innovation, Proactive, and Vision are Three Integrated Dimensions between Leadership and Entrepreneurship. *European Journal of Business and Social Sciences*, *1*(12), 148–163.

Elspeth McFadzean, Andrew O'Loughlin, & Elizabeth Shaw. (2005). Corporate Entrepreneurship and Innovation part 1: The Missing Link. *European Journal of Innovation Management*, *8*(3), 350–372.

Ernest, P. (1999). Social Constructivism as a Philosophy of Mathematics: Radical Constructivism. Retrieved 9 December 2015, from http://people.exeter.ac.uk/PErnest/soccon.htmErnest & Young. (2016). *Start-up-Barometer Deutschland - January 2016 - EY-Start-up-Barometer-2016.pdf* (pp. 2–13). Deutschland, Europe. Retrieved from http://www.ey.com/Publication/vwLUAssets/EY-Start-up-Barometer-2016/%24FILE/EY-Start-up-Barometer-2016.pdf

Esterman, T., & Pruvot, E. B. (2011). Financially Sustainable Universities II: European Universities Diversifying Income Streams. European Universität Association Publications.

Etzkowitz, H. (1993). Enterprises from Science: The Origins of Science-Based Regional Economic Development and the Venture Capital Firm. *Minerva*, *31*(3), 326–360.

Etzkowitz, H. (1998). The Norms of Entrepreneurial Science: Cognitive Effects of the New University–Industry Linkages. *Research Policy*, *27*(8), 823–833.

Etzkowitz, H. (2002). MIT and the Rise of Entrepreneurial Science. Routledge.

Etzkowitz, H. (2003a). Innovation in Innovation: The Triple Helix of University-Industry-Government Relations. *Social Science Information*, *42*(3), 293–338.

Etzkowitz, H. (2003b). Research Groups as 'Quasi-firms': The Invention of the Entrepreneurial University. *Research Policy*, *32*(1), 109–121.

Etzkowitz, H. (2004). The Evolution of the Entrepreneurial University. *International Journal of Technology and Globalisation*, *1*(1), 64–77.

Etzkowitz, H. (2012). An Innovation Strategy to End the Second Great Depression. *European Planning Studies*, *20*(9), 1439–1453.

Etzkowitz, H. (2013a). Anatomy of the Entrepreneurial University. *Social Science Information*, *52*, 486–510.

Etzkowitz, H. (2013b). StartX and the 'Paradox of Success': Filling the gap in Stanford's Entrepreneurial Culture. *Social Science Information*, 605–627.

Etzkowitz, H. (2014). The Entrepreneurial University Wave: From Ivory Tower to Global Economic Engine. *Industry and Higher Education*, *28*(4), 223–232.

Etzkowitz, H., & Dzisah, J. (2015). Professors of Practice and the Entrepreneurial University. *International Higher Education*, 10–11.

Etzkowitz, H., & Leydesdorff, L. (1995). The Triple Helix: University-Industry-Government Relations. *European Association for the Study of Science and Technology (EASST)*.

Etzkowitz, H., & Viale, R. (2010). Polyvalent Knowledge and the Future of the University: A third Academic Revolution? *Critical Sociology*, *36*(4), 595–609.

Etzkowitz, H., Webster, A., Gebhardt, C., & Terra, B. R. C. (2000). The future of the university and the University of the future: Evolution of ivory tower to entrepreneurial paradigm. *Research Policy*, *29*(2), 313–330.

EUA. (2003). Response to the Communication from the Commission: The Role of the Universities in the Europe of Knowledge. The European University Association (EUA).

EUA. (2007). *Creativity in Higher Education: Report on the EUA Creativity Project 2006-07* (No. 9789081069892) (pp. 4–42). European University Association: Education & Culture.

European Commission. (2007a). Improving Knowledge Transfer between Research Institutions and Industry across Europe: Embracing Open Innovation (COM No. 182). Brussels: European Commission.

European Commission. (2007b). Voluntary Guidelines for Universities and other Research Institutions to Improve their Links with Industry across Europe (SEC No. 449). Brussels, Belgium: European Commission.

European Commission. (2002). *The European Research Area: An Internal Knowledge Market.* Luxembourg: Office for Official Publications of the European Communities.

European Commission. (2003). *The Role of the universities in Europe of knowledge* (No. COM, 58). Brussels: Report to European Commission.

European Commission. (2004). Proposal for a decision of the European Parliament and the Council Establishing an Integrated Action Program in the Field of Lifelong Learning (SEC No. 971). Brussels: European Commission.

European Commission. (2005). Mobilising the Brainpower of Europe: Enabling Universities to make their full contribution to the Lisbon Strategy (COM No. 152). Brussels.: European Commission,

European Commission. (2015). Innovation in SMEs: Horizon 2020. European Commission.

Eyal, O., & Kark, R. (2004). How do Transformational Leaders Transform Organisations? A Study of the Relationship Between Leadership and Entrepreneurship. *Leadership and Policy in Schools*, *3*(3), 211–236.

Farsi, J. Y., Imanipour, N., & Salamzadeh, A. (2012). Entrepreneurial University Conceptualisation: Case of Developing Countries. *Global Business and Management Research: An International Journal*, *4*(2), 193–204.

Farsi, J. Y., Modarresi, M., Motavaseli, M., & Salamzadeh, A. (2014). *Institutional Factors Affecting Academic Entrepreneurship: The Case of University of Tehran* (SSRN Scholarly Paper No. ID 2462870). Rochester, NY: Social Science Research Network.

369

Faust, D. G. (2010). The Role of the University in a Changing World. Retrieved 5 March 2015, from http://www.harvard.edu/president/speech/2010/role-university-changing-world

Fayolle, A., & Klandt, H. (2006). International Entrepreneurship Education: Issues and Newness. In *INET (Conference)*. USA: Edward Elgar.

Fayolle, A., Kyr, P., & Li, F. (2015). *Developing, Shaping, and Growing Entrepreneurship*. Edward Elgar Publishing.

Feldman, M. P. (1994a). Knowledge Complementarity and Innovation. *Small Business Economics*, *6*(3), 363–372.

Feldman, M. P. (1994b). *The Geography of Innovation*. Boston: Kluwer Academic.

Ferguson, P. W., Hall, G. E., & Hopwood, J. D. (2015). Leading and Managing the 21st Century Research University: Creating, Implementing, and Sustaining Strategic Change - viewcontent.cgi. *International Journal of Leadership and Change*, *3*(1), 29–39.

Ferreira, J. (2002). Corporate Entrepreneurship: A Strategic and Structural Perspective. In *International Council for Small Business* (p. 1). San Juan, Puerto Rico.

Ferreira, J. M., Raposo, M. L. B., & Leitão, J. (2006). The role of Entrepreneurial Universities in interfacing Competitive Advantages: The Case of Beira Interior region (Portugal). *Munich Personal RePEc Archive (MPRA) Paper*, *Paper No. 486*, 1–29.

Ferreira, Raposo, Rutten, & Varga. (2013). Cooperation, Clusters, and Knowledge Transfer: Universities and Firms Towards Regional Competitiveness (1st ed.). Springer Berlin Heidelberg.

Fetterman, D. M. (1989). *Ethnography Step by Step*. London: SAGE Publications Ltd.

Financial Times Lexicon. (2013). Small Private Online Course.

Fini, R., Fu, K., Mathisen, M. T., Rasmussen, E., & Wright, M. (2016). Institutional Determinants of University Spin-off Quantity and Quality: A Longitudinal, Multilevel, Cross-country Study. *Small Business Economics*, 1–31.

Fini, R., Grimaldi, R., & Sobrero, M. (2009). Factors Fostering Academics to Start-up New Ventures: An Assessment of Italian Founders' Incentives. *Journal of Technology Transfer*, *34*(4), 380–402.

Finkle, T. A. (2012). Corporate Entrepreneurship and Innovation in Silicon Valley: The Case of Google, Inc. *Entrepreneurship Theory and Practice*, *36*(4), 863–884.

Flick, U. (2014). *An Introduction to Qualitative Research* (5th ed.). Los Angeles: SAGE.

Florida, R. (1999). Engine or Infrastructure? The University Role in Economic Development. In *Industrialising Knowledge: University-Industry Linkages in Japan and the United States* (Branscomb, L., Kodama, F., and Florida, R., pp. 589–610). MIT Press.

Fogelberg, H., & Lundqvist, M., A. (2013). Integration of Academic and Entrepreneurial Roles: The case of nanotechnology research at the Chalmers University of Technology. *Science and Public Policy*, *40*(1), 127–139.

Foss, L., & Gibson, D. v. (2015). The Entrepreneurial University: Context and Institutional Change. UK: Routledge.

Fox, A. (2013). From MOOCs to SPOCs. *Communications of the ACM*, *56*(12), 38–40.

Fryges, H., & Wright, M. (2014). The origin of spin-offs: A typology of corporate and academic spin-offs. *Small Business Economics*, *43*(2), 245–259.

Full Fact. (2016). Full Fact: EU Referendum Hub. Retrieved 18 September 2016, from https://fullfact.org/europe/

Gall, M. D., Gall, J. P., & Borg, W. R. (2003). *Educational Research: An Introduction* (7th ed.). Boston, MA: A & B Publications.

Galvan, C., Bilbao-Osorio, B., Blanke, J., Davis, N., Drzeniek Hanouz, M., & Pozza, S. (2014). *The Europe 2020 Competitiveness Report: Building a More Competitive Europe 2014 Edition*. World Economic Forum.

Garrett Jr., R. P., & Holland, D. V. (2015). Environmental effects on the cognitions of corporate and independent entrepreneurs. *Small Business Economics*, *45*(2), 369–381.

Gasse, Y., & Tremblay, M. (2006). Entrepreneurship Education among students at a Canadian University: An extensive empirical study of students' entrepreneurial

371

preferences and intentions. *Fayolle Alain and Klandt Heinz 2006 'International Entrepreneurship Education Issues and Newness', Ed. Edward Elgar,* 241-.

GCU. (Website). Glasgow Caledonian University. Retrieved 28 August 2015, from http://ashokau.org/programs/changemaker-campus/glasgow-caledonian-university/

Geertz, C. (1973). *The Interpretive of Cultures*. Basic Books.

Geiger, R. L. (2004). Knowledge and Money: Research Universities and the Paradox of the Marketplace. Stanford, California: Stanford University Press.

Gergen, K. J. (1985). The Social Constructionist Movement in Modern Psychology. American Psychologist.

Gheorghe, M. (2014). The Critical Factors of Entrepreneurial University in Engineering Education: A Conceptual and Empirical Analysis. *Balkan Region Conference on Engineering and Business Education*, *1*(1), 35–40.

Gibb, A. (2002). In Pursuit of a New 'Enterprise' and 'Entrepreneurship' Paradigm for Learning: Creative Destruction, New Values, New Ways of Doing Things and New Combinations of Knowledge. *International Journal of Management Reviews*, *4*, 233–269.

Gibb, A. (2012). Exploring the Synergistic Potential in Entrepreneurial University Development: Toward the Building of a Strategic Framework. *Annals of Innovation & Entrepreneurship*, *3*(0).

Gibb, A. A. (1987). Enterprise Culture — Its Meaning and Implications for Education and Training. *Journal of European Industrial Training*, *11*(2), 2–38.

Gibb, A., & Hannon, P. (2006). Towards the Entrepreneurial University. *International Journal of Entrepreneurship Education*, *4*, 73–110.

Gibb, A., Haskins, G., & Robertson, I. (2009). Leading the Entrepreneurial University: Meeting the Entrepreneurial Development needs of Higher Education Institutions. *The National Council for Graduate Entrepreneurship*, 1–44.

Gibbs, G. R., Clarke, D., Celia, T., Silver, C., & Lewis, A. (2011). Online QDA - Introduction to Qualitative Data Analysis (QDA).

Gjerding, A. N. (2005). *Entrepreneurial University- Myth or Reality: University of Strathclyde* (pp. 3–37). European Consortium of Innovative Universities (ECIU) Leadership Programme.

Glaser, B., G., & Strauss, A. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. Chicago: Aldine Pub. Co.

Glaser, I., Fourné, S. P., & Elfring, T. (2015). Achieving Strategic Renewal: The Multi-Level Influences of Top and Middle Managers' Boundary-Spanning., *45*(2), 305–327.

Goddard, J., Coombes, M., Kempton, L., & Vallance, P. (2014). Universities as anchor institutions in cities in a turbulent funding environment: Vulnerable institutions and vulnerable places in England. *Cambridge Journal of Regions, Economy, and Society*, *7*(2), 307–325.

Goddard, J., & Vallance, P. (2013). The University and the City: Higher Education and Cities in the UK. Routledge.

Goethner, M., Obschonka, M., Silbereisen, R. K., & Cantner, U. (2009). Approaching the Agora–Determinants of Scientists' Intentions to Purse Academic Entrepreneurship. *JENA Economic Research Papers*, 1–45.

Golding, B., & Trafford, V. (2011). Demystifying the Doctoral Viva. In *Positive Futures for Higher Education: Connections, Communities, and Criticalities* (pp. 1–5).

Gonzales, L., D., Martinez, E., & Ordu, C. (2013). Exploring Faculty experiences in a striving university through the lens of academic capitalism. *Studies in Higher Education*, 1–18.

GRAPHIQ. (2015). University Comparison: Rankings & Reviews.

Grbch, C. (2013). *Qualitative data analysis. An introduction*. London: SAGE Publications.

Green, D. (1994). What Is Quality in Higher Education? Concept, Policy, and Practice. In What is Quality in Higher Education? (Diana Green, pp. 13–30). London: Taylor & Francis, 1900 Frost Road, Bristol.

Grégoire, D. A., Noël, M. X., Déry, R., & Béchard, J.-P. (2006). Is There Conceptual Convergence in Entrepreneurship Research? A Co-Citation Analysis of Frontiers of

Entrepreneurship Research, 1981–2004. *Entrepreneurship Theory and Practice*, *30*(3), 333–373.

Griffith, A. (1998). Insider/Outsider: Epistemological Privilege and Mothering Work'. *Human Studies, 21*, 361–376.

Grimaldi, R., Kenney, M., Siegel, D. S., & Wright, M. (2011). 30 years after Bayh–Dole: Reassessing Academic Entrepreneurship. *Research Policy*, *40*(8), 1045–1057.

Grix, J. (2002). Introducing Students to the Generic Terminology of Social Research. *Politics*, *22*(3), 175–186.

Grix, J. (2004). *The Foundations of Research.* Basingstoke: Palgrave Macmillan.

Groth, S., & Tierrock, S. (2011). The importance of academic spin-offs. In *University-business cooperation: Tallinn* (Gunnar Prause and Urve Venesaar, pp. 135–147). BWV Verlag.

Guardian League Tables. (2016). University league tables 2016.

Guba, E. G., & Lincoln, Y. S. (1994). Competing Paradigms in Qualitative Research. In *Handbook of Qualitative Research* (Denzin, N.K. & Lincoln, Y. S.). Thousand Oaks, CA: Sage.

Guenther, J., & Wagner, K. (2008). Getting out of the Ivory Tower: New Perspectives on the Entrepreneurial University. *European Journal of International Management*, *2*(4), 400–417.

Guerrero, M., Cunningham, J. A., & Urbano, D. (2015). The Economic Impact of Entrepreneurial Universities' activities: An Exploratory Study of the United Kingdom. The *Research Policy*, 44(3), 748–764.

Guerrero, M., David, U., James, C., & Damien, O. (2014). Entrepreneurial Universities in two European Regions: a case study comparison. *The Journal of Technology Transfer*, *39*(3), 415–434.

Guerrero, M., Kirby, D. A., & Urbano, D. (2006). *A Literature Review on Entrepreneurial Universities: An Institutional Approach* (SSRN Scholarly Paper No. ID 1838615). Rochester, NY: Social Science Research Network.

374

Guerrero, M., & Urbano, D. (2010). The Development of an Entrepreneurial University. *Journal of Technology Transfer*.

Guerrero, M., & Urbano, D. (2011). The Creation and Development of Entrepreneurial Universities in Spain: An Institutional Approach. New York: Nova Science Publishers, Inc.

Guerrero, M., & Urbano, D. (2012). The Development of an Entrepreneurial University. *Journal of Technology Transfer*, *37*, 43–74.

Guerrero, M., & Urbano, D. (2013). Entrepreneurial Universities: Determinants, Impacts and Challenges. *Triple Helix Association*, *2*(6).

Guerrero, M., Urbano, D., & Salamzadeh, A. (2014). Chapter 7: Evolving Entrepreneurial Universities: Experiences and Challenges in the Middle Eastern context. In *Handbook on the Entrepreneurial University* (Redford, D. & Fayolle, A., pp. 163–187). UK: Edward Elgar.

Guest, G., & MacQueen, K. M. (2008). *Handbook of team-based qualitative research*. UK: Altamira Press.

Gunasekara, C. (2004). Universities and Communities: A Case Study of Change in the Management of a University. *Prometheus*, *22*(2), 201–211.

Guth, W., & Ginsberg, A. (1990). Guest Editors' Introduction: Corporate Entrepreneurship. *Strategic Management Journal*, *11*, 297–308.

Hackett, S. M., & Dilts, D. M. (2004). A Systematic Review of Business Incubation Research. *Journal of Technology Transfer*, *29*(1), 55–82.

Hadjimanolis, A. (2000). A Resource-Based View of Innovativeness in Small Firms. *Technology Analysis & Strategic Management*, *12*(2), 263–281.

Halsey, A. H. (1997). Trends in Access and Equity in Higher Education: Britain in International Perspective. In *Education, Culture, Economy, and Society* (Halsey, A. H., Lauder, H., Brown, P. and Stuart Wells, A., pp. 638–645). Oxford, England: Oxford University Press.

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organisation as a Reflection of Its Top Managers. *Academy of Management Review*, *9*(2), 193–206.
375

Hannan, A., & Silver, H. (2000). *Innovating in Higher Education: Teaching, Learning, and Institutional Cultures*. Buckingham: Society for Research in Education & Open University Press.

Hannon, P. D. (2013). Letter from Academia: Why is the Entrepreneurial University Important? *Journal of Innovation Management*, *1 (2)*, 10–17.

Harris, S. (2011). The University in Translation: Internationalising Higher Education. A&C Black.

Hay, C. (2002). Political Analysis: A Critical Introduction. Basingstoke: Palgrave.

Hazelkorn, E. (2015). Rankings and the Reshaping of Higher Education: The Battle for World-Class Excellence. Springer.

Heavey, C., & Simsek, Z. (2013). Top Management Compositional Effects on Corporate Entrepreneurship: The Moderating Role of Perceived Technological Uncertainty. *Journal of Product Innovation Management*, *46*(8), 1289–1314.

HEFCE. (2015a). Higher Education Funding Council for England: 2015-16 Annual Funding Allocations for Higher Education Institutions.

HEFCE. (2015b). Higher Education Funding Council for England: Social Innovation Fund. Retrieved 2 December 2015, from http://www.hefce.ac.uk/funding/sifund/

HEFCE. (2015c). Universities and SMEs Working Together for Places and People.

HEFCW. (2002). Reaching Higher Strategy for Higher Education.

HEFCW. (2010). HEFCW Corporate Strategy 2010-11-2012-13. Higher Education Funding Council for Wales.

HEFCW. (2011). Higher Education Funding Council for Wales Remit Letter 2011-12. Higher Education Funding Council for Wales.

HEFCW. (2013). Higher Education Funding Council for Wales Remit Letter 2013/14 - End of Year Financial Out-turn 2013-14.

HEFCW. (2015a). Higher Education Funding Council Remit Letter 2015-16. Higher Education Funding Council for Wales.

HEFCW. (2015b). The Overall Breakdown of the Total Funding Awarded in 2015_16.

Henderson, J. A., & Smith, J. J. (2002). Academia, Industry, and the Bayh-Dole Act: An Implied Duty to Commercialise. Centre for the Integration of Medicine and Innovative Technology, Harvard University.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship Education and Training: Can Entrepreneurship be taught? Part I. *Education + Training*, *47*, 98–111.

Hermann, B. L., Marmer, M., Dogrultan, E. Y., & Holtschke, D. (2012). *Startup Ecosystem Report 2012: Part One* (pp. 3–124). Compass Startup Genome and Telefonica Digital.

Heron, J. (1996). Co-operative Inquiry: Research into the Human Condition. London: Sage Publications,

HESA. (2013a). Higher Education Statistics Agency: Student Population 2012/13.

HESA. (2013b). Non-UK domicile students: Indian, Pakistani, Irish and Polish domicile student numbers fall in 2011/12.

HESA. (2014). Higher Education Statistics Agency: Student Population 2013/14.

HESA. (2015a). DLHE Collection 2014/15: Version 1.1 Produced 2015-03-26.

HESA. (2015b). Statistical First Release 210: Student Enrolments and Qualifications.

Hewitt-Taylor, J. (2002). Insider knowledge: Issues in Insider Research. *Nursing Standard'*, *16*(46), 33–35.

Higgins, D., & Refai, D. (2017). Creating Meaningful Entrepreneurial Practice: Crafting Pedagogical Awareness. In *Entrepreneurship Education: New Perspectives on Entrepreneurship Education* (Paul Jones, Gideon Maas, Luke Pittaway, pp. 171–195). UK: Emerald Group Publishing Ltd.

Higgins, D., Refai, D., & Keita, D. (2018). Focus Point: The need for alternative insight into the entrepreneurial education paradigm. *Journal of Small Business and Entrepreneurship*, *In Press*, 19.

Hiles, D. R. (2008). Axiology. In *the SAGE Encyclopedia of Qualitative Research Methods* (Given Lisa). 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc.

377

Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. A., & Ladany, N. (2005). Consensual Qualitative Research: An Update. *Journal of Counselling Psychology*, *52*, 196–205.

Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A Guide to Conducting Consensual Qualitative Research. *The Counselling Psychologist, 25*, 517–572.

Hind, C., & Steyn, R. (2015). Corporate entrepreneurship - Distilling the concept. *The Southern African Journal of Entrepreneurship and Small Business Management*, *7*(1), 69–87.

Hofer, A.-R., & Dimitrov, G. (2014). *Promoting Innovation & Entrepreneurial Mindsets through Higher Education: Country-level Review Bulgaria* (pp. 3–83). Bulgaria: European Commission and OECD. Retrieved from http://info.technopolis-group.com/HEInnovate_Bulgaria/HEInnovate_Bulgaria_final_report.pdf

Hofstede, G., Neuijen, B., Ohayv, D. D., & Sanders, G. (1990). Measuring Organisational Cultures: A Qualitative and Quantitative Study Across Twenty Cases. *Administrative Science Quarterly*, *35*(2), 286–316.

Hornsby, J. S., Kuratko, D. F., Holt, D. T., & Wales, W. J. (2013). Assessing a Measurement of Organisational Preparedness for Corporate Entrepreneurship. *Journal of Product in Novation Management*, *30*(5), 937–955.

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. (2002). Middle Managers' Perception of the Internal Environment for Corporate Entrepreneurship: Assessing a Measurement Scale. *Journal of Business Venturing*, *17*(3), 253–273.

Hsieh, P.-H. (2009). An Innovative Approach for Reviewing Case Studies Conducted at a Taiwan University - Information Management Perspectives. *The Journal of International Management Studies*, *4*(2), 231–239.

Hu, M.-C. (2009). Developing Entrepreneurial Universities in Taiwan The Effects of Research Funding Sources. *Science Technology & Society*, *14*(1), 35–57.

Hughes, J. (2012). *SAGE Visual Methods*. SAGE.

378

Huyghe, A., Knockaer, M., & Der Foo, M. (2013). The Influence of Organisational Culture and Climate on Entrepreneurial Intentions among Research Scientists. *Frontiers of Entrepreneurship Research*, *33*(4), 1–15.

Huyghe, A., & Knockaert, M. (2015). The Relationship between University Culture and Climate Research Scientists' Spin-off Intentions. In *University Evolution, Entrepreneurial Activity and Regional Competitiveness: Academic Entrepreneur* (David Audretsch, Erik Lehmann, Michele Meoli, Silvio Vismara). Springer-International Studies in Entrepreneurship.

Inger, S., Enoch, T., Harding, C., & Huisman, J. (2013). In Practice: Adaptive capability in higher education institutions. Retrieved 2 September 2015, from http://www.lfhe.ac.uk/en/research-resources/publications/past-editions/engage-summer-2013/in-practice/index.cfm

International Unit. (2013). *International Higher Education in Facts and Figures* (pp. 4–28). UK: UK HE International Unit.

Inzelt, A. (2004). The evolution of University–Industry–Government Relationships during the Transition. *Research Policy*, *33*(6), 975–995.

Ireland, R., Covin, J. G., & Kuratko, D. F. (2009). Conceptualising Corporate Entrepreneurship strategy. *Entrepreneurship Theory and Practice*, 19–46.

Ireland, R. D., Hitt, M. A., & Sirmon, D. G. (2003). A Model of Strategic Management: The Construct and its Dimensions. *Journal of Management*, *29*(6), 963–989.

Ireland, R. D., Kuratko, D. F., & Morris, M. H. (2006). A health audit for Corporate Entrepreneurship: Innovation at all levels: Part I. *Journal of Business Strategy*, *27*(1), 10–17.

Irvine, A. (2010). *Using Phone Interviews, Realities Toolkit* (No. 14) (pp. 1–7). UK: ESRC (Economic & Social Research Council) & NCRM (National Centre for Research Methods).

Jacob, M., Lundqvist, M., & Hellsmark, H. (2003). Entrepreneurial Transformations in the Swedish University System: The Case of the Chalmers University of Technology. *Research Policy*, *32*(9), 1555–1568.
379

Jackson, K. M., Pukys, S., Castro, A., Hermosura, L., Mendez, J., Vohra-Gupta, S., Morales, G. (2018). Using the transformative paradigm to conduct a mixed method needs assessment of a marginalized community: Methodological lessons and implications. *Evaluation and Program Planning*, *66*, 111–119.

Jarboe, N. (2013). *Women Count: Leaders in Higher Education* (pp. 1–52). UK: Women Count.

Jarvis, P. (2001). Universities and Corporate Universities: The Higher Learning Industry in Global Society. Psychology Press.

Javadi, M., & Zarea, K. (2016). Understanding Thematic Analysis and its Pitfall. *Journal of Client Care*, 1(1), 33–39.

JobsQ. (2015). Research Impact & Public Engagement for Career Success. Retrieved 29 July 2015, from http://www.jobs.ac.uk/careers-advice/resources/careers-videos/jobsq-live-video-hangout-research-impact-public-engagement-for-career-success

Johnson, G. (1992). Managing Strategic Change: Strategy, Culture, and Action. *Long Range Planning*, *25*(1), 28–36.

Jones, M. (2008). Welsh Government Review of Higher Education in Wales Phase 1: Student Finance Arrangements Wales, UK: Welsh Assembly Government.

Jones, M. (2009). Welsh Government Review of Higher Education in Wales - Phase 2. Wales, UK: Welsh Assembly Government.

Jones, O., & Crompton, H. (2009). Enterprise Logic and Small Firms: A Model of Authentic Entrepreneurial Leadership. Journal of Strategy and Management, 2(4), 329–351.

Jones, P., Johnes, A., Packham, G., & Miller, C. (2008). Student Attitudes Towards Enterprise Education in Poland: A Positive Impact. *Education and Training*, *50*(7), 597–614.

Jones, P., Packham, G., Pickernell, D., & Thomas, B. (2010). Attitudes Toward Entrepreneurship Education: A Comparative Analysis. *Education and Training*, *52*(8/9), 568–586.

Joshi, R. (2015). Entrepreneurship Education: Core, Context, and Challenges. *Journal of Commerce and Accounting Research*, *3*(2).
380

Kaltsogianni, M., Tsitsis, C., Priniotakis, G., & Tseles, D. (2014). Cooperation Between University and Industry: Good Practices in European countries: The Case of Greece, Cooperation Between University and Industry: Good practices in European Countries: The Case of Greece. *International Scientific Conference ERA-9*, 1–94.

Kamenou, N., & Syed, J. (2012). Diversity Management. In *Human Resource Management in a Global Context: A Critical Approach* (Syed, J. and Kramar, J., pp. 75–97). Palgrave Macmillan.

Kann, J., & Etzkowitz, H. (2013). The Kauffman Foundation and the University of Missouri-Kansas City: Unequal partners in Entrepreneurship and Regional Development. Brussels, Belgium: European Commission University-Business Cooperation Project.

Karacaoglu, K., Bayrakdaroglu, A., & San, F. B. (2013). The Impact of Corporate Entrepreneurship on Firms' Financial Performance: Evidence from Istanbul Stock Exchange Firms. *International Business Research*, *6*(1), 163–175.

Karim, S., & Mitchell, W. (2000). Path-dependent and path-breaking change: Reconfiguring business resources following acquisitions in the U.S. medical sector, 1978-1995. *Strategic Management Journal*, *21*(10), 1061–1081.

Keast, D. A. (1995). Entrepreneurship in Universities: Definitions, Practices, and Implications. *Higher Education Quarterly*, *49*(3), 248–266.

Kelley, D. (2011). Sustainable Corporate Entrepreneurship: Evolving and Connecting with the Organisation. *Business Horizons*, *54*, 73–83.

Kemp, N., & Lawton, W. (2013). A Strategic Analysis of the Scottish Higher Education Sector's Distinctive Assets: A study commissioned by British Council Scotland (pp. 3–74). Scotland, UK: British Council, Scotland.

Kempton, L., Goddard, J., Edwards, J., Hegyi, F. B., & Elena-Pérez, S. (2013). *Universities and Smart Specialisation* (JRC Scientific and Policy Reports No. 03) (pp. 1–14). Spain: European Commission.

Kenney, M., & Mujtaba, B. G. (2007). Understanding Corporate Entrepreneurship and Development: A Practitioner View of Organisational Intrapreneurship. *The Journal of Applied Management and Entrepreneurship*, *12*(3), 73–88.
381

Kenyon, A. (2011). Case study: Enterprising and employability skills through innovative curricula. In *Creative enterprise and curriculum: Inspiring Enterprise: Transforming Enterprise Education at Leeds Metropolitan University* (Rebekka Kill and Karen O'Rourke, pp. 18–21). Leeds, UK: Leeds Met Press.

Kim, B. (2006). Social Constructivism: From Emerging Perspectives on Learning, Teaching, and Technology. Retrieved 9 December 2015, from http://cmapsconverted.ihmc.us/rid=1N5QXBJZF-20SG67F-32D4/Kim%20Social%20constructivism.pdf

Kim, M. (2011). Ashoka U Curriculum and Teaching Resource Guide (pp. 1–11). ASHOKA-U.

Kirby, D. A. (2006). Creating Entrepreneurial Universities in the UK: Applying Entrepreneurship Theory to Practice. *The Journal of Technology Transfer*, *31*(5), 599–603.

Kirby, D. A., Guerrero, M., & Urbano, D. (2011). Making Universities More Entrepreneurial: Development of a Model. *Canadian Journal of Administrative Sciences*, *28*(3), 302–316.

Kirkman. (2008). Dedicated Biotechnology Firms in the Ivory Tower: An Examination of the Relationship between Entrepreneurial Orientation and University Collaborations (Ph.D.). Rutgers The State University of New Jersey - Newark, New Jersey ISBN 9780549791423.

Kirzner, I. (1973). *Competition and Entrepreneurship*. Chicago: University of Chicago Press.

Kirzner, I. M. (1979). *Perception, Opportunity, and Profit*. University of Chicago Press.

Kitagawa, F. (2005). Entrepreneurial Universities and the Development of Regional Societies: A Spatial View of the Europe of Knowledge. *Higher Education Management and Policy*, *17*(3), 59–86.

Klofsten, M., & Jones-Evans, D. (2000). Comparing Academic Entrepreneurship in Europe – The Case of Sweden and Ireland. *Small Business Economics*, *14*(4), 299–309.

Knight, J., & De Wit, H. (2007). Strategies for Internationalisation of Higher Education: Historical and Conceptual Perspectives. In *Strategies for internationalisation of higher education: A Comparative Study of Australia, Canada, Europe and the United*

382

States of America, Amsterdam (OECD, pp. 5–32). European Association for International Education (EAIE), the Program on Institutional Management in Higher Education (IMHE) of OECD and the Association of International Education Administrators (AIEA).

Knox, S., & Burkard, A. (2009). Qualitative Research Interviews - viewcontent.cgi. *Psychotherapy Research*, *19*(4–5), 566–575.

Koka, B. R., & Prescott, J. E. (2008). Designing alliance networks: the influence of network position, environmental change, and strategy on firm performance. *Strategic Management Journal*, *29*(6), 639–661. https://doi.org/10.1002/smj.679

Kozinets, R. V. (2006). Click to Connect: Netnography and Tribal Advertising. *Journal of Advertising Research*, 279–288.

Kuipers, S. B., Higgs, M., Kickert, W., Tummers, L., Grandia, J., & Voet Van Der, J. (2013). The Management of Change in public Organisations: A Literature Review. *Journal of Public Administration*, 2–19.

Kukla, A. (2000). Social Constructivism and the Philosophy of Science. New York: Routledge.

Kuratko, D. F. (2005). The Emergence of Entrepreneurship Education: Development, Trends, and Challenges. *Entrepreneurship Theory and Practice*, *29*(5), 577–598.

Kuratko, D. F. (2009). *Introduction to Entrepreneurship*. Canada: South-Western Cengage Learning.

Kuratko, D. F., & Goldsby, M. G. (2004). Corporate Entrepreneurs or Rogue Middle Managers? A framework for Ethical Corporate Entrepreneurship. *Journal of Business Ethics*, *55*, 13–30.

Kuratko, D. F., & Audretsch, D. B. (2013). Clarifying the domains of corporate entrepreneurship. *International Entrepreneurship and Management Journal*, *9*(3), 323–335.

Kuratko, D. F., Hornsby, J. S., & Covin, J. G. (2014). Diagnosing a Firm's Internal Environment for Corporate Entrepreneurship. *Business Horizons*, *57*, 37–47.

Kuratko, D. F., & Morris, M. H. (2018). Corporate Entrepreneurship: A Critical Challenge for Educators and Researchers. *Entrepreneurship Education and Pedagogy*, *1*(1), 42–60.

Kuratko, D. F., Morris, M. H., & Covin, J. G. (2011). *Corporate Innovation and Entrepreneurship: Entrepreneurial Development within Organisations* (3rd ed.). South-Western Cengage Learning.

Kvale, S. (1996). Interviews: An Introduction to Qualitative Research Interviewing. Thousand Oaks: Sage.

Kwiek, M. (2008). Accessibility and Equity, Market Forces and Entrepreneurship: Developments in Higher Education in Central and Eastern Europe. *Higher Education Management and Policy*, *20*(1), 1–22.

Lakitan, B. (2013). Technopreneurship as a Strategic Mechanism for Commercialising University created Technology. Presented at the Technopreneurship Seminar, Lampung University.

Lambert, R. (2003). *Lambert Review of Business-University Collaboration: Final Report* (SSRN Scholarly Paper No. ID 1509981). Rochester, NY: Social Science Research Network.

Lambert, R. (2013). Collaboration Research between Business and Universities: The Lambert Toolkit 8 Years On (pp. 3–98). UK: Intellectual Property Office.

Lamidi, K. K., Mswaka, W., & Smith, K. (2015). Universities and Regional Contribution to Enhancing Entrepreneurial Ecosystem: Insights from the UK. In *University-Industry Interaction Conference Proceedings* (pp. 364–386). Berlin, Germany: UIIN Conference.

Lamidi, K., & Williams, D. (2014). Leading Transformational Change in HEIs: Discussion of Literature and Conceptual Framework. In *Academic Proceedings 2014 University-Industry Interaction Conference: Challenges and Solutions for Fostering Entrepreneurial Universities and Collaborative Innovation* (pp. 46–99). Barcelona, Spain: University-Industry Innovation Network.

Langridge, J. W. (2006). *Entrepreneurship in Higher Education: A Case Study of the University of Wollongong* (Ph.D.). The University of Southampton, University of Southampton.

Larijani, N., Nejad, E. S., & Yazdani, A. (2015). A Study of Influence of Entrepreneurship Teaching Workshops on the Increase of Creativity and Innovation of the Payam-E-Noor Universities of the Mazandaran Province Case Study: PayamE-Noor Universities of the Mazandaran Province's West. *Inter National Journal of Materials Lifetime*, *2*(1), 38–43.

Lather, P. (1992). Critical Frames in Educational Research: Feminist and Post-structural Perspectives. *Theory into Practice*, *31*(2), 87–99.

Lavie, D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of the Resource-Based View. *Academy of Management Review*, *31*(3), 638–658.

Lazányi, K. (2014). Entrepreneurial Skills and Competencies of Students at Óbuda University. *On-Line Journal Modelling the New Europe*, (10), 17.

Leitch, C. (2007). An Action Research Approach to Entrepreneurship. In *Handbook of Qualitative Research Methods in Entrepreneurship* (Helle Neergaard & John Parm Ulhøi, pp. 144–168). UK: Edward Elgar Publishing.

Lerchenmueller, M. J. (2015). Corporate entrepreneurship in a strategic context: What determines new venturing and strategic renewal in service versus manufacturing industry? *Frontiers of Entrepreneurship Research*, *35*(13), 314–319.

Levinthal, D., & Myatt, J. (1994). Co-evolution of capabilities and Industry: The evolution of mutual fund processing. *Strategic Management Journal*, *15*, 45–62.

LFHE. (2013). In Practice, Engage, Summer 2013: The Case Studies: What Happened Here? Retrieved 2 September 2015, from http://www.lfhe.ac.uk/en/research-resources/publications/past-editions/engage-summer-2013/in-practice/the-case-studies.cfm

Lichtman, M. (2014). Qualitative research for the social sciences. Thousand Oaks, CA: Sage.

Lincoln, Y. S., & Guba, E. G. (1990). Judging the quality of case study reports. *Qualitative Studies in Education*, *3*, 53–59.
385

Linda, D., & Marie, V. (2016). Completing your qualitative dissertation: A roadmap from beginning to end (3rd ed.). London, UK: Sage.

Lockyer, J., & George, S. (2012). What women want: Barriers to Female Entrepreneurship in the West Midlands. *International Journal of Gender and Entrepreneurship*, *4*(2), 179–195.

Logie, S. J. (2015). *Exploring Entrepreneurship and Organisational Culture in a Higher Education Context* (Doctor of Business Administration). Edinburgh Napier University, UK.

London Communiqué. (2007). *Towards the European Higher Education Area: Responding to challenges in a Globalised World*. London: Communiqué of the Conference of European Ministers Responsible for Higher Education.

Lorbiecki, A., & Jack, G. (2000). Critical Turns in the Evolution of Diversity Management. *British Journal of Management*, *11*, S17–S31.

Lyons, R. M., Bhaird, C. M. and, & Lynn, T. G. (2015). Individual Level Assessment in Entrepreneurship Education: An Investigation of Theories and Techniques. *Journal of Entrepreneurship Education*, *18*(1), 136–156.

Mainardes, E. M., Alves, H., & Raposo, M. (2011). The Process of Change in University Management: From the 'Ivory Tower' to Entrepreneurialism. *Transylvanian Review of Administrative Science*, *33*(E), 124–129.

Makadok, R. (2001). Toward a synthesis of the resource-based and dynamic-capability views of rent creation. *Strategic Management Journal*, *22*, 387–401.

Marginson, S. (1999). The Enterprise University comes to Australia. On *29 November- 2 December, AARE*. Melbourne, Australia.

Marginson, S. (2010). The Rise of the Global University: 5 New Tensions. *The Chronicle of Higher Education*.

Marginson, S., & Considine, M. (2000). *The Enterprise University: Power, Governance, and Reinvention in Australia*. Cambridge: Cambridge University Press.

Markuerkiaga, L., Igartua, J. I., & Errasti, N. (2015). Differences Between Entrepreneurial Universities: Results A Base for A Taxonomy. In *UIIN 2015*. Berlin, Germany: University-Industry Innovation Network.

Marshall, B., Cardon, P., Poddar, A., & Fontennot, R. (2013). Does Sample Size Matter in Qualitative Research? A Review of Qualitative Interviews in IS Research. *Journal of Computer Information Systems*, 11–22.

Martin, B. R. (2011). The Research Excellence Framework and the 'Impact Agenda': Are we creating a Frankenstein monster? *Research Evaluation*, *20*(3), 247–254.

Martin, B. R. (2012). Are Universities and University Research under threat? Towards an Evolutionary Model of University Speciation. *Cambridge Journal of Economics*, bes006.

Martinez, D., Warburton, J., Orzechowska, J., & Adams, L. (2015). Why Be Enterprising Brochure 2015. The University of Salford.

Martinez, R., & Kitaev, I. (2009). Entrepreneurialism and The Internationisation of Higher Education in a Knowledge Society. In *Entrepreneurialism in Universities and the Knowledge Economy* (Michael Shattock, pp. 121–141). UK: The Society for Research into Higher Education and Open University Press.

Martins, E. C., & Terblanche, F. (2003). Building an Organisational Culture that stimulates Creativity and Innovation. *European Journal of Innovation Management*, *6*(1), 64–74.

Mason, C. (2014). What more can Universities do to Create Entrepreneurial Campuses? Real Business.

Mason, H., & Rohner, T. (2002). *The Venture Imperative.* Boston: Harvard Business School Press.

Mason, M. (2010). Sample Size and Saturation in Ph.D. Studies Using Qualitative Interviews. *Forum: Qualitative Social Research*, *11*(3).

Matlay, H. (2005). Entrepreneurship education in UK Business Schools: Conceptual, Contextual and Policy Considerations. *Journal of Small Business and Enterprise Development*, *12*(4), 627–643.
387

McClelland, D. C. (1961). *The Achieving Society* (SSRN Scholarly Paper No. ID 1496181). Rochester, NY: Social Science Research Network.

McMahon, M. (1997). Social Constructivism and the World Wide Web: A Paradigm for Learning. Version details - Trove. Presented at the ASCILITE Conference, Perth, Australia.

McNamara, C. (1999). *General Guidelines for Conducting Interviews*. Minnesota, Ph.D., Minnesota.

McNamara, C. (2009). General Guidelines for Conducting Research Interviews. Retrieved 13 July 2015, from http://managementhelp.org/businessresearch/interviews.htm

Medlan, A. (2012). *Regional Trends: Portrait of the West Midlands* (pp. 1–36). Office for National Statistics.

Mellor, R., Creer, S., & Bradshaw, T. (2016). 'Mock' Teaching Excellence Framework. Retrieved 7 July 2016, from http://russellgroup.ac.uk/news/mock-tef/

Mercer, J. (2007). The Challenges of Insider Research in Educational Institutions: Wielding a double-edged sword and resolving delicate dilemmas. Centre for Educational Leadership and Management, University of Leicester.

Meyer, C. B. (2001). Field Methods: A Case in Case Study Methodology. *Sage*, *13*, 329.

Meyer, D., G. (2015). Academic Entrepreneurship: Paradigm Sought to Paradigm Found. *Journal of Small Business Strategy*, *23*(1), 1–14.

Mian, S. A. (2011). University's involvement in Technology Business Incubation: What Theory and Practice tell us? *International Journal of Entrepreneurship and Innovation Management*, *13*(2), 113–121.

Michael, S., Storey, D., & Thomas, H. (2002). Discovery and Co-ordination in Strategic Management and Entrepreneurship. In *Strategic entrepreneurship: Creating a new mindset* (M. A. Hitt, R. D. Ireland, S. M. Camp, D. L. Sexton, pp. 45–65). Oxford, England: Blackwell.

Middlehurst, R. (1999). New Realities for Leadership and Governance in Higher Education? *Tertiary Education and Management*, *5*(4), 307–328.

Middlehurst, R. (2004). Changing Internal Governance: A discussion of Leadership Roles and Management Structures in UK Universities. *Higher Education Quarterly*, *58*(4), 258–279.

Middlehurst, R. (2013). Changing Internal Governance: Are Leadership Roles and Management Structures in United Kingdom Universities Fit for the Future? *Higher Education Quarterly*, *67*(3), 275–294.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2nd ed.). California: Thousand Oaks, Sage.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook* (3rd ed.). USA: SAGE Publications Ltd.

Militaru, G. (2014). The Critical Factors of Entrepreneurial University in Engineering Education: A Conceptual and Empirical Analysis. *Balkan Region Conference on Engineering and Business Education*, *1*(1), 35–40.

Miller, M., & Katz, M. (2004). *Effective Shared Governance: Academic Governance as a Win-Win Proposition* (pp. 83–90). Washington: The NEA 2004 ALMANAC OF Higher Education.

Mitra, J. (2012). Entrepreneurship, Innovation and Regional Development. Routledge Ltd.

Mitra, J., & Edmondson, J. (2015). *Entrepreneurship and Knowledge Exchange*. Routledge.

Mok, K. H., & Welch, A. R. (2003). Globalisation and Educational Restructuring in Asia and the Pacific Region. Palgrave Macmillan.

Monk, A., & Howard, S. (1998). Methods & Tools: The Rich Picture: A Tool for Reasoning About Work Context. *Interactions*, *5*(2), 21–30.

Morandi, V. (2013). The Management of Industry-University Joint Research Projects: How do Partners Co-ordinate and Control R&D Activities? *Journal of Technology Transfer*, *38*(2), 69–92.

Morris, A. M. (2014a). An Education System fits for an Entrepreneur: Fifth Report by the All-Party Parliamentary Group for Micro Businesses   (pp.   1–135).   UK: APPG for Micro Businesses.

389

Morris, A. M. (2014b). *New Report Calls for Better Integration of Entrepreneur Skills at all Levels of Education* (pp. 1–143). UK: All Party Parliamentary Group (APPG) for Micro Business.

Morris, M. H. (2014). Annals of Entrepreneurship Education and Pedagogy – 2014 - Google Books. Edward Elgar Publishing.

Morris, M. H., Kuratko, D. F., & Covin, J. G. (2011). *Corporate entrepreneurship & innovation* (3rd ed.). Mason, OH: South-Western/Thomson Publishers.

Morse, J. M. (1994). Designing Funded Qualitative Research. In *Handbook of qualitative research* (2nd Norman K. Denzin & Yvonna S. Lincoln, pp. 220–235). Thousand Oaks, CA: Sage.

Mowery, D. C., & Shane, S. (2002). University Entrepreneurship and Technology Transfer. *Management Science*, *48*(1).

Mudde, H. L. M., Gerba, D. T., & Chekol, A. D. (2015). *Entrepreneurship Education in Ethiopian universities: Institutional Assessment: Synthesis Report* (pp. 4–103). Ethiopia: Maastricht School of Management.

Mueller, P. (2005). Exploring the Knowledge Filter: How Entrepreneurship and University-Industry Relationships Drive Economic Growth. In *Use and Water Management in a Sustainable Network Society*. Amsterdam, The Netherlands: 45 the Congress of European Regional Science Association.

Murmann, B. (2015). Boris Murmann - Murmann Mixed-Signal Group. Retrieved 28 July 2015, from https://web.stanford.edu/group/murmann_group/cgi-bin/mediawiki/index.php/Boris_Murmann

Murugesan, R., & jayavelu, R. (2015). Testing the Impact of Entrepreneurship Education on Business, Engineering, and Arts and Science Students using the Theory of Planned Behaviour: A Comparative Study. *Journal of Entrepreneurship in Emerging Economies*, *7*(3).

Mustar, P., Wright, M., & Clarysse, B. (2008). University spin-off firms: Lessons from ten years of experience in Europe. *Science and Public Policy*, *35*(2), 67–80.

390

Mustar, P., Renault, M., Colombo, M. G., Piva, E., Fontes, M., Lockette, A., & Moray, N. (2006). Conceptualising the Heterogeneity of Research-based Spin-offs: A Multi-dimensional Taxonomy. *Research Policy*, 37–43.

Naldi, I., Achtenhagen, I., & Davidsson, P. (2015). International Corporate Entrepreneurship among SMEs: A Test of Stevenson's Notion of Entrepreneurial Management. *Journal of Small Business Management*, *53*(3), 780–800.

Narula, R. (2004). R&D Collaboration by SMEs: New Opportunities and Limitations in the face of Globalisation. *Technovation*, *24*(2), 153–161.

Nason, R. S., McKelvie, A., & Lumpkin, G. T. (2015). The Role of Organizational Size in the Heterogeneous Nature of Corporate Entrepreneurship. *Small Business Economics*, *45*(2), 279–304.

National Report. (Website). National Report - Chapter 23 Higher education in Scotland, Wales and Northern Ireland.

NBAs. (2015a). National Business Awards 2015: The Duke of York Award for University Entrepreneurship.

NBAs. (2015b). National Business Awards 2015: Why Enter the National Business Awards.

NCEE. (2015). THE Entrepreneurial University of the Year Award 2015 Shortlisted [NCEE].

Nelles, J., & Vorley, T. (2010). Entrepreneurial by Design: Theorising the Entrepreneurial Transformation of Contemporary Universities. *Industry and Higher Education*, *24*(3), 157–164.

Nelson, R. R., & Winter, S. G. (1982). *An Evolutionary theory of Economic Behaviour and Capabilities*. Cambridge: Harvard University Press.

Nielsen, K. (2015). Human Capital and New Venture Performance: The Industry Choice and Performance of Academic Entrepreneurs. *Journal of Technology Transfer*, *40*(3), 453–474.

Nytch, J. (2012). Entrepreneurship Pedagogy: A World of Approaches. Retrieved from http://jeffreynytch.com/entrepreneurship-pedagogy-a-world-of-approaches-2/

OBSSR. (Website). Software and Qualitative Analysis: Logic of Qualitative Research.

O'Connor, G. C., & Rice, M. P. (2013). A Comprehensive Model of Uncertainty Associated with Radical Innovation. *Journal of Product Innovation Management*, *30*(S1), 2–18.

OECD. (2014). How Innovative is the Education Sector? OECD Publishing.

OECD. (2008a). *OECD Reviews of Regional Innovation, North of England, United Kingdom 2008*. Paris: Organisation for Economic Co-operation and Development.

OECD. (2008b). The National Approach to Innovation in English Regions. In OECD, *OECD Reviews of Regional Innovation, North of England, United Kingdom 2008* (OECD, pp. 119–159). Paris: OECD Publishing.

OECD. (2015). A Guiding Framework for Entrepreneurial Universities. OECD.

OECD. (2018). A guiding framework for entrepreneurial universities - OECD. Retrieved July 27, 2018, from https://www.oecd.org/site/cfecpr/guiding-framework.htm

Oftedal, E., & Foss, L. (2015). Chapter 10: UiT The Arctic University of Norway: Challenges at the Arctic crossroads. In *the Entrepreneurial University: Context and Institutional Change* (Lene, Foss and David, V. Gibson, pp. 190–220). UK: Routledge.

Okpara, F. O. (2008). Building an Entrepreneurial University for the Challenges of the 21st Century: The Ethiopian Perspective. In *ICSB World Conference Proceedings* (p. 1). Halifax, Nova Scotia, Canada: International Council for Small business (ICSB).

Oncu, M. (2010). How Culture and Education influence Students' Entrepreneurial Intentions: A Qualitative Study between Students from Babes-Bolyai University, Romania and Umeå University, Sweden, enrolled in Business Programmes (Master). Umeå Universitet, Handelshögskolan vid Umeå Universitet, Umeå School of Business, Sweden.

ONS. (2016). Population Estimates - Office for National Statistics.

Oppong, H. S. (2013). The Problem of Sampling in Qualitative Research. *Asian Journal of Management Sciences and Education*, *2*(2), 202–210.

O'Shea, E., & McDonald, L. (2015). Civic Roles, Random callings: Discerning the University Mission. *Social Alternatives*, *34*(2), 3.

O'Shea, R., Allen, T. J., Chevalier, A., & Roche, F. (2005). Entrepreneurial Orientation, Technology Transfer, and Spin-off Performance of US Universities. *Research Policy*, *34*, 994–1009.

O'Shea, R., Allen, T. J., Morse, K. P., O'Gorman, C., & Roche, F. (2007). Delineating the Anatomy of an Entrepreneurial University: The Massachusetts Institute of Technology Experience. *R&D Management*, *37*(1), 1–1.

Oslo Agenda. (2006). *The Oslo Agenda for Entrepreneurship Education in Europe* (pp. 1–4). Oslo: European Commission.

Otache, I., & Mahmood, R. (2015). Corporate Entrepreneurship and Business Performance: The Role of External Environment and Organisational Culture: A Proposed Framework. *Mediterranean Journal of Social Sciences*, *6*(4), 524–531.

Owen, G. (2012). A Four-Dimensional Study of Background Check Policy in Higher Education. Georgia Institute of Technology Library of Scholarly Materials and Research.

Owen, G., T. (2013). Qualitative Methods in Higher Education Policy Analysis: Using Interviews and Document Analysis. Georgia Inst. of Technology, Atlanta, GA. The USA.

Packard, M. D. (2017). Where did Interpretivism go in the Theory of Entrepreneurship? Journal of Business Venturing, 32(5), 536–549.

Paterson, L. (2001). Higher Education and European Regionalism. *Pedagogy, Culture, and Society*, *9*(2), 133–160.

Patton, M. Q. (1990). *Qualitative Re-search & Evaluation Methods* (2nd ed.). California: Sage Publications.

Patton, M. Q. (2002). *Qualitative Research & Evaluation Methods*. Thousand Oaks, CA: Sage.

Pennycook, L. (2014). The Welsh Dragon: The Success of Enterprise Education in Wales. Wales, UK: Carnegie UK Trust.

Perry, C. (1998). A Structured Approach to Presenting Ph.D. Theses: Notes for Candidates and their Supervisors. *Australian Marketing Journal*, *6*(1), 63–85.
393

Pettigrew, A. M. (2013). Commentary: The Conduct of Qualitative Research in Organisational Settings. *Corporate Governance*, *21*(2), 123–126.

Philbin, S. P. (2015). Exploring the Challenges and Opportunities for Higher Education Institutions: Work domain Analysis and Development of Strategic Options. In *2015 Portland, International Conference on Management of Engineering and Technology (PICMET)* (pp. 1137–1150). Portland or USA: IEEE Xplore Digital Library.

Phillip, H. P., & Der Foo, M. (2004). *Techno-Entrepreneurship* (Phillip H. Phan, Vol. 19). New York, NY: Elsevier Science.

Pinchot, G. (1985). Intrapreneuring: Why you don't have to leave the Corporation to become an Entrepreneur. The University of Illinois at Urbana - Champaign.

Pink, S. (2004). Visual Methods. In *Qualitative Research Practice 2006* (Seale, C., Gobo, D., Dubrium, J. and Silverman, D.). London: Sage.

Pittaway, L., & Cope, J. (2007). Entrepreneurship Education a Systematic Review of the Evidence. *International Small Business Journal*, *25*(5), 479–510.

Ponds, R., Oort, F. van, & Frenken, K. (2010). Innovation, Spillovers, and University–Industry Collaboration: An Extended Knowledge Production Function Approach. Journal *of Economic Geography*, *10*(2), 231–255.

Porter, M., E. (1980). *Generic Competitive Strategies*. New York: Free Press.

Powers, J., & McDougall, P. (2005). University Start-up Formation and Technology Licensing with Firms that go Public: A Resource-based View of Academic Entrepreneurship. *Journal of Business Venturing*, *20*(3), 291–311.

Prahalad, C. K., & Hamel, G. (1990). The Core Competence of the Corporation 1990. *Harvard Business Review*, 79–90.

Prawat, R. S., & Floden, R. E. (1994). Philosophical Perspectives on Constructivist Views of Learning. *Educational Psychologist*, *29*(1), 37–48.

Price, L., & Rae, D. (2012). Developing the NACUE Student Enterprise Framework Liz Price and David Rae, Lincoln Business School (pp. 1–9). UK: University of Lincoln.

394

Priem, R. L., & Butler, J. E. (2001). Is the Resource-Based 'View' a Useful Perspective for Strategic Management Research? *The Academy of Management Review*, *26*(1), 22–40.

Prior, L. (2003). Using Documents in Social Research. London: SAGE.

Purcell, K., Elias, P., & Atfield, G. (2012). Future Track Summary 2012: A New Classification of Higher Education Institutions. *Manchester: HECSU*. Retrieved from www.hecsu.ac.uk.

QAA. (2012). Enterprise and Entrepreneurship Education: Guidance for UK Higher Education providers.

QUB. (2011). Queen's University Belfast Corporate Plan 2011-16.

Rae, D. (2010). Universities and Enterprise Education: Responding to the challenges of the new era. *Journal of Small Business and Enterprise Development*, *17*, 591–606.

Rae, D., Martin, L., Antcliff, V., & Hannon, P. (2010). *The 2010 Survey of Enterprise and Entrepreneurship in Higher Education*. London: 33rd ISBE Conference, London, November 2010.

Ramadani, V., Hisrich, R. D., & Gerguri-Rashiti, S. (2015). Female Entrepreneurs in transition economies: Insights from Albania, Macedonia, and Kosovo. *World Review of Entrepreneurship, Management, and Sustainable Development*, *114*(4), 391–413.

Ranga, M., & Etzkowitz, H. (2013). Triple Helix systems: An Analytical Framework for Innovation Policy and Practice in the Knowledge Society. *Industry and Higher Education*, *27*(4), 237–262.

Ranga, M., Hoareau, C., Durazzi, N., Etzkowitz, H., Marcucci, P., & Usher, A. (2013). *Study on University-Business Cooperation in the U.S* (No. EAC-2011-0469) (pp. 1–130). London: London School of Economics Enterprise Limited.

Rashidi, A. A. (2015). Investigation of Effective Environmental Factors on Entrepreneurship in Universities. *241 International Research Journal of Management Science*, *3*(6), 241–244.

Rasmussen, E., & Wright, M. (2015). How can Universities Facilitate Academic Spin-offs? An Entrepreneurial Competency Perspective. *The Journal of Technology Transfer*, *40*(5), 782–799.

Rasmussen, S. E., Bulanova, O., Jensen, A., & Clausen, T. (2012). *The Impact of Science-Based Entrepreneurial Firms: A Literature Review and Policy Synthesis* (No. 154). Nordlands Forskning, Norway: Nordland Research Institute, NF-rapport nr.3/2012.

Ratten, V. (2014). Encouraging Collaborative Entrepreneurship in Developing Countries: The Current Challenges and a Research Agenda. *Journal of Entrepreneurship in Emerging Economies*, *6*(3), 298–308.

Ray, G., Barney, J., B., & Muhanna, W., A. (2004). Capabilities, Business Processes, and Competitive Advantage: Choosing the Dependent Variable in Empirical Tests of the Resource-Based View. *Strategic Management Journal*, *25*, 23–37.

RethE. (2010). *Entrepreneurial Ecosystem: UK Contribution* (pp. 1–68). Wales, UK: Rethinking Entrepreneurship.

Ricardo, D. (1817). Principles of Political Economy and Taxation. London: J. Murray.

Rindova, V., P., & Fombrun, C. J. (1999). Constructing Competitive Advantage: The Role of Firm–constituent Interactions - Rindova - 1999 - Strategic Management Journal - Wiley Online Library. *Strategic Management Journal*, *20*(8), 691–710.

Riviezzo, A., & Napolitano, M. R. (2010). Italian Universities and the Third Mission: A Longitudinal Analysis of Organisational and Educational Evolution towards the 'Entrepreneurial University'. *Industry and Higher Education*, *24*(3), 227–236.

Rodrigues, R. G., Dinis, A., do Paço, A., Ferreira, J., & Raposo, M. (2012). The Effect of an Entrepreneurial Training Programme on Entrepreneurial Traits and Intention of Secondary Students. In *Entrepreneurship: Born, Made and Educated* (Thierry Burger-Helmchen, pp. 77–93). Croatia: Science, Technology, and Medicine Open Access Publisher.

Röhl, K.-H. (2016). Entrepreneurial Culture and Start-ups: Could a Cultural Shift in favour of Entrepreneurship lead to more Innovative Start-ups (pp. 3–32). Germany: Institut der deutschen Wirtschaft Köln: Cologne Institute for Economic Research.
396

Romero-Martínez, A. M., Fernández-Rodríguez, Z., & VázquezInchausti, E. (2010). Exploring Corporate Entrepreneurship in Privatized Firms. *Journal of World Business*, *45*(1), 2–8.

Röpke, J. (2000). The Entrepreneurial University Innovation, Academic Knowledge Creation and Regional Development in a Globalised Economy. *Philipps-Universität Marburg, German*, 1–19.

Ross, J. (2014). Recruiting User Research Participants by Email: UXmatters. Retrieved 13 December 2015, from http://www.uxmatters.com/mt/archives/2014/11/recruiting-user-research-participants-by-email.php

Rothaermel, F. T., Agung, S. D., & Jiang, L. (2007). University Entrepreneurship: Taxonomy of the Literature. *Industrial and Corporate Change*, *16*(4), 691–791.

Ruvio, A., Rosenblatt, Z., & Hertz-Lazarowitz, R. (2010). Entrepreneurial Leadership Vision in Non-profit vs. For-profit Organisations. *The Leadership Quarterly*, *21*(1), 144–158.

Sadri, G., & Lees, B. (2001). Developing Corporate Culture as a Competitive Advantage. *Journal of Management Development*, *20*(20), 865–859.

Sakhdari, K. (2016). Corporate Entrepreneurship: A Review and Future Research Agenda. *Technology Innovation Management Review*, *6*(8), 5–18.

Salamzadeh, A., Farsi, J. Y., Motavaseli, M., Markovic, M. R., & Kesim, H. K. (2015). Institutional Factors affecting the Transformation of Entrepreneurial Universities. *International Journal of Business and Globalisation*, *14*(3), 271.

Salamzadeh, A., Salamzadeh, Y., & Reza Daraei, M. (2011). Toward a Systematic Framework for an Entrepreneurial University: A Study in Iranian Context with an IPOO Model. *Global Business and Management Research: An International Journal*, *3*(1), 30–37.

Sam, C., & van der Sijde, P. (2014). Understanding the Concept of the Entrepreneurial University from the Perspective of Higher Education Models. *Higher Education*, *68*(6), 891–908.

Sanders, M. (2007). Scientific Paradigms, Entrepreneurial Opportunities, and Cycles in Economic Growth. *Small Business Economics*, *28*, 339–354.
397

Sathe, V. (1989). Fostering Entrepreneurship in the Large Diversified Firm. *Organisational Dynamics*, *8*(1), 20–32.

Saunders, L. P., & Thornhill, A. (2009). *Research Methods for Business Students* (5th ed.). England: Pearson Education.

Scheuerle, T., & Münscher, R. (2013). *How Social Value is created on Markets: A Taxonomy of Market-Based Strategies by Social Entrepreneurs*. Retrieved from http://www.socialimpactstrategy.org/wp-content/uploads/2015/02/Scheuerle.pdf

Schmitz, A., Urbano, D., Dandolini, G. A., Souza, J. A. de, & Guerrero, M. (2016). Innovation and Entrepreneurship in the Academic Setting: A Systematic Literature Review. *International Entrepreneurship and Management Journal*, 1–27.

Schofield, A. (2009). *What is the Effective and High Performing Body in UK Higher Education?* London: Leadership Foundation for Higher Education.

Schulte, P. (2004). The Entrepreneurial University: A Strategy for Institutional Development. *Higher Education in Europe*, *29*(2), 187–191.

Schumpeter, J. A. (1934). *The Theory of Economic Development*. Cambridge Mass: Harvard University Press.

Schumpeter, J. A. (1942). *Capitalism, Socialism, and Democracy*. New York, USA: Harper.

Schumpeter, J. A. (1949). *Economic Theory and Entrepreneurial History: Change and the Entrepreneurs*. Cambridge, Mass, USA: Harvard University Press.

SCONUL. (2015). SCONUL Access.

Sebigunda, E. N. (2013). How do Investment Climate and Business Environment Impact Firms' efficiency in a Post-conflict Setting? Evidence from the Democratic Republic of Congo*. International Journal of Business and Management*, *8*(10), 169–185.

Seerden, M. Ichael T. (2015). *Business Models for the Entrepreneurial University of the future* (Master of Science). The Eindhoven University of Technology.

Seidman, I. E. (1991). Interviewing as Qualitative Research: A Guide for Researchers in Education and the Social Sciences. New York: Teachers College Press.

Sekliuckiene, J., & Kisielius, E. (2015). Development of Social Entrepreneurship Initiatives: A Theoretical Framework. *Procedia- Social and Behavioural Sciences*, *213*, 1015–1019.

Sellgren, K. (2015). University Rankings: UK 'a stand-out performer'. Retrieved 16 October 2015, from http://www.bbc.co.uk/news/education-34390466

Şener, S., Sarıdoğan, E., Staub, S., Sarıkaya, M., & Coşkun, E. (2015). World Conference on Technology, Innovation, and Entrepreneurship: A New Approach to Preschool Education: Social Entrepreneurship Education. *Procedia - Social and Behavioural Sciences*, *195*, 888–894.

SFC. (2011). Scottish Ministerial Letter of Guidance: 21 September 2011. The Scottish Government.

SFC. (2012). Scottish Ministerial Letter of Guidance: 25 January 2012. The Scottish Government.

SFC. (2013). Letter of Guidance 2014-15: 21 October 2013. The Scottish Government.

SFC. (2014). SFC letter of guidance 2015-16: 31st July 2014. The Scottish Government.

SFC. (2015a). Letter of Guidance to SFC for the academic year 2016-17

SFC. (2015b). Outcome Agreements for Universities: Indicative Funding Decisions for AY 2015-16.

SGI. (1980). SGI - Company Info: Company Overview. Retrieved 28 July 2015, from http://www.sgi.com/company_info/overview.html

Shamsuddin, S., Othman, J., Shahadan, A. M., & Zakaria. (2012). The Dimensions of Corporate Entrepreneurship and the Performance of Established Organisation. *ACRN Journal of Entrepreneurship Perspectives*, *1*(2), 111–131.

Shane, S. (2003). Technology Entrepreneurship. *Research Policy*, *32*(2).

Shane, S. (2004). Encouraging University Entrepreneurship? The effect of the Bayh-Dole Act on University Patenting in the United States. *Journal of Business Venturing*, *19*(1), 127–151.

Sekliuckiene, J., & Kisielius, E. (2015). Development of Social Entrepreneurship Initiatives: A Theoretical Framework. *Procedia- Social and Behavioural Sciences*, *213*, 1015–1019.

Sellgren, K. (2015). University Rankings: UK 'a stand-out performer'. Retrieved 16 October 2015, from http://www.bbc.co.uk/news/education-34390466

Şener, S., Sarıdoğan, E., Staub, S., Sarıkaya, M., & Coşkun, E. (2015). World Conference on Technology, Innovation, and Entrepreneurship: A New Approach to Preschool Education: Social Entrepreneurship Education. *Procedia - Social and Behavioural Sciences*, *195*, 888–894.

SFC. (2011). Scottish Ministerial Letter of Guidance: 21 September 2011. The Scottish Government.

SFC. (2012). Scottish Ministerial Letter of Guidance: 25 January 2012. The Scottish Government.

SFC. (2013). Letter of Guidance 2014-15: 21 October 2013. The Scottish Government.

SFC. (2014). SFC letter of guidance 2015-16: 31st July 2014. The Scottish Government.

SFC. (2015a). Letter of Guidance to SFC for the academic year 2016-17

SFC. (2015b). Outcome Agreements for Universities: Indicative Funding Decisions for AY 2015-16.

SGI. (1980). SGI - Company Info: Company Overview. Retrieved 28 July 2015, from http://www.sgi.com/company_info/overview.html

Shamsuddin, S., Othman, J., Shahadan, A. M., & Zakaria. (2012). The Dimensions of Corporate Entrepreneurship and the Performance of Established Organisation. *ACRN Journal of Entrepreneurship Perspectives*, *1*(2), 111–131.

Shane, S. (2003). Technology Entrepreneurship. *Research Policy*, *32*(2).

Shane, S. (2004). Encouraging University Entrepreneurship? The effect of the Bayh-Dole Act on University Patenting in the United States. *Journal of Business Venturing*, *19*(1), 127–151.

Sharma, P., & Chrisman, S. J. J. (1999). Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. *Entrepreneurship Theory and Practice*, *23*(3), 11–27.

Shattock, M. (2003). *Managing Successful Universities*. Maidenhead, UK: Society for Research into Higher Education and Open University Press.

Shattock, M. (2005). European Universities for Entrepreneurship: Their Role in the Europe of Knowledge the Theoretical Context. In *Entrepreneurialism and the Knowledge Society* (Michael Shattock, pp. 13–24). Higher Education Management and Policy: OECD.

Shattock, M. (2009). Entrepreneurialism and Organisational Change in Higher Education. In *Entrepreneurialism in Universities and the Knowledge Economy* (Michael Shattock, pp. 1–8). UK: The Society for Research into Higher Education and Open University Press.

Shattock, M. (2013). University Governance, Leadership, and Management in a Decade of Diversification and Uncertainty. *Higher Education Quarterly*, *67*(3), 217–233.

Siegel, D. S., Waldman, D., & Link, A. N. (2003). Assessing the Impact of Organisational Practices on the Relative Productivity of University Technology Transfer Offices: An Exploratory Study. *Research Policy*, *32*, 27–48.

Silverman, D. (2006). *Interpreting Qualitative Data*. London: Sage.

Silverman. (2013). *Doing Qualitative Research* (4th ed.). London: Sage.

Simon, H. A. (1967). The Business School a Problem in Organisational Design. *Journal of Management Studies*, *4*(1), 1–16.

Sims, & Lafollette, W. (1975). An Assessment of the Litwin and Stringer Organisation Climate Questionnaire. *Personnel Psychology*, *28*(1), 19–38.

Slaughter, S., & Leslie, L. L. (1997). *Academic Capitalism: Politics, Policies and the Entrepreneurial University*. Baltimore, MD: Johns Hopkins University Press.

Smith, R., & McElwee, G. (2013). The embeddedness of illegal entrepreneurship in a closed ethnic community. *International Journal of Business and Globalisation*, *11*(1), 45.

Smith, R., & McElwee, G. (2015). Developing qualitative research streams relating to illegal rural enterprise: Reflections on researching qualitatively at the margins of entrepreneurship research. *International Journal of Entrepreneurial Behaviour and Research*, *21*(3), 364–388.

Smith, A., & Webster, F. (1997). Changing Ideas of the University. In *the Postmodern University? Contested Visions of Higher Education in Society,* (Smith, A. and Webster, F., pp. 1–14). Buckingham, UK: Society for Research into Higher Education and Open University Press.

Sooreh, L. K., Salamzadeh, A., Saffarzadeh, H., & Salamzadeh, Y. (2011). Defining and Measuring Entrepreneurial Universities: A Study in Iranian Context Using Importance-Performance Analysis and Topsis Technique. *Global Business and Management Research: An International Journal*, *3*(2), 182–199.

Spender, J.-C., Corvello, V., Grimaldi, M., & Rippa, P. (2016). Startups and open innovation: a review of the literature. *European Journal of Innovation Management*, *20*(1), 4–30.

SPOCS. (2012). SPOCS: Building the Next Generation Points of Single Contact. Retrieved 30 May 2016, from http://www.eu-spocs.eu/

Sporn, B. (2001). Building Adaptive Universities: Emerging Organisational Forms based on experiences of European and US Universities. *Tertiary Education and Management,* *7*(2), 121–134.

Stake, R. (1995). *The art of case study research*. London: Sage.

Stensaker, B., & Vabø, A. (2013). Re-inventing Shared Governance: Implications for Organisational Culture and Institutional Leadership. *Higher Education Quarterly*, *67*(3), 256–274.

Stevenson, H. H., & Jarillo, J. C. (1990). A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal*, *11*, 17–27.

Stevenson, H., & Mercer, J. (2013). Challenging Times: An Analysis of Current Developments and Prospects for Industrial Relations in the UK Higher Education Sector. *Society for Research in Higher Education*, 1–17.
401

Stewart, M. (2015). Why Universities Need an Entrepreneurial Spirit. Retrieved from https://agenda.weforum.org/2015/05/why-universities-need-an-entrepreneurial-spirit/

Stiles, W. B. (1993). Quality Control in Qualitative Research. *Clinical Psychology Review*, *13*, 593–618.

Strauss, A., & Corbin, J. (1990). Basics of Qualitative Research: Grounded Theory Procedures and Techniques. California: Sage Publications.

Strauss, A., & Corbin, J. (1998). Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory. Thousand Oaks, CA: Sage.

Stromquist, N. P., & Monkman, K. (2000). Globalisation and Education: Integration and Contestation Across Cultures. Rowman & Littlefield.

Sturges, J. E., & Hanrahan, K. J. (2004). Comparing Telephone and Face-to-Face Qualitative Interviewing: A Research Note. *Qualitative Research*, *4*(1), 107–118.

Surie, G., & Ashley, A. (2008). Integrating Pragmatism and Ethics in Entrepreneurial Leadership for Sustainable Value Creation. *Journal of Business Ethics*, *81*, 235–246.

Svensson, P., Klofsten, M., & Etzkowitz, H. (2012). An Entrepreneurial University Strategy for Renewing a Declining Industrial City: The Norrköping Way. *European Planning Studies*, *20*(4), 505–525.

Tadaki, M. (2013). How are we doing Higher Education Internationalisation? Retrieved 29 May 2016, from http://www.universityworldnews.com/article.php?story=2013052818005080

Tansey, O. (2007). Process Tracing and Elite Interviewing: A Case for Non-Probability Sampling. *University of Reading*, 765–772.

Teece, D., Pisano, G., & Sheun, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509–533.

Teesside University. (2012). Institutional Plan 2012-15. Teesside University.

Tellis, W. (1997). *Application of a Case Study Methodology*. The Qualitative Report.

Temple, P. (2009). Teaching and Learning: An Entrepreneurial Perspective. In *Entrepreneurialism in Universities and the Knowledge Economy* (Michael Shattock, 402

pp. 49–62). UK: The Society for Research into Higher Education and Open University Press.

THE. (2014). REF 2014 Results: Table of Excellence.

THE. (2015). Mapping the Times Higher Education's top-400 universities 2013/14.

THE. (2018). International student table 2018: top 200 universities. Retrieved May 18, 2018, from https://www.timeshighereducation.com/student/best-universities/international-student-table-2018-top-200-universities

Thomson, B. S. (2011). Sample Size and Grounded Theory. *JOAAG*, *5*(1).

Thornton, P., Ribeiro, D., & Urbano, D. (2011). Sociocultural Factors and Entrepreneurial Activity: An Overview. *International Small Business Journal*, *29*(2), 105–118.

Thune, T., Reymert, I., Gulbrandsen, M., & Aamodt, P. O. (2016). Universities and external engagement activities: Profiles for universities? *Science and Public Policy*.

Tierney, W. G. (1988). Organisational Culture in Higher Education: Defining the Essentials. *The Journal of Higher Education*, *59*(1), 2–21.

Times Higher Education. (2012). Measures of Strength: How the Nation's Higher Education Institutions Stack Up. Retrieved 15 October 2015, from https://www.timeshighereducation.co.uk/sites/default/files/Attachments/THE/THE/5_July_2012/attachments/Measures_of_strength.pdf

Todorovic, W. Z., McNaughton, R. B., & Guild, P. (2011). ENTRE-U: An Entrepreneurial Orientation Scale for Universities. *Technovation*, *31*(2–3), 128–137.

Todorovic, W. Z., McNaughton, R. B., & Guild, P. D. (2005). Making University Departments More Entrepreneurial: The perspective from within. *The International Journal of Entrepreneurship and Innovation*, *6*(2), 115–122.

Turner, D. W. (2010). Qualitative Interview Design: A Practical Guide for Novice Investigators. *The Qualitative Report*, *15*(3), 754–760.

Turner, T., & Pennington III, W. W. (2015). Organizational Networks and the Process of Corporate Entrepreneurship: How the Motivation, Opportunity, and Ability to Act Affect Firm Knowledge, Learning, and Innovation. *Small Business Economics*, *45*(2), 447–463.
403

UBM. (2015). UBM Overview. Retrieved 2 October 2015, from http://www.ubm.com/ubm-overview

UKCISA. (2015). UKCISA: International Students in UK HE - International Student Statistics: UK Higher Education.

UKSI. (2013). Statutory Instruments Education: Listed Bodies England Order 2013. UK: UK Statutory Instruments.

Umoquit, M. J., Dobrow, M. J., Lemieux-Charles, L., Ritvo, P. G., Urbach, D. R., & Wodchis, W. P. (2008). The Efficiency and Effectiveness of Utilising Diagrams in Interviews: An Assessment of Participatory Diagramming and Graphic Elicitation. *BMC Medical Research Methodology*, *8*(1), 53.

Universitas 21. (2015). The United Kingdom Ranked one of the Highest Performing Countries for Higher Education in Universitas 21 report.

Universities Human Resources. (2012). Changing times in UK Universities: What Difference can HR make? Retrieved 27 December 2015, from http://www.uhr.ac.uk/uploadedfiles/documents/changing%20times%20in%20UK%20Universities%20(print%20version).pdf

Universities UK. (2014). In Focus UK Universities: The Impact of Universities on UK Economy. Universities UK.

University of Leeds. (2015). The University of Leeds Named University Entrepreneurial University of the Year. Retrieved 15 December 2015.

University of Nottingham. (2010). University of Nottingham Strategic Plan 2010-15. The University of Nottingham.

Urbano, D., & Guerrero, M. (2013). Entrepreneurial Universities Socioeconomic Impacts of Academic Entrepreneurship in a European Region. *Economic Development Quarterly*, *27*(1), 40–55.

UUK. (2012a). Futures for Higher Education: Analysing trends. Universities UK.

UUK. (2012b). *Patterns and Trends in UK Higher Education 2012* (Higher Education: Analysing a decade of Change) (pp. 2–23). UK: Universities UK.

UUK. (2012c). Universities Enabling Social Enterprise: Delivering Benefits for All (pp. 1–17). UK: Universities UK.

UUK. (2013a). Patterns and Trends in UK Higher Education 2013.

UUK. (2013b). Universities UK - Creating Prosperity: The Role of Higher Education in Driving the UK's Creative Economy (pp. 1–51). UK: Universities UK.

UUK. (2014a). *Patterns and Trends in UK Higher Education 2014* (No. 978-1-84036-330–2) (pp. 1–27). UK: Universities UK.

UUK. (2014b). The Funding Environment for Universities: International Students in Higher Education: The UK and its Competition. Retrieved 23 July 2015, from http://www.universitiesuk.ac.uk/highereducation/Documents/2014/InternationalStud entsInHigherEducation.pdf

UUK. (2014c). Universities UK: An Overview of the Higher Education Sector. Retrieved 9 February 2015, from http://www.universitiesuk.ac.uk/linksforstudents/Pages/Anoverviewofthehighereduca tionsector.aspx

UUK. (2015). Universities UK - An Overview of the Higher Education Sector. Retrieved from http://www.universitiesuk.ac.uk/linksforstudents/Pages/Anoverviewofthehighereduca tionsector.aspx

UUK, U. (2012d). Universities UK - Higher Education in Facts and Figures: A Core Strategic Asset to the UK (No. 978-1-84036-274–9) (p. 23). Universities UK.

Van Looy, B., Landoni, P., Callaert, J., van Pottelsberghe, B., Sapsalis, E., & Debackere, K. (2011). Entrepreneurial Effectiveness of European Universities: An Empirical Assessment of Antecedents and Trade-offs. *Research Policy*, *40*, 553–564.

Van Maanen, J. (1988). *Tales of the Field: On Writing Ethnography*. Chicago: University of Chicago Press.

Van Vught, F. (1999). Innovative Universities. *Tertiary Education and Management*, *5*(4), 347–354.

Van Vught, F. (2009). The EU Innovation Agenda: Challenges for European Higher Education and Research. *Higher Education Management and Policy*, *21*(2), 1–22.
405

Van Vught, F., & Maassen, P. (1992). Strategic Planning. In *Encyclopaedia of Higher Education* (Clark Burton and Neave G, pp. 1483–1493). Pergamon Press.

Venkataraman, S. (2004). Regional Transformation through Technological Entrepreneurship. *Journal of Business Venturing*, *19*, 153 – 67.

Venkatraman, N., Lee, C.-H., & Bala, I. (2008). Interconnect to win: The joint effects of business strategy and network positions on the performance of software firms. In *Advances in Strategic Management* (Rowley, Timothy J., Joel, A. C. Baum, pp. 391-424). Bingley, UK: Emerald Group Publishing.

Vienna Declaration. (2010). *Budapest-Vienna Declaration on the European Higher Education Area*. Budapest and Vienna: European Higher Education Area (EHEA).

Vilalta, J., Pifarré, H., & Betts, A. (2011). *A New Approach to Higher Education Quality: Analysing the Impact of Universities of Catalonia on Society and Economy.* (pp. 1–7). Catalonia, Spain: Catalan Association of Public Universities (ACUP).

Volberda, H. W. (1996). Toward the Flexible Form: How to Remain Vital in Hypercompetitive Environments. *Organisation Science*, *7*(4), 359–374.

Wagner, E., & Newell, S. (2006). Repairing ERP: Producing Social Order to Create a Working Information System. *The Journal of Applied Behavioural Science*, *42*(1), 40–57.

Walford, G. (1991). Changing Relationship Between Government and Higher Education in Britain. In *the Changing Relationship Between Government and Higher Education in Western Europe* (Neave, G. and Van Vught, F. A., pp. 165–183). Oxford, England: Pergamon Press.

Walker, K. (2012). The Technopreneurship Process: Academic Entrepreneur University Spin-offs. *RIThink*, *2*, 11–22.

Wang, Y. K. M. (2015). The Drivers of International Corporate Entrepreneurship: CEO Incentive and CEO Monitoring Mechanisms. *Journal of World Business, 50*(4), 742–753.

Wang, Y., & Zhang, X. (2009). Operationalisation of Corporate Entrepreneurship and its Performance Implications in China: An Empirical Study. *Journal of Chinese Entrepreneurship*, *1*(1), 8–20.
406

Waren, S. (2009). Visual Methods in Organisational Research. In *the Sage Handbook of Organisational Research Methods* (Buchanan, David & Bryman, Alan, pp. 566–582). SAGE Publications Ltd.

Watson, D., & Taylor, D. (1998). Lifelong Learning and the University: A Post -Dearing Agenda. London: Falmer.

Webber, G. C. (2000). UK Higher Education: Competitive Forces in the 21st Century. *Higher Education Management*, *12*(1), 55–66.

Wei, I. Q., & Ling, Y. (2015). CEO Characteristics and Corporate Entrepreneurship: Evidence from China. *Journal of Business Research*, *68*(6), 1157–1165.

Wernerfelt, B. (1984). A Resource-Based View of the Firm. *Strategic Management Journal*, *5*(2), 171–180.

Williams, D., Bedny, A., & Terlyga, N. (2015). Evaluation of Institutional Factors Shaping Entrepreneurial University: A Tale of Two Universities and Regional Development in Russia. Presented at the European Conference on Innovation and Entrepreneurship (ECIU), Genoa, Italy: ECIU.

Williams, G., & Kitaev, I. (2005). Overview of National Policy Contexts for Entrepreneurialism in Higher Education Institutions. In *Entrepreneurialism and the Knowledge Society* (Michael Shattock, Vol. 17, pp. 125–141). OECD Publishing: Journal of the Programme on Institutional Management in Higher Education: Higher Education Management and Policy (OECD).

Williams, G. L. (2003). *The Enterprising University: Reform, Excellence, and Equity*. Society for Research into Higher Education.

Williams, G. L. (2009). Finance and Entrepreneurial Activity in Higher Education in a Knowledge Society. In *Entrepreneurialism in Universities and the Knowledge Economy* (Michael Shattock, pp. 9–32). UK: The Society for Research into Higher Education and Open University Press.

Williamson, N., Beadle, S., & Charalambous, S. (2013). *Enterprise Education Impact in Higher Education and Further Education* (pp. 3–104). UK: Department for Business Innovation and Skills.

Wilson, A. M. (2001). Understanding Organisational Culture and the implications for Corporate Marketing. *European Journal of Marketing*, *35*(3/4), 353–367.

Wilson, T. (2012). *Business-University Collaboration: The Wilson Review* (pp. 2–81). UK: Department for Business, Innovation & Skills.

Wissema, J. G. (2009). Towards the Third-Generation University Managing the University in Transition. Cheltenham: Edward Elgar Publishing.

Witty, A. (2013). Encouraging a British Invention Revolution: Sir Andrew Witty's Review of Universities and Growth (Independent Review) (pp. 2–146). UK: BIS.

Wong, J.-M. (2011). A Relational View of Resources-based Theory: The case of Internationalization of Li & Fung Group. *Journal of Human Resource and Adult Learning*, *7*(2), 34–39.

Wong, P.-K., Ho, Y.-P., & Singh, A. (2007). Towards an 'Entrepreneurial University' Model to Support Knowledge-Based Economic Development: The Case of the National University of Singapore. *World Development*, *35*(6), 941–958.

Wood, M. S. (2011). A Process Model of Academic Entrepreneurship. *Business Horizons*, *54*, 153–161.

Woollard, D., Zhang, M., & Jones, O. (2007). Creating Entrepreneurial Universities: Insights from a new university business school (pp. 1–20). Presented at the Institute for Small Business & Entrepreneurship (ISBE), Glasgow, Scotland: Institute for Small Business & Entrepreneurship.

Wright, M., Clarysse, B., Lockett, A., & Knockaert, M. (2008). Mid-range Universities' Linkages with Industry: Knowledge Types and the Role of Intermediaries. *Research Policy*, *37*(8), 1205–1223.

Wright, M., Clarysse, B., Mustar, P., & Lockette, A. (2007). *Academic Entrepreneurship in Europe*. Edward Elgar Publishing.

Wyness, G. (2010). Policy Changes in UK Higher Education Funding, 1963-2009. Department of Quantitative Social Science.

Yasin, N. M., & Osman, M. H. M. (2015). University Spin-off for Economic Development in Malaysian Universities. *International Journal of Economics and Financial Issues*, *5* (Special Issue), 135–138.

Yin, R. K. (1984). *Case Study Research, Design, and Methods*. Beverly Hills, CA: Sage.

Yin, R. K. (1989). *Case Study Research: Design and Methods* (Vol. 5). London: Sage.

Yin, R. K. (1993). *Applications of Case Study Research*. Newbury Park, California: Sage Publications.

Yin, R. K. (2003). *Case Study Research: Designs and Methods* (3rd ed.). Thousand Oaks: Sage.

Yin, R. K. (2009). *Case Study Research* (4th ed.). Thousand Oaks, CA: Sage.

Yin, R. K. (2011). *Qualitative Research from Start to Finish*. New York: The Guildford Press.

Yin, R. K. (2014). *Case Study Research: Design and Methods* (5th ed.). London: Sage.

Yokoyama, K. (2006). Entrepreneurialism in Japanese and UK Universities: Governance, management, leadership, and funding. *Higher Education*, *52*(3), 523–555.

Young. (2014). *Enterprise for all: The relevance of Enterprise Education* (pp. 1–47). London: Department for Business, Innovation, and Skills. The National Archives.

Yusof, M., SaeedSiddiq, M., & Nor, L. M. (2012). Internal Factors of Academic Entrepreneurship: The Case of Four Malaysian Public Research Universities. *Journal of Entrepreneurship, Management, and Innovation*, *8*(1), 84–115.

Zaheer, A., & Bell, G. G. (2005). Benefiting from network position: firm capabilities, structural holes, and performance. *Strategic Management Journal*, *26*(9), 809–825.

Zahra, S., A. (1986). A Cannonical Analysis of Corporate Entrepreneurship Antecedents and Impact on Performance. In *Best Paper Proceedings* (pp. 71–75).

Zahra, S. A. (1991). Predictors and Financial Outcomes of Corporate Entrepreneurship: An Exploratory Study. *Journal of Business Venturing*, *6*, 259–285.

Zahra, S., A. (1995). Corporate Entrepreneurship and Financial Performance: The Case of Managerial Leverage Bouyants. *Journal of Business Venturing*, *10*(3), 225–247.

Zahra, S. A. (1996). Governance, Ownership, and Corporate Entrepreneurship: The Moderating Impact of Industry Technological Opportunities. *Academy of Management Journal*, *39*(6), 1713–1735.

Zahra, S. A. (2015). Corporate Entrepreneurship as Knowledge Creation and Conversion: The Role of Entrepreneurial Hubs. *Small Business Economics*, *44*(4), 727–735.

Zahra, S. A., Gedajlovic, E., Neubaum, D., O., & Shulman, J., M. (2009). A typology of Social Entrepreneurs: Motives, Search process and Ethical Challenges. *Journal of Business Venturing*, *24*(5), 519–532.

Zahra, S. A., & Nielsen, A. P. (2002). Sources of Capabilities, Integration and Technology Commercialisation. *Strategic Management Journal*, *23*, 377–398.

Zahra, S., A., Sapienza, H., & Davidsson, P. (2006). Entrepreneurship and Dynamic Capabilities: A Review, Model, and Research Agenda. *Journal of Management Studies*, *43*(4), 917–955.

Zhon, C. (2007). The Entrepreneurial University and the Future of Higher Education in China. *Working Paper*.

Appendices

Appendix 1: Types of case studies, limitations, and some examples

Table 18: Types of case studies, limitations, and some examples

Types	Explanation	Strengths and limitations	Examples from other scholars	Applicable in this study
Single	Contains one case (Eisenhardt, 1989; Yin, 2009; Miles & Huberman, 1994).	Engages in the rich analysis that may illuminate the case, but it is limited in generalisation and may generate several globalised economy. information-processing biases (Eisenhardt, 1989; Yin, 2003).	Röpke, J. (2000). The Entrepreneurial University Innovation, academic knowledge creation and regional development in a Working Paper, Philipps-Universität Marburg, German, 1–19.	
Multiple	Contains more than one	It is replicable but time-	Guerrero, M., David, U.,	This thesis has examined 15

Types	Explanation	Strengths and limitations	Examples from other scholars	Applicable in this study
	case. Exploring the differences within and between cases (Yin 1989; Eisenhardt 1989).	consuming and expensive (Yin, 2003, Eisenhardt, 1989; Baxter & Jack, 2008).	James, C., & Damien, O. (2014). Entrepreneurial Universities in two European Regions: a case study comparison. The Journal of Technology Transfer, 39(3), 415–434.	self-defined entrepreneurial universities consisting of: (i) pre-1992 and post-1992 institutions (ii) teaching-oriented, research-intensive and technological universities and (iii) eight regions in two different UK countries.
Exploratory	Limited prior knowledge or preconceived propositions about a subject where there remains a paucity of clarification (Yin, 2003; Baxter & Jack, 2008).		Pratt, J. (2001). Changing Patterns of Diversity in Europe: Lessons from an OECD Study Tour. Higher Education Management, Education & Skills, 13(2), 93–103.	This thesis has explored 'how UK self-defined entrepreneurial universities' are responding to the policy imperative' to becoming more entrepreneurial'. Thus, offered clarification into the

Types	Explanation	Strengths and limitations	Examples from other scholars	Applicable in this study
				elements epitomising factors and characteristics of the entrepreneurial university phenomenon.
Explanatory	The extension of an exploratory case study to find the value to construct and seeks to build causal arguments that need to be tested empirically (Yin, 2003).		Böhme, K., Hetherington, L., Greiner, C., & Sailer, K. (2015). Educating Entrepreneurship Educators - the Coneeect Model. In the University-Industry Interaction Conference. Berlin, Germany: University-Industry Innovation Network.	

Types	Explanation	Strengths and limitations	Examples from other scholars	Applicable in this study
Descriptive	The description of a phenomenon in its real-life with some theories to aid understanding (Yin 2003).	Thick description and tends to be more historical.	Finkle, T. A. (2012). Corporate Entrepreneurship and Innovation in Silicon Valley: The Case of Google, Inc. Entrepreneurship Theory and Practice, 36(4), 863–884.	
Collective	Same as Yin's and Eisenhardt's expressions of multiple case studies.	Mostly used in meta-analysis research with limitation to secondary data only.	Bronstein, J., & Reihlen, M. (2014). Entrepreneurial University archetypes: A meta-synthesis of case study literature. Industry and Higher Education, 28(4),	

Types	Explanation	Strengths and limitations	Examples from other scholars	Applicable in this study
			245–262.	
Intrinsic	Although theory building is an option, the primary intention of the researcher is to understand the case itself rather than the phenomenon (Stake 1995; Creswell 1998).	The results have limited transferability or applicability to other situations (Baxter & Jack, 2008; Yin, 2011, p. 310).	Golding, B., & Trafford, V. (2011). Demystifying the Doctoral Viva. In positive futures for higher education: connections, communities, and criticality (pp. 1–5).	
Instrumental	The case is used as an instrument to gain insight into an issue or helps to advance a theory (Stake 1995; Creswell 1998).	Potential applicability to other situations (Yin, 2011).	'Clinical trials' that are designed to find answers to a new way to treat or prevent cancer.	

Source: Author's own

Table 19: Types of non-probability sampling

Recruiting category and approach	Sampling type	Selection strategy	Pros	Cons
Unsystematic and Unstructured	Convenience Accessible Accidental	Select cases based on their availability.	Saves time, money and effort.	The selection of cases is based on the situation. It is at the expense of information and credibility.
	Snowball Chain-referral	Chain referral based on people suggesting one another-a nomination approach.	Identifies case of interest to people.	Time-consuming and reliant on the skill of the individual.
Systematic and Structured	Quota or strata	Selection of people on an equal basis and the use of demographic variables such as location, university or academic status.	Analytical confidence and representativeness.	The sample may not be typical of the desired quality and is time-consuming as it requires keeping on going until the sample is reached.
	Theoretical saturation	Locate as many relevant cases as	Continues until saturation is	

Recruiting category and approach	Sampling type	Selection strategy	Pros	Cons
	Sequential	possible.	reached (no new information emerges).	
	Criterion	Select all cases that meet certain criteria or based on preconceived purpose.	Useful for quality assurance.	Time-consuming process and bias selection of sample may occur. This sampling technique was adopted in this thesis as the NCEE award was used as a priori to identify 'self-defined entrepreneurial universities'.
	Expert Purposive Judgmental	Judgment on the ability of the respondents to contribute to the study.		This expert technique was utilised in the selection of multiple participants for the semi-structured interviews who have responsibilities for enterprise-related activities.

Source: Author's own

417

Appendix 3: Responses to interview priming and an invitation to draw

Example 1 Participant 1: Reaction to interview priming

Wed 02/09/2015, 14:54

Kafayat

Sorry about the delay, I've tried to capture my role as knowledge exchange leader as two intersecting loops': one driven by a systematic need to recruit business projects, and other driven by entrepreneurial traits based on my interest and drive to engage in small business projects to help my understanding and research.

Hope it makes sense?

Example 2 Participant 2: Comments on interview questions and reaction to interview priming

Mon 17/08/2015, 11:51

Dear Kafayat,

… I don't have time to produce a mind map or taxonomy for you, just in case this rules me out. In terms of timing, can we do this by phone and if so, how about 10.30 am on Friday 21st August?

Kind regards,

418

Example 3 Participant 5: Reaction to interview priming

Tue 04/08/2015, 18:57

Hello, Kafayat,

I've not been asked to produce a drawing before; it should be an interesting exercise.

Best Wishes,

Example 4: Participant 0: Interviewing priming leading to the cancellation of participation

Sent: Monday, September 07, 2015 10:01 AM

To: Kafayat Lamidi U0950092

Subject: RE: INTERVIEW SCHEDULE

Dear Kafayat,

Many thanks for this update and for providing the questions you would like to ask me during our interview. As I mentioned when I first responded to you, my concern at being asked was that your interview seemed to focus on the 'Entrepreneurial University' and the characteristics which I felt made us an award-winning university in this category. I did explain at that point that my role here is operational, not strategic, and so whilst I am responsible for delivering a wide range of enterprising activities which hopefully contribute to the success of the overall picture of entrepreneurship here, my responsibilities are towards the students and graduates. I am going to send a cancellation for the already arranged meeting, but I wish you well with your research.

Kind Regards

419

Example 5: Participant 15: Chain-referral or snowball sampling and timing issue associated with participant diagrams

Fri 15/01/2016, 14:42

Kafayat

I am away now for several weeks so there will be a delay in my response to your email and the provision of a mind map. I suggest that you contact Mr. A, who runs the Enterprise Lab and Mr. B who is the deputy director of communications to either arrange an interview or discuss who it would be sensible to talk to for the purposes of your thesis. They are busy people, so the mind map exercise may be asking too much, as these take the time to produce.

Cheers

Appendix 4: Overall research protocol

This protocol is developed to guide the qualitative (using participant diagrams, semi-structured and documentation) data collection and analysis process from the 15 cases. It contains instruments and procedures to standardise the agenda of the research line of inquiry and allows the data to be collected in a systematic way which in return, is hoped to maximise the reliability of the research. Following Eisenhardt (1989) and Yin's (2009) suggestion, this protocol is created.

The general purpose of the research:

This study aims to extend the European Guiding Framework (EC and OECD, 2012) by exploring 'how UK self-defined entrepreneurial universities are responding to the policy imperative to become more entrepreneurial', and where possible, to clarify between their determinants and characteristics. It is also hoped that the practical contribution of the study could offer useful patterns for scientific analysis and provides policy-makers and HEIs planners with a frame to reflect on how to strengthen entrepreneurship in universities.

Drawing on the gap in the European framework as a starting point, it is argued that there is a lack of clarity in terms of how it applies to the UK context. That is, universities with the same social structure, political and economic context vary in their approaches toward becoming more entrepreneurial and that what defines one university has been entrepreneurial is not the same as the other. Therefore, the main research questions formulated for this study to aid in accomplishing the above aim are:

RQ1: What are the key factors influencing the development of UK self-defined Entrepreneurial Universities?

RQ2: What do UK self-defined entrepreneurial universities consider entrepreneurial in their own context and why?

RQ3: How do UK self-defined entrepreneurial universities differ in their entrepreneurial approaches and why do some do better than others?

To address these questions, three research objectives have been designed:

421

Objective 1: To explore the key determinants influencing the development of UK self-defined Entrepreneurial Universities.

In addressing this objective, the RBV perspective was adopted.

Objective 2: To identify the characteristics of UK self-defined Entrepreneurial University.

In addressing this objective, the CE perspective was utilised.

Objective 3: To develop typologies of self-defined entrepreneurial universities.

In addressing this objective, both the RBV and CE lenses are complemented.

These objectives were achieved through 32 semi-structured interviews conducted with 15 UK self-defined entrepreneurial universities exploring how they are responding to the policy imperative 'becoming more entrepreneurial'.

Thematic analysis was used to identify themes and categorise factors into different groups that best describe the commonalities between the factors. Then manually, qualitative cluster analysis was utilised to group cases into similarities based on how they are approaching entrepreneurialism by combining the key determinants and characteristics to generate a typology of the entrepreneurial university.

Selection of cases:

On the notion that all universities are divergent towards Entrepreneurial University, the study seeks to identify the different factors underpinning the UK self-defined entrepreneurial universities' approach towards becoming more entrepreneurial. Therefore, cases have been selected using the criterion sampling technique. This indicates that cases were selected on the ground to collect information related to the issue under consideration. Perhaps, the NCEE award was considered as a priority. For identifying boundaries for selecting the cases, targeted cases are universities that:

422

Criteria 1: Based in any of the four UK countries: England, Scotland, Wales and Northern Ireland.

Criteria 2: Explicitly demonstrate elements of practice in enterprise, entrepreneurship and/or innovation and has been nationally pronounced as Entrepreneurial University between 2008 and 2015.

Furthermore, there are complex issues related to within the individual university. This ensued from challenges in identifying both centres and departments or faculties in these different universities that embrace entrepreneurship or primarily have responsibilities for the enterprise. This was addressed using their subjects of focus or discipline. This follows with Patton's (2002) advice pointing out that adopting a purposive approach rather than methodological rules could limit the ambiguity in qualitative inquiry. Thus, binding this case study research with purpose, location and time are significantly appropriate.

The 15 selected universities have some important institutional and positional attributes. The universities involved in the study represent around 371,228 students from the 2.3 million students studying at UK HEIs. Firstly, these institutions can be grouped into three categories based on the size or numbers of their students' enrollment:

Small-sized- that is, one University (U1) enrolled less than 15,000;

Mid-sized- that is, eight universities (U2, U3, U4, U5, U7, U8, U10, U14) enrolled between 15,000 and less than 25,000 students;

Large-sized- that is, six universities (U6, U9, U11, U12, U13, and U15) enrolled between 25,000 up to 35,000 and above.

Secondly, their years of establishment range from 1796 to 1952, with the majority found in the 18th century. Whilst these 15 institutions gained university status in the 19th century, eight (U1, U3, U7, U8, U9, U12, U14, U15) of them acquired their university status before 1992 and the remaining seven (U2, U4, U5, U6, U10, U11, U13) gained university status after the 1992 Act. Thus, this is a sample of relatively old and young or modern

423

universities; the sample that reflects the general situation in the UK university context. In addition, these universities could be classified into pre- and post-1992 classifications. Pre-1992 represents those institutions that have the power to award their own degrees before 1992 and Post-1992 universities are those that are bestowed this power in or after 1992.

As mentioned earlier, all selected universities are UK based but most of them are in England. All the 15 institutions are public universities. Finally, these institutions can be categorised into five mission groups: Russell Group (U3, U8, U9, U12, U15); University Alliance (U2, U4, U7, U10, U11, U13); European Consortium Innovative Universities (U14); 1994 Group (U1); and the Million+ (U5, U6) group. The Russell Group are the large research-intensive universities; the University Alliance represents broad-based or balanced portfolio universities with focus on teaching, research, enterprise, and entrepreneurship; the European Consortium of Innovative Universities is a collection of leading international universities that place emphasis on innovation, creativity, societal impact on driving knowledge-based economic development; the 1994 Group used to be smaller research-intensive universities in terms of size and amount of research grants allocated; and the Million+ are mainstream universities with focus on solving complex problems in the society.

Appendix 5: Trail of evidence on interview guide's feedback

Table 20: Example 1: Ethics Reviewer's comments on the interview guide

Issue	Advice/comments to the applicant
Aim/objectives of the study	Although I see no ethical issues arising I would encourage the student to think of ways of strengthening this study before embarking on too much fieldwork. Based on the interview schedule, I think there is a danger of collecting superficial information. A pilot study to clear the ground for more substantive fieldwork may be helpful.

Table 21: Year 2 progression assessors' feedback

The assessors should specify clearly any corrections required to the progress report if deferred for resubmission, and/or any advice to the student and supervisory team that should be considered for future work.

Below is not for corrected, but a summary of the feedback given to the student

Literature: general comments are that this should be improved with regards to it being a 'critical review'. Overall, initially, it looks rather a policy-driven over academic examination of the literature. I think it would benefit with more overall linkage to the title. For example, I did really expect a debate about the enterprise /entrepreneurial literature underpinning what had been investigated with regards to characteristics, perhaps, a start with broader context around international institutions (this was mentioned as a passing glance). I was fully sure where the focus of the study sits, other than winning an award? I think the definition needs to be clearer and this should not perhaps be confused with enterprise education. Being an entrepreneurial university and enterprise education are two different things? Contribution to knowledge needs to be given more focus on the purpose of the study, as per a Ph.D., this should come with the strengthening of the focus on the gaps out of an enhanced critique of the literature.

I would like to see the methods considered further. The questions at present don't appear to be grounded/driven fully by the present literature and thus don't do justice to fully focus on answering the RQs. There appears to be a bias in winning the award. There are several questions that might arise around this aspect perhaps the human capital and status that might drive initially putting the institution forward for an award? I am sure that other HEIs might be entrepreneurial against the literature, so whilst the population is clear, the sampling technique needs further consideration and an ability to justify it within the context of the literature and chosen methods. Obviously, this is non-probability sampling; I was looking to be assured that the student understood what type of sample was being proposed. Purposive sampling and case study, but case study uses similar characteristics. I was not sure that 'winning an award 'was a robust one? We did talk this through at the presentation and it ought to be a matter of further discussions/guidance from the supervisors.

Overall, I think there is the potential for contributions within the context of the study, but there is still more work to be undertaken firstly from the literature around gaps and contribution. This will further focus the

The assessors should specify clearly any corrections required to the progress report if deferred for resubmission, and/or any advice to the student and supervisory team that should be considered for future work.

research questions and more work should be complete with regards to the methods before data collection commences.

Example 3: Colleague's feedback on the interview guide

Mon 27/07/2015 11:24

Dear Kaffy,

Based on your two research objectives;

Objective 1: To explore the determinants and characteristics of the Entrepreneurial University

Objective 2: To develop a taxonomy of Entrepreneurial University in the UK

I do not think it's necessary for you to use different sets of questions. The important thing is for you to arrive at the same conclusion (addressing your objectives!).

Other than that, everything looks okay to me. These are my sincere observations.

Best wishes

Appendix 6: Final interview guide

The following are the questions that were used to undertake the semi-structured interviews in the primary data collection.

Introductory question

1.   Please introduce yourself, stating how long you have been working for this University and how long you have been in your current role?

2.   In terms of working in the UK HE context, please how would you describe the term 'entrepreneurial university'? What do you perceive as it most important characteristics?

Theme: Strategic factors

3.   How would you describe your University's response to changes and challenges in the sector?

Theme: Internal factors

4.   Please, can you tell me how your University differ from others?

5.   Could you please point to the main activities that make this University entrepreneurial?

6.   Who would you consider as the main people that facilitate the University entrepreneurship? How?

7.   Please, can you tell me about the key facilitators and barriers?

Theme: External Factors

8.   Are there any external individuals or organisations that have significant stakes in the University's entrepreneurship?

Theme: Entrepreneurial outcomes

9.   If any, in what ways do you think your University is contributing to the economy? (Individual, organisational or societal)

Theme: Enhancing Enablers and Minimising Inhibitors

10.   What are the other actions or practices you consider could be implemented to enhance entrepreneurial practices at this University?

428

Closing the interview

11.   In advance of the interview you were invited to sketch your thoughts on determinants and characteristics, could you please talk me through it? With all our discussions, would you like to make any changes to your drawing?

Table 22: Summary of the flow of questions necessitating interviews

Research objectives	Research questions	Analytical lens	Semi-structured interview questions (SSIQs) as numbered in the final interview guide above	How & where questions evolved
To explore key determinants.	What factors influence the development of UK self-defined entrepreneurial university?	Evolutionary perspective of RBV	SSIQs: 3, 6, 7, & 8	1.2.1, 1.2.3, 4.2.1,
To identify distinctive characteristics.	What do UK self-defined entrepreneurial universities consider entrepreneurial and why?	Strategic perspective of CE	SSIQs: 2, 5, 8, & 10	1.2.1, 1.2.2, 1.2.4, 4.3.1

Research objectives	Research questions	Analytical lens	Semi-structured interview questions (SSIQs) as numbered in the final interview guide above	How & where questions evolved
To develop a typology.	How do UK self-defined entrepreneurial universities differ and why do some outperform others?	Both RBV and CE	SSIQs: 4, 8, & 9	1.2.1, 1.2.5, 2.4, 4.4, 5.3.2

SSIQ 8 and subsection 1.2.1 appear in all research objectives and questions. This is because external engagement is embodied in the entrepreneurial university notion and therefore, permeates into them all and thereby evolving in the development of the interview questions.

Appendix 7: Examples of the participant-led visual method

These are some examples of the PVM generated for the thesis by some participants
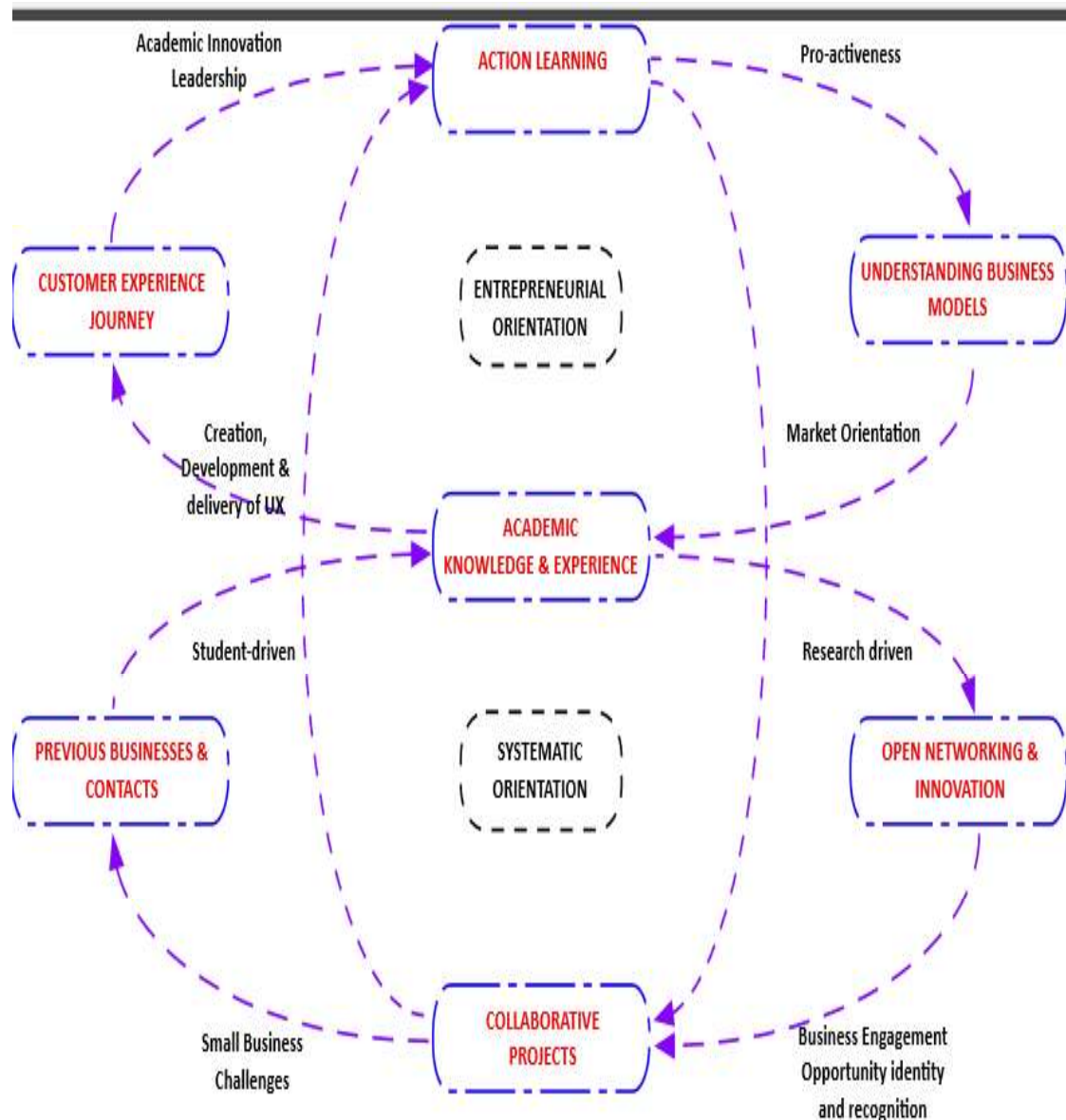
Figure 18: Example 1 Participant 1: Entrepreneurial Academics Journey
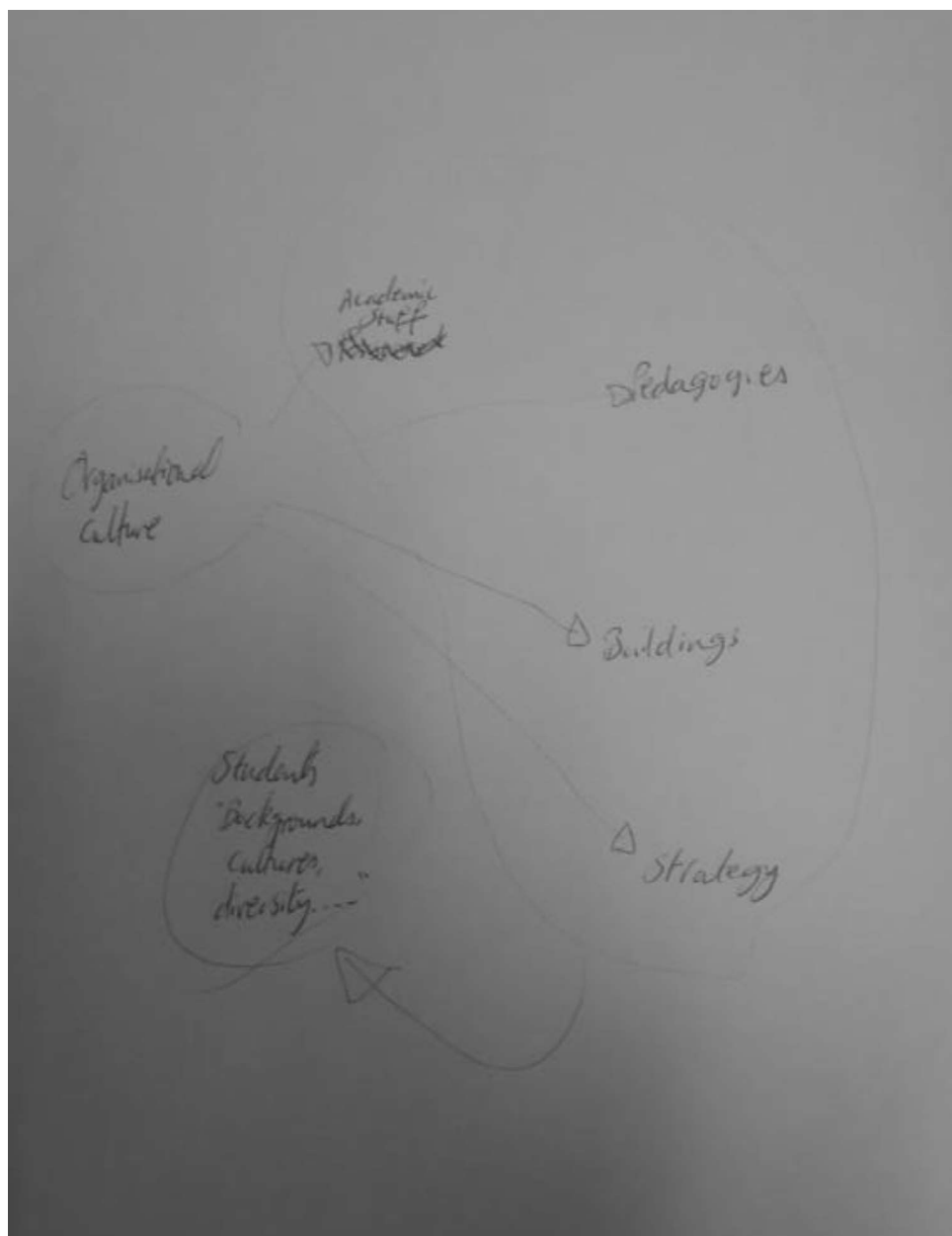
Figure 19: Example 2 Participant 4

Figure 20: Example 3 Participant 5

433
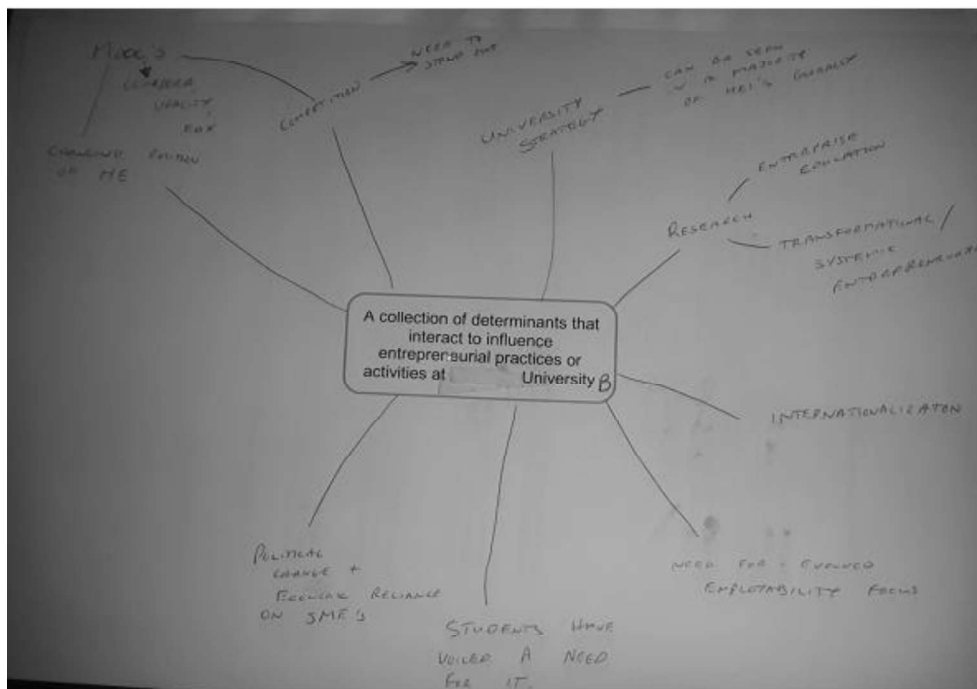
Figure 21: Example 4 Participant 7
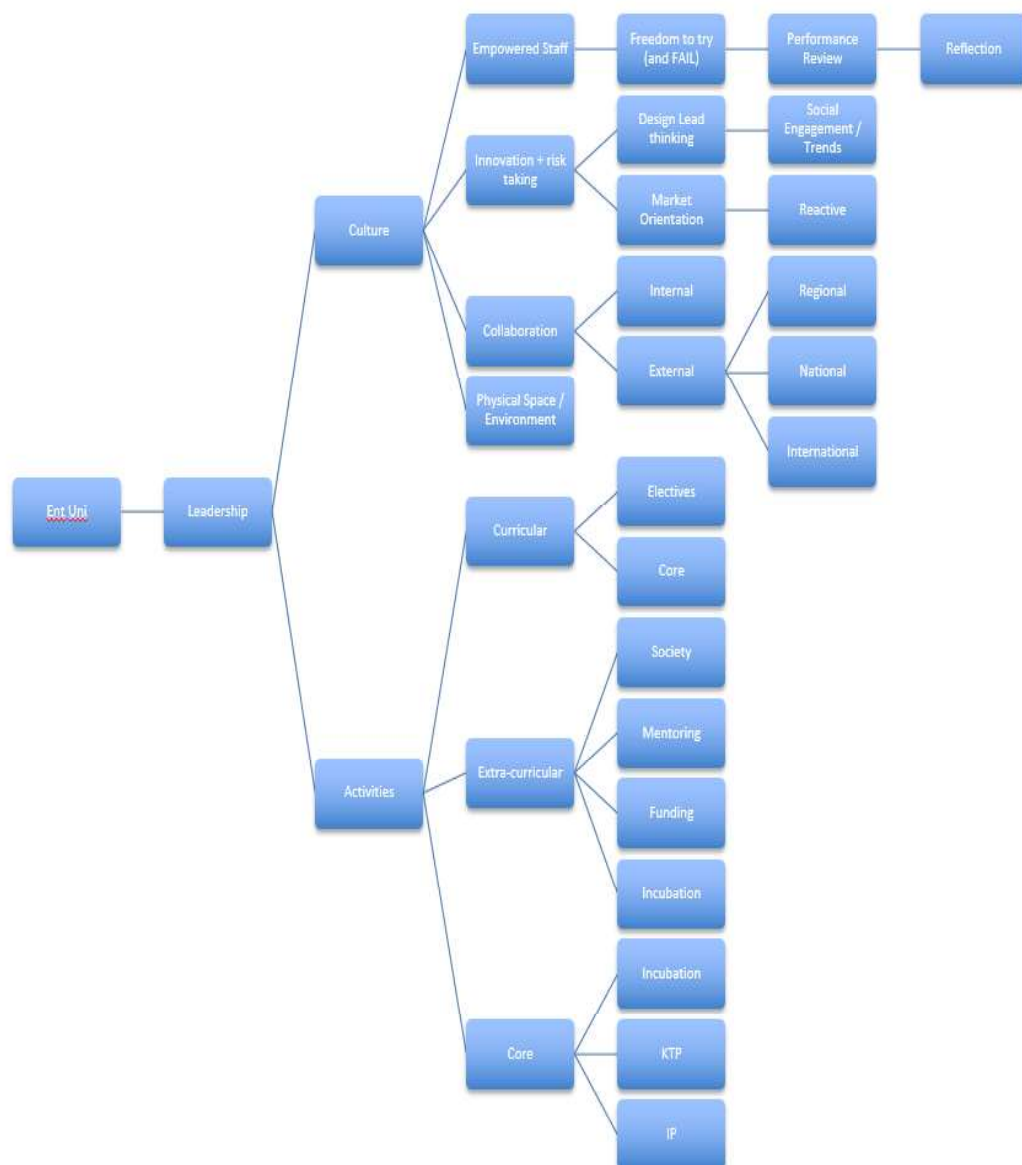
Figure 22: Example 5 Participant 8

435
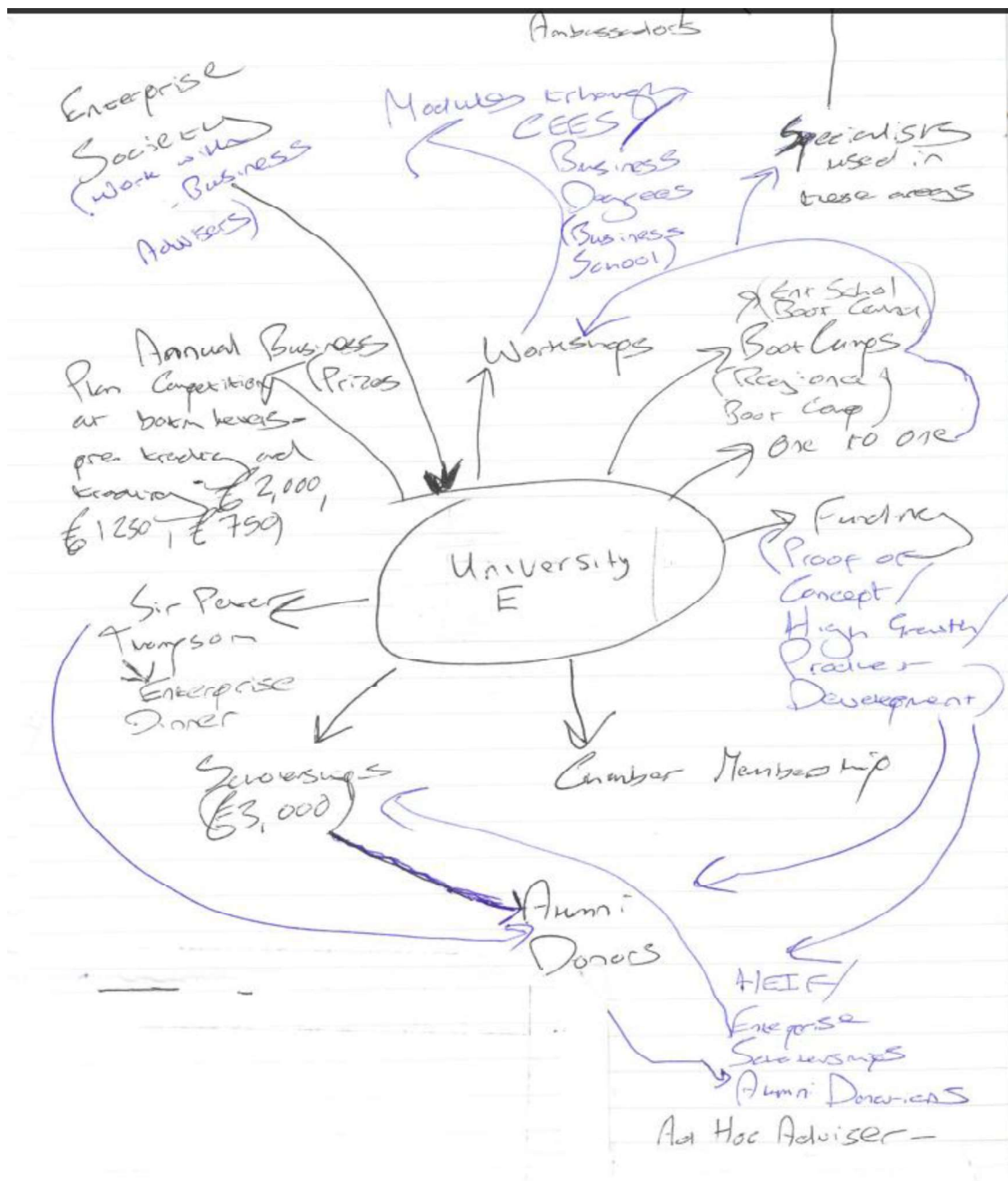
Figure 23: Example 6 Participant 12
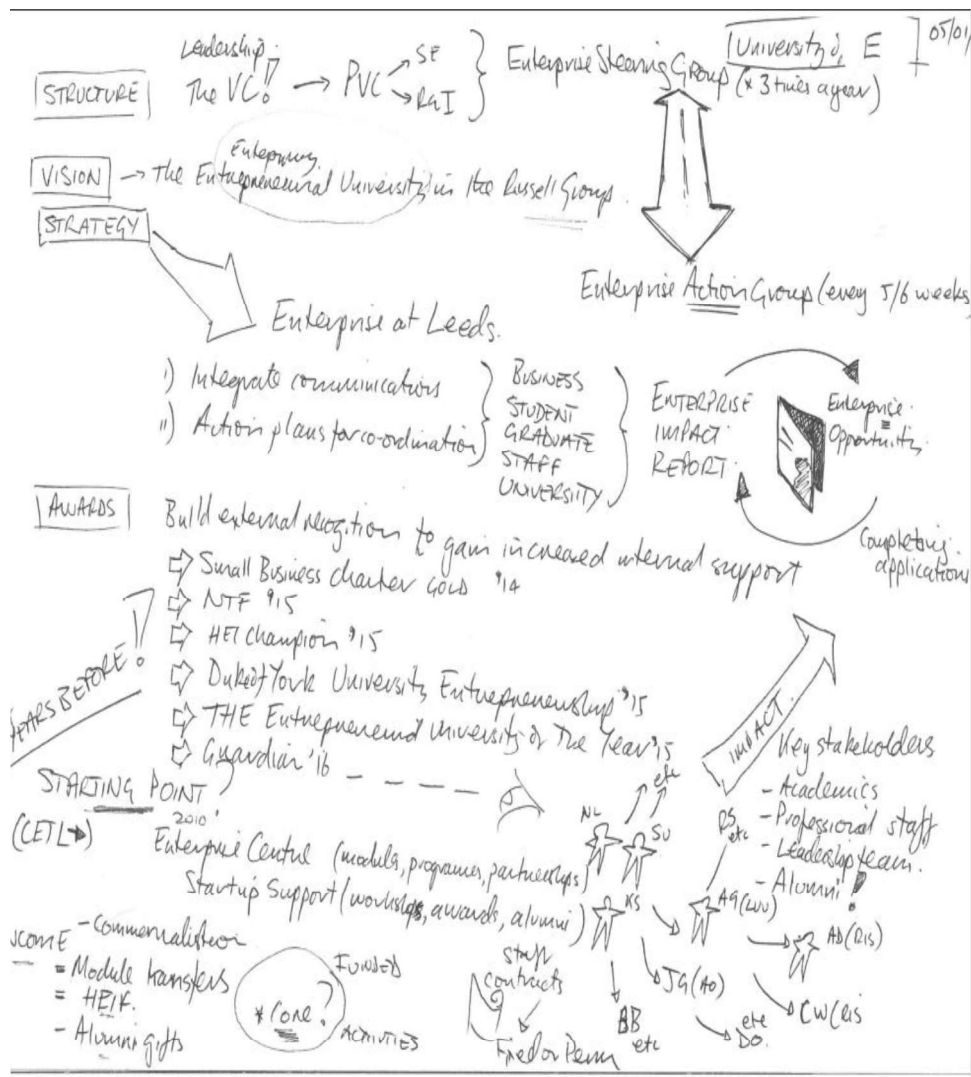
Figure 24: Example 7 Participant 13

Figure 25: Example 8 Participant 23
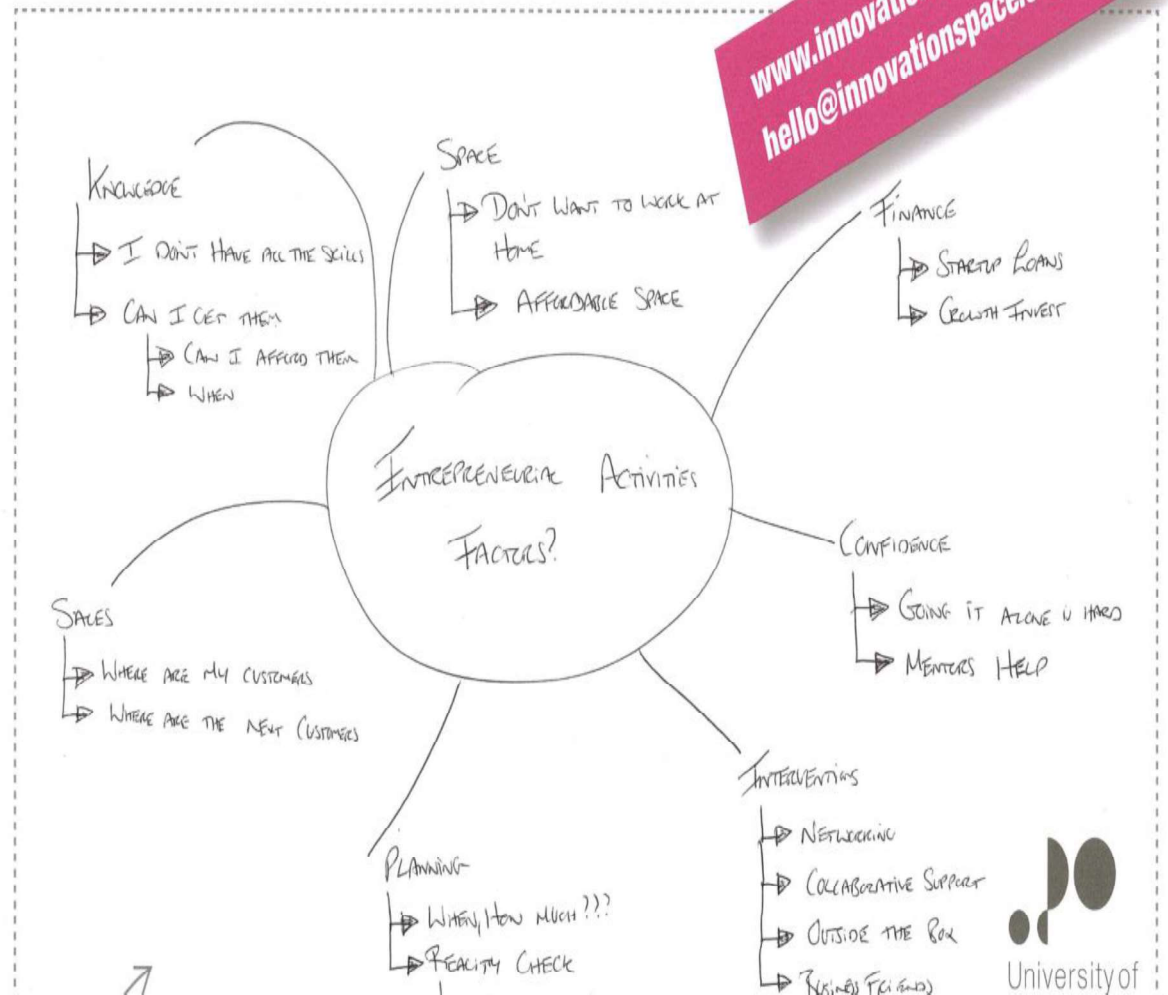
Figure 26: Example 9 Participant 24
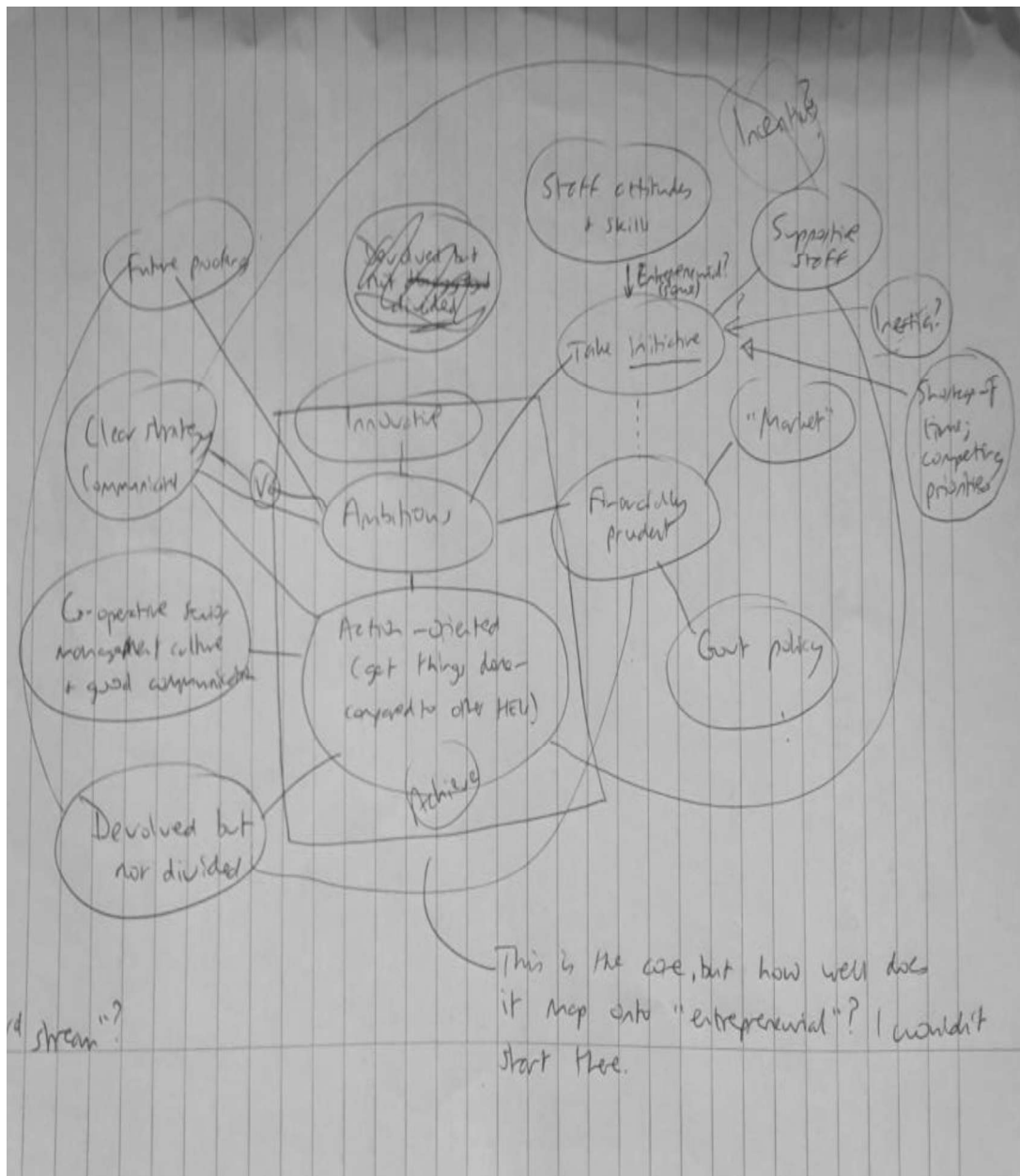
Figure 27: Example 10 Participant 6

440

441
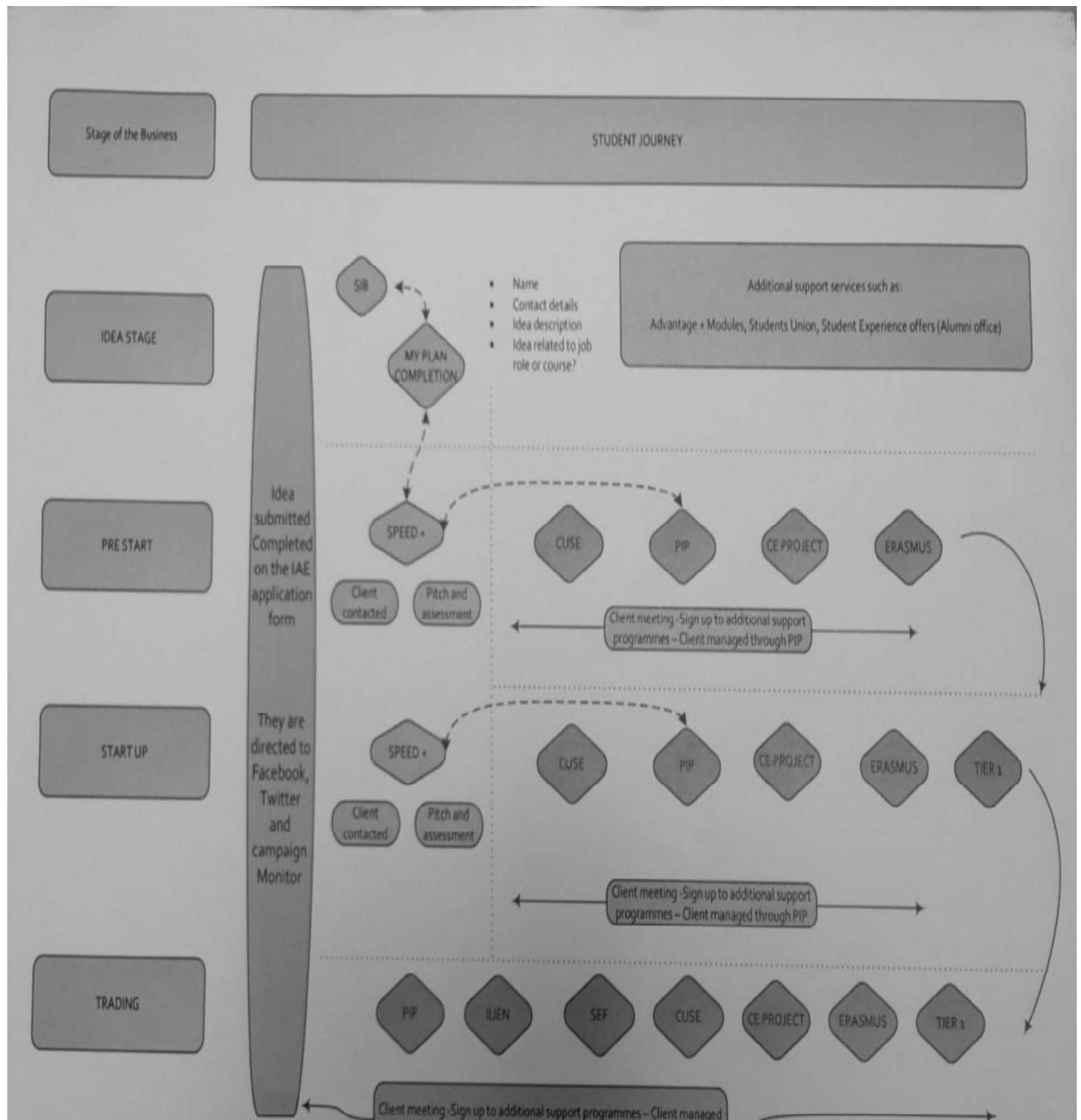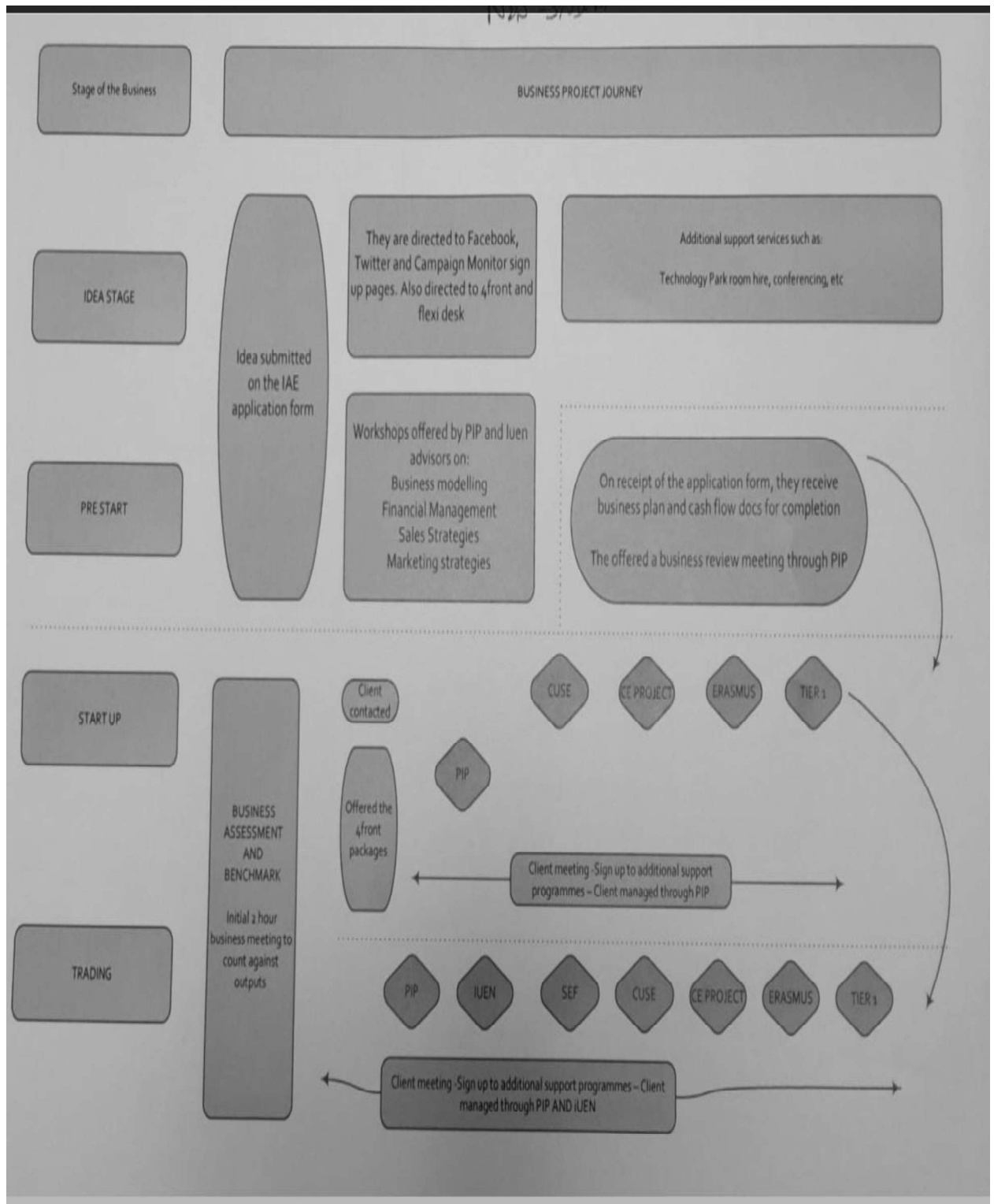
Figure 28: Example 11 Participant 9

Appendix 8: Research participation invitation

Dear Sir/Madam,

I am Kafayat Lamidi a doctoral student at Huddersfield Business School.

My research title is 'an investigation into the determinants and characteristics of Entrepreneurial University: Evidence from British Self-Defined Entrepreneurial Universities'.

My Ph.D. focuses on Entrepreneurial University. I am particularly interested in understanding the determinants influencing the development of Entrepreneurial University within the UK higher education context with emphasis on self-defined entrepreneurial universities.

I intend to do interviews with key informants, particularly targeting those whose responsibilities are to inform strategic decisions such as Director of Enterprise or Centre related Director; Deans of Business Schools; those whose responsibilities are to lecture entrepreneurship and/or enterprise related subject and those whose responsibilities are to provide support for enterprise or entrepreneurial activities.

Based on the above, you have been purposely selected as an interviewee 'due to your rich experience working in the UK entrepreneurial higher education context and ability to provide helpful insights from your role as (insert role) at the (insert University's name). Thus, I request for 30-50 minutes' audience with you, preferably between the months of January and February 2016.

I promise that the information collected will be protected in accordance with my University's ethics policy.

I look forward to hearing from you soonest.

Yours Sincerely,

Table 23: Manual coding in Excel spreadsheet

Determinants	Strategic Staff	Total N of participants saying it multiply by Total N of participants in the Group divide by Total N of project Participants	Academic Staff	Total N of participants saying it multiply by Total N of participants in the Group divide by Total N of project Participants	Enterprise-related Support Staff	Total N of participants saying it multiply by Total N of participants in the Group divide by Total N of project Participants	Total N of Participants responded in all groups	% of Total of N of Participants responded
External (Competitive Environment):								
Brand Awareness	6	10	2	10	2	10	10	100%
Market Orientation	3	5	1	5	2	10	6	60%
Location & Geographical Level Competition	3	5	0	0	1	5	4	40%
Faculty & Course Level Competition	1	2	1	5	1	5	3	30%
Entrepreneurial Opportunity Exploitation & Exploration	6	10	2	10	2	10	10	100%
Immigration Law & Policy	1	2	0	0	0	0	1	10%
Making contacts & Networking	2	3	1	5	2	10	5	50%
External (Stakeholders):								
Collaborators	1	2	0	0	1	5	2	20%
Competitors	2	3	1	5	1	5	4	40%
Customer Expectations, Demand & Satisfaction	4	7	1	5	2	10	7	70%
Funding & Government Expectation	5	8	2	10	2	10	9	90%
Internal:								
Motivational Factors	5	8	2	10	2	10	9	90%
Organisational Factors:								
Autonomy, Freedom, Accountability & Responsibility	2	3	1	5	1	5	4	40%
Collaboration & Co-operation	3	5	2	10	1	5	6	60%
Commitment & Achievement	3	5	0	0	0	0	3	30%
Communication & Consultation	4	7	2	10	1	5	7	70%
Conflict & Control	4	7	2	10	1	5	7	70%
Cross-Disciplinary & Multi-disciplinary	3	5	2	10	0	0	5	50%
Growth, Development & Improvement	5	8	2	10	2	10	9	90%
Historical Background & Track Records	2	3	0	0	0	0	2	20%
Willingness, Fit, Relevance & Balance	4	7	2	10	2	10	6	60%
Organisational Factors (Resaources & Capabilities):								
Entrepreneurial Value	1	2	1	5	1	5	3	30%
Financial Capacity	5	8	1	5	2	10	8	80%
Entrepreneurial pedagogy	0	0	1	5	1	5	2	20%
Physical Resources	5	8	1	5	1	5	7	70%
Role Model	3	5	1	5	1	5	5	50%
Time	4	7	2	10	1	5	7	70%
Human Capabilities								
Individual Capabilities:	6	10	2	10	2	10	10	100%
Background & Qualification	5	8	1	5	0	0	6	60%
Confidence, Ambition & Passion	4	7	1	5	1	5	6	60%
Experience, Expertise & Talent	4	7	2	10	1	5	7	70%
Knowledge Skills & Mind-sets	4	7	1	5	2	10	7	70%
Personality	2	3	0	0	0	0	2	20%
Leadership, Management & Governance	6	10	2	10	2	10	10	100%
Leadership Styles:								
Empowerment & Encouragement	4	7	1	5	2	10	7	70%
Engagement & Involvement	1	2	0	0	1	5	2	20%
Inspiration & Stimulation	0	0	1	5	1	5	2	20%
Organisational Culture & Attitude:	6	10	2	10	2	10	10	100%
Engaging & Open Culture	2	3	1	5	1	5	4	40%
Innovation, Entrepreneurial & Enterprise Culture	2	3	1	5	2	5	5	50%
Team Culture	2	3	0	0	1	5	3	30%
Strategic:								
International	1	2	0	0	1	5	2	20%
National-HEFCE Objectives	5	8	0	0	1	5	6	60%
Organisational Strategy:	6	10	2	10	2	10	10	100%
System & Structure	6	10	2	10	2	10	10	100%
Regional	2	3	0	0	0	0	2	20%

444

Appendix 10: The ethics approved form

University of
HUDDERSFIELD

THE UNIVERSITY OF HUDDERSFIELD
Business School

POSTGRADATE STUDENT / STAFF RESEARCH ETHICAL REVIEW

Please complete and return via email to alex.thompson@hud.ac.uk along with the required documents (shown below).

SECTION A: TO BE COMPLETED BY THE APPLICANT

Before completing this section please refer to the Business School Research Ethics web pages which can be under Resources on the Unilearn site (Ethics Policies and Procedures). Applicants should consult the appropriate ethical guidelines.

Please ensure that the statements in Section C are completed by the applicant (and supervisor for PGR students) prior to submission.

Project Title	An investigation into the determinants and characteristics of an Entrepreneurial University: Evidence from British Universities
Applicant	Kafayat Kehinde Lamidi
Award (where applicable)	PhD
Project start date	10/2013

SECTION B: PROJECT OUTLINE (TO BE COMPLETED IN FULL BY THE APPLICANT)

Issue	Please provide sufficient detail for your supervisor to assess strategies used to address ethical issues in the research proposal. Forms with insufficient detail will need to be resubmitted.
Researcher(s) details	Kafayat Lamidi Postgraduate Researcher Department of Strategy, Marketing and Economics Tel: +44 7432657880 E-Mail: kafayat.lamidi@hud.ac.uk BS1/11

445

Supervisor details	Dr Walter Mswaka
	Principal Lecturer in Business Strategy
	Business Undergraduate Programme Leader
	Department of Strategy, Marketing and Economics
	BS2/42
	Tel: 01484473826
	Email: w.mswaka@hud.ac.uk
Aims and objectives of the study. Please state the aims and objectives of the study.	This study aimed at gaining insights into the nature and understanding of Entrepreneurial University in the UK. To accomplish this aim, two research objectives have

Modified 13/6/12

Business School - Taught courses ethical approval

	been designed: Objective 1: To explore the determinant characteristics of Entrepreneurial University Objective 2: To develop taxonomy of Entrepreneurial University in UK
Brief overview of research methodology The methodology only needs to be explained in sufficient detail to show the approach used (e.g. survey) and explain the research methods to be used during the study.	This is a case study research of self-judged entrepreneurial universities and data collection involves semi-structured in-depth interviews with those who prepared the applications or designated person who is be able to provide information on the subject. Also, to be recruited are lecturers of entrepreneurship or related, Deans of Business Schools where majority of enterprise related activities take place as indicated in the literature and also because they are directly or indirectly involved in the school-based system. The rationale for selecting respondents across various levels is to allow for data triangulation which is an underpinning character of case-based research.
Does your study require any permission for study? If so, please give details	No because sensitive information is not involved
Participants Please outline who will participate in your research. Might any of the participants be considered 'vulnerable' (e.g. children)	Since this is a higher education research, main participants are staff only. In a situation where participants are aware that their University's names may be easily identified there is the possibility for them to withdraw or limit certain information. To gain access to participants' mind-sets, they will be asked to prepare a mind-map/rich picture (applying their own drawing style that they feel most comfortable with) on an A4 paper, which provides a representation of their views on the collection of determinants that interact to influence entrepreneurial actions and developments within their universities. No research will be undertaken with vulnerable people.
Access to participants Please give details about how participants will be identified and contacted.	Participants to be selected using non-probability techniques. For the focus of this study, the criterion and expert sampling; that is, selecting participants applying basic criteria such as at least 3years of experience and expertise within the higher education context to provide information on the subject are considered appropriate. All interviews will be undertaken face to face and it is anticipated that audio or telephone type interviews may be required subject to participants' choice. The interview will be undertaken by the lead researcher within the participants' own offices. But where this is not being possible there would be an arrangement to book small meeting room.
How will your data be recorded and stored?	Audio recording for the in-depth interview which will be transcribed to hard copy. This will be stored on a secure device (K-Drive).
Informed consent. Please outline how you will obtain informed consent.	Email to participants prior to the interview session
survey Confidentiality Please outline the level of confidentiality you will offer respondents and how this will be respected. You should also outline about who will have access to the data and how it will be stored. (This information should be included on Information your information sheet.)	Only the researcher will analyse the data. And only the researcher is allow access to the data and will be stored in a locked cabinet and on the researcher's university K-drive. Except upon request by the supervisors and examiners for transparency in the research process. The confidentiality of the institutions is fully guaranteed. Although their names will be concealed by using pseudonyms such as University A, B, C and so on, but the universities could be easily identified against certain information because currently only 7 universities are

Modified 13/6/12

446

	self-defined as entrepreneurial in the UK. Also, in exceptional circumstances such as in the 'Desk Research' where information about these universities have been obtained via publicly available sources including their official websites, their names may be identified against certain entrepreneurial practices.
Anonymity If you offer your participants anonymity, please indicate how this will be achieved.	For consistency all participants' data will be anonymised. There will be the use of predefined pseudonyms which will be selected by the participants as a freedom of choice.
Harm Please outline your assessment of the extent to which your research might induce psychological stress, anxiety, cause harm or negative consequences for the participants (beyond the risks encountered in normal life). If more than minimal risk, you should outline what support there will be for participants. If you believe that that there is minimal likely harm, please articulate why you believe this to be so.	N/A

Retrospective applications. If your application for Ethics approval is retrospective, please explain why this has arisen.

N/A

SECTION C – SUMMARY OF ETHICAL ISSUES (TO BE COMPLETED BY THE APPLICANT)

Please give a summary of the ethical issues and any action that will be taken to address the issue(s).

Confidentiality- Although universities' identity will be concealed but it is likely for them to be easily identified because the scope of this research focuses on self-defined universities based in England only. However, this will be communicated with the participants.
Anonymity- use of pseudonyms for both universities and individual respondent.

SECTION D – ADDITIONAL DOCUMENTS CHECKLIST (TO BE COMPLETED BY THE APPLICANT)
Please supply copies of all relevant supporting documentation electronically. If this is not available electronically, please provide explanation and supply hard copy.

I have included the following documents
Information sheet   Yes   ☐   Not applicable ☐

447

Consent form	Yes ☐		Not applicable ☐
Letters	Yes ☐		Not applicable ☐
Questionnaire	Yes ☐		Not applicable ☐
Interview schedule	Yes ☐		Not applicable ☐

SECTION E – STATEMENT BY APPLICANT

I confirm that the information I have given in this form on ethical issues is correct. (Electronic confirmation is sufficient).

Applicant name: Kafayat Kehinde Lamidi

Modified 13/6/12

Business School - Taught courses ethical approval

Date:

Affirmation by Supervisor
I have read the Ethical Review Checklist and I can confirm that, to the best of my understanding, the information presented by the Applicant is correct and appropriate to allow an informed judgement on whether further ethical approval is required

Supervisor name: Dr. Walter Mswaka

Date

All documentation must be submitted electronically to the Business School Ethics Committee Administrator Alex Thompson at alex.thompson@hud.ac.uk.

All proposals will be reviewed by two members of SREP. If it is considered necessary to discuss the proposal with the full Committee, the applicant (and their supervisor if the applicant is a student) will be invited to attend the next Ethics Committee meeting.

If you have any queries relating to the completion of this form or any other queries relating to the Business School's Ethics Committee in consideration of this proposal, please do not hesitate to contact the Chair, Dr Eleanor Davies (e.davies@hud.ac.uk) ☎ [47] 2121 or the Administrator Alex Thomson (alex.thompson@hud.ac.uk) ☎ [47] 2529

Appendix 11: Participant information sheet and informed consent form

Participant Information Sheet

Research Study Title: An investigation into the determinants and characteristics of Entrepreneurial University: Evidence from British Self-defined Entrepreneurial Universities

Introduction

My name is Kafayat Lamidi and this research forms part of my *PhD* study at University of Huddersfield. You are being invited to take part in this study. Before you agree to do so, it is important that you understand the purpose and nature of the research and what your participation will involve, if you agree. Please read the following information carefully, and please do ask if anything is not clear, or if you want more information. Contact details are given at the end of this information sheet.

What is the purpose of the study and how will it be carried out?

This study aims to identifying the determinants of UK self-defined entrepreneurial universities.

The research objectives are:
1. To explore the key determinants of UK self-defined entrepreneurial universities
2. To develop taxonomy of factors influencing the developments of UK self-defined Entrepreneurial Universities

The research methodology is case study strategy involving:
1. Analysis of publications and websites
2. Participants diagramming
3. Semi-structured interviews

449

Why have I been invited to take part?

You have been invited to participate in the study because you may be able to provide helpful insights from your role as [role title] based within [school/centre] at the [University Name].

Do I have to take part?

Participation is entirely voluntary. It is up to you to decide whether or not to take part. If you do agree to take part, you will be asked to sign a consent form. If you agree to take part, you may still withdraw at any time, without giving a reason. If that happens, any information or data you have given will not be used in the study.

What will taking part involve?

If you agree to take part, you will choose how you would like to take part in the consent form. Then a brief summary of the questions will be email to you. Also prior to the interview, you will be asked to prepare a mind-map or rich picture (applying your own drawing style that you feel most comfortable with) on an A4 paper, which provides a representation of your view on the collection of determinants that interact to influence entrepreneurial practices or activities at [University Name]. You will be asked to discuss this at the end of the planned interview. The anticipated time for the interview will last approximately 1 hour which will be digitally recorded and transcribed to hard copy. You will be provided a copy of your transcript and be able to provide written comments on this.

Will my participation be confidential?

All information about you collected during the study will be kept strictly confidential. Data will be stored in accordance with the Data Protection Act. The only person who will know about

450

you is the researcher. However, information supplied may be looked at by supervisors and/or examiners for transparency in the research process. All data, whether electronic or paper or in any other form will be destroyed when PhD is completed and when there are no more publications to generate. Also by taking part your data will be anonymised; that is all data will be concealed as far as possible, your name and role will be concealed using pseudonyms. Also, your University's name will be concealed using University A, B or C but it is likely that it may be easily identified against certain entrepreneurial practices based on information obtained through document analysis because the scope of the study focuses on self-defined entrepreneurial universities in the UK only.

What will you do with the results of the research?

The results will be incorporated into my PhD thesis and any academic publications or presented at a conference. Neither you nor your university will be named in the thesis / publications. But your university could be easily identified against certain information in its documents because currently only 8 universities are self-defined as entrepreneurial in the UK.

What happens next?

Thank you for reading this information sheet. If you agree to take part,

There is a consent form to fill in and return (please scan and attach via email).

After the consent form is *returned,* you will be given a copy of the consent form to keep.

At interview you will be given another opportunity to ask any questions you may have regarding the study.

If you wish to complain about any aspect of how you have been approached or treated in respect of this research study, please contact:

My supervisor:
Professor Collins Ntim
Director of Graduate Education
University of Huddersfield
Department of Accountancy and Finance

The Business School
Queens gate
Huddersfield, HD1 3DH
Tel: 01484 471038
Email: c.ntim@hud.ac.uk

Contact for further information

If anything is not clear, or if you want more information, please do contact me:

Kafayat Kehinde Lamidi
Postgraduate Researcher
Tel: +44 7432657880
E-Mail: kafayat.lamidi@hud.ac.uk
Skype: kaffy2012
LinkedIn: uk.linkedin.com/in/kafayatlamidi/en

Appendix 12: Ethical issues arising during the research process

Example 1

> Sent: Wednesday, October 28, 2015 6:54 PM
> To: Kafayat Lamidi U0950092
> Subject: RE: Consent Form + Interview Transcript
>
> Hi
>
> I'd suggest you need to anonymise terms like International Business
>
> Regards
>

Example 2

Tue 15/12/2015 15:04

Dear Kafayat,

Thanks for your congratulations. We are very pleased.

I would be happy to be interviewed in the New Year (in person or by Skype). However, I do not think it would be appropriate to share our actual submission to THE.

I have cc'd S who is the new director of our enterprise centre.

Kind regards

452

Example 3

Thu 17/12/2015 10:54

Dear Kafayat

I can see that you already have agreed to meet with X. To be honest, we'd tell you the same information – we work very closely together. I'm not sure you will gain anything from speaking to me as well. I would suggest that you consider interviewing X and then coming back to me with follow-up questions? I think that would be a better use of the time. Obviously, we need to be a little careful with the information you are provided with. We wouldn't want to be giving away trade secrets…!

Best wishes

Appendix 13: Interviewing

Table 24: Number of participants and the duration of the interview

Participant (P)	Time (minutes)
P1	50
P2	30
P3	70
P4	50
P5	104
P6	78
P7	58
P8	79
P9	67
P10	60
P11	35
P12	52
P13	46
P14	52
P15	68
P16	45
P17	65
P18	30
P19	30
P20	45
P21	65
P22	65
P23	40

Participant (P)	Time (minutes)
P24	65
P25	33
P26	70
P27	45
P28	33
P29	75
P30	49
P31	45
P32	59
Total	1758
Average	54.9375

Appendix 14: Sampling of cases

Table 25: Times Higher Education 2008-2015 shortlisted entrepreneurial universities

No.	Year Est.	Institutions	Bidding Year	Orientation	Pre/Post 1992 Status
1	1858	Anglia Ruskin	2014*	Teaching	Post
2	1966	Brunel	2010	Research	Pre
3	1973	Central Lancashire	2010, 2011, 2014, 2015	Teaching	Post
4	1839	Chester	2013, 2014	Teaching	Post
5	1970	Coventry	2008, 2009 2011*	Teaching	Post
6	1963	East Anglia	2012	Research	Pre (1994)
7	1582	Edinburgh	2011, 2012	Research	Pre
8	1952	Hertfordshire	2009, 2010*	Teaching	Post
9	1825	Huddersfield	2012*	Teaching	Post
10	1907	Imperial College London	2010	Research	Pre
11	1899	Kingston	2014	Teaching	Post
12	1904	Leeds	2008, 2015*	Research	Pre
13	1861	Lincoln	2013, 2015	Teaching	Post
14	1966	Loughborough	2015	Research	Pre (1994)
15	1975	Northampton	2011, 2012	Teaching	Post
16	1969	Northumbria	2015	Teaching	Post
17	1948	Nottingham	2008, 2015*	Research	Pre
18	1096	Oxford	2008	Research	Pre
19	1992	Plymouth	2010, 2011 2012	Teaching	Post

456

No.	Year Est.	Institutions	Bidding Year	Orientation	Pre/Post 1992 Status
20	1869	Portsmouth	2009	Teaching	Post
21	1845	Queen's University Belfast	2008, 2009*	Research	Pre
22	1850	Salford	2008	Research	Pre
23	1905	Sheffield	2013	Research	Pre
24	1796	Strathclyde	2009, 2012*	Technological	Pre
25	1891	Surrey	2009, 2013	Research	Pre
26	1930	Teesside	2010 2013 2014	Teaching	Post
27	1826	University College London	2014	Research	Pre
28	1963	York	2011	Research	Pre (1994)

Legend: This is the list of all self-defined entrepreneurial universities (arranged in alphabetical order) for the NCEE supplement Award (arranged in alphabetical order). The asterisk sign* represents the eight winners of the award between 2008 and 2015 out of which seven were included in this study and one did not respond to participation. These eight winning institutions appear in the recent Times Higher Education Ranking Table. They are among the 70 UK universities in the top 200 for the highest international students (THE, 2018). This implies that the entrepreneurial university is a continuous transformation and demonstrates an improvement in the universities. From the total of 28, 25 are England-based, two in Scotland and one in Ireland. That is, the majority of the shortlisted institutions are in England. This is of significance because thirteen of the cases herein are in England and two in Scotland. The implication is that England has the highest number of universities in the UK followed by Scotland. This provides justification for sampling cases in

457

these two countries. From the fifteen selected for the study, eight are pre-1992 and seven are   post-1992.

Table 26: Diverse characteristics of the selected universities

University	Year founded	University status year attained	Differentiated university status	Size (Total numbers of students' enrolment 2014/15)	Educational orientation	Mission group	Location	Regional environment	Regional population
U1	1796	1966	Pre-1992	14,300	Research-intensive	1994	England	South East	8,634,750
U2	1869	1992	Post-1992	21,625	Teaching-oriented	UA			
U3	1096	1096	Pre-1992	22,348	Research-intensive	Russell			
U4	1952	1992	Post-1992	24,880	Teaching-oriented	UA		East	5,846,965

University	Year founded	University status year attained	Differentiated university status	Size (Total numbers of students' enrolment 2014/15)	Educational orientation	Mission group	Location	Regional environment	Regional population
U5	1858	1992	Post-1992	19,830	Teaching-oriented	Million +			
U6	1828	1992	Post-1992	25,655	Teaching-oriented			North West	7,052,177
U7	1896	1967	Pre-1992	18,920	Specialism	UA			
U8	1907	1907	Pre-1992	16,610	Research-intensive	Russell		Greater London	8,173,941
U9	1831	1904	Pre-1992	31,030	Research-intensive			Yorkshire & Humberside	5,283,733
U10	1825	1992	Post-1992	19,620	Teaching-	UA			

University	Year founded	University status year attained	Differentiated university status	Size (Total numbers of students' enrolment 2014/15)	Educational orientation	Mission group	Location	Regional environment	Regional population
					oriented				
U11	1843	1992	Post-1992	26,600	Teaching-oriented	UA		West Midlands	5,601,847
U12	1881	1948	Pre-1992	31,910	Research-intensive	Russell		East Midlands	4,533,222
U13	1862	1992	Post-1992	25,895	Teaching-oriented	UA		South West	5,288,935
U14	1796	1964	Pre-1992	21,210	International technological-based	ECIU	Scotland	Glasgow	593,245

University	Year founded	University status year attained	Differentiated university status	Size (Total numbers of students' enrolment 2014/15)	Educational orientation	Mission group	Location	Regional environment	Regional population
U15	1582	1582	Pre-1992	28,880	Research-intensive	Russell		Edinburgh	476,626
Total				349,313					51,485,441

Source: Regional Population- ONS (2013); Size- The Complete University Guide (2016).

ECIU- European Consortium Innovative Universities, UA- University Alliance, U1- University 1 and so on. The Pre-1992 Universities were granted status between the 16th and 19th century, i.e. before the 1992 Education Reform and the post-1992 institutions gained university status after the 1963 Robin Report, as well as the 1992 FHE Act, i.e these universities, were founded as part of the Education Reforms to increase the number of the university in the UK.

Appendix 15: The literature review

Table 27: Samples of existing entrepreneurial university components

Author	Clark (1998, 2004)	Sporn (2001)	Kirby (2006)	Rothaermel et al. (2007)	Farsi et al. (2012)	EC & OECD (2012)	Guerrero & Urbano (2012) Guerrero et al. (2014)	Gibb et al. (2013)	Etzkowitz (2004) Ranga & Etzkowitz (2013)
Model	Steering core	Environment	Endorsement	Environmental & innovation network	Mission	Leadership & governance	Internal	Enterprise	Independence
	Funding base	Mission & goals	Incorporation	University entrepreneurship	Resources	Capacity	Environmental	Entrepreneur-ship	Capitalisation
	Academic heartland	Culture	Communication	Technology transfer productivity	Capabilities	Entrepreneur-ship development	Outcomes	Innovation	Dimensions
	Development periphery	Structure	Implementation	Creation of firms	Impeding conditions	Pathways	Outputs		Hybridisation
	Entrepreneurial culture	Management	Encouragement & support			University-business relationships			Reflexivity
		Governance & leadership	Organisation						Relationship
		Networks	Promotion						Functions of systems
		Strategic	Recognition & reward						

Author	Clark (1998, 2004)	Sporn (2001)	Kirby (2006)	Rothaermel et al. (2007)	Farsi et al. (2012)	EC & OECD (2012)	Guerrero & Urbano (2012) Guerrero et al. (2014)	Gibb et al. (2013)	Etzkowitz (2004) Ranga & Etzkowitz (2013)
		alliance & conglome-rates				International institution Impacts			
Lens	Clark (1998) as listed above	Leadership, management, & governance concepts	Theories of entrepreneurship & intrapreneur-ship development	Systematic literature review	RBV	Meta-model	RBV Institutional Economics	Entrepreneurial leadership concept	Triple Helix thesis

Table 28: Scholars who have extended RBV

Factor level	Author (Year)	Publication or book section	Theory	Methodology and methods	Key findings
Strategic actions	Barnett et al. (1994)	Strategic Management Journal	Evolutionary RBV	Analysis of retail banks in Illinois	While these scholars extended RBV with strategic evolution, the evidence shows that the variation in organisational performance can be due to differences in their strategic positions and differences in their competitive abilities.
	Barney & Arikan (2001).	Handbook of Strategic Management	RBV	Review	It proposes that to understand the differences between organisations, there is a need to expand traditional theories (RBV inclusive).
	Koka & Prescott (2008).	Strategic Management Journal		Longitudinal alliance data	The analysis suggests that there is a need for managers to revisit and examine alliance portfolio through strategic and environmental views.
	Venkatraman et al. (2008).	Advances in Strategic Management		Quantitative: 359 packaged	It supports networked-based perspectives of strategy.

Factor level	Author (Year)	Publication or book section	Theory	Methodology and methods	Key findings
				software organisations Time periods 1990-2002.	
	Anggraeni (2014).	Thesis: Bogor Agricultural University		Quantitative multiple case studies: Four organisations with different levels of performance.	It expresses that the management ability to have a clear and joined strategy shape the balance of the strengths and weaknesses associated with the business network.
	Clarke & MacDonald (2016).	Business & Society		Four Canadian cases studies: Partner organisations	In contrast to strategic action focus, there is a shift to strategic interest perspective of partners and partnership organisations.

Factor level	Author (Year)	Publication or book section	Theory	Methodology and methods	Key findings
				Non-governmental organisations Business associations Small and large businesses 47 interviews.	
	Wong (2011).	Journal of Human Resource & Adult Learning	A relational view of RBV	The case study of Li & Fung Group	It confirms the strategic implications of the relational view of RBV. It provides useful experience for organisations to thoughtfully consider their internationalisation strategies.
External resources	Zaheer & Bell (2005).	Strategic Management	RBV	Quantitative data obtained via	It reveals that both a firm's innovative capabilities and its network structure strengthen its performance.

Factor level	Author (Year)	Publication or book section	Theory	Methodology and methods	Key findings
		Journal		Membership Directory (Investment Funds Institutions of Canada 1998) of Canadian Mutual Fund Companies.	Thereby suggesting a need for organisations to build network capabilities.
	Lavie (2006).	Academy of Management Review		Review	It finds that in a networked environment the nature of relationships matters more than the nature of resources.
	Arya & Lin (2007).	Journal of Management		52 not-for-profit networked organisations.	It identifies external resources as the individual, dyadic, and network levels.

Table 29: Scholars who have categorised or expanded CE.

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
Single-dimensional	Corporate entrepreneurial strategy	Ireland et al. (2009).	Mintzberg's (1987) 'five definitions of strategy.	CE strategy	Strategy as perspective and strategy as a pattern.	This meta-analysis of CE models expresses that the components of CE strategy constitute: individual members of the organisation and the external environmental conditions. The elements of CE strategy include the senior management strategic vision, and that the outcomes of CE strategy include the development of competitive capability and strategic positioning.
		Morris et al. (2011).	Unknown			It recognized the CE domains as corporate venturing and strategic entrepreneurship.
		Kuratko & Audretsch, (2013).	Unknown	CE constructs		By synthesising CE domains, it was revealed that CE has the potential to advance international organisations efficiency. It acknowledges the need to explore and

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
						understand the various aspects of CE domains.
	Innovation	Glaser et al. (2015).	Social network	Jensen et al. (2006).	Senior management team	Exploratory innovation is enhanced by the senior team network.
	Corporate entrepreneurial strategy	Lerchenmueller (2015).	Behavioural theory	Entrepreneurial orientation	Organisations	Through a quantitative survey of 110 Service and 111 manufacturing companies, it finds that CE is affected by entrepreneurial orientation via responsive and active sensing. It suggests the need to bind CE strategy within a specific context. Entrepreneurship scholars need to do more research on the service sector.
	International corporate venturing	Naldi et al. (2015).	Stevenson's theory of entrepreneurial management	Zahra et al. (2000).	Organisation & senior management team	SMEs' international venturing is differently influenced by different tenets of entrepreneurial management.

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
	Innovation	Turner & Pennington III (2015).	Knowledge-based perspective	Emergent from collected data	Networks of organisation	Innovation can be improved through a high level of motivation and opportunity for sharing knowledge via an organisational network.
	International corporate venturing	Wang et al. (2015)	Agency	Emergent from collected data	Organisation & senior management team	International CE can be enhanced by aligning top team incentives with stakeholder interests and adoption of top team monitoring mechanisms.
Multi-dimensional	Strategy renewal and venturing	Kuratko & Morris (2018).	CE	Corporate venturing (Morris et al., 2011) Strategic entrepreneurship (Kuratko & Audretsch, 2013).	Ventures (activities)	Through Meta-analysis corporate venturing was typified into internal (activity created inside the firm) & external (innovation outside the firm).

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
	Renewal, venturing, and innovation	Zahra (1996).	Agency	Emergent from collected data	Senior management team	It indicates a causal relationship between CE, managerial stock ownership, and institutional ownership.
		Romero-Martinez et. al (2010).		Zahra (1996)	Organisation & environment	It shows that in an intensively competitive environment, privatization promotes CE.
		Corbett et al. (2013).	Transaction cost economics		CE constructs	By scrutinising current CE literature, it highlights the need for researchers to explore the poorly understood phenomenon regarding 'how some of the most commonly identified forms (e.g. external/internal venturing and strategic renewal) of CE are linked in practice'. Underpinned by transaction cost economics lens to understand the role of 'externalising', the study generates series of questions including what aspects of power and politics lead to spin-

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
						off and for which type of CE characteristics?
		Heavey & Simek (2013).	Knowledge-based perspective		Senior management team & environment	It reveals that level of CE is improved by diversity, number of senior management team and the size of the network.
		Burgers & Covin (2014).	Structural contingency		Organisation	CE is affected by structural variation and moderated by dynamism in the environment and size of the organisation.
		Behrens & Patzelt (2015).	Attention-based perspective		Organisation & senior management team	The analysis of CE projects finds that the management's decision to discontinue CE projects is influenced by the failure of previous projects, hierarchical level, and growth rate of the organisation.
		Hind & Steyn (2015).	Unknown	CE constructs	CE Constructs (strategic	Using inter-rater reliabilities to test the validity of the CE definitions, results indicate a connection

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
					renewal, corporate venturing, and intrapreneurship)	between renewal and venturing.
		Nason et. al. (2015).	RBV	Integrated series of entrepreneurship concepts.	Organisation	This meta-analysis confirms that CE is used for different reasons by different organisations.
		Wei & Ling (2015).	Theories of human & social capital	Zahra (1996)	Senior management team	CE is affected by the attributes of the top team.
		Sakhdari (2016)	Scrutiny of multiple theories.	Contextualized, individualized, social, process, and capability-	Theoretical framing for CE	By critiquing the current literature, it suggests that to understand why some organisations are more entrepreneurial than other more needs to be done on contextualized, capability-based,

Activity level	Main activity	Author (Year)	Theory	Concept	Unit of analysis	Key findings
				based		social, and process-driven models. Thereby advancing CE research.

Appendix 16: Case context for universities one to fifteen

University 1

U1 is one of the seventeen universities in the region and was formerly a College founded in 1796. After Robins Report proposed that colleges must expand and become universities with the right to award their own degrees, U1 was granted University status on the 9th of September 1966 by its Royal Charter. That is, U1 is a Pre-1992 and small-sized research-intensive institution with a total population of 14,300 students' enrollment for the academic year 2014-15. Afterward, in 1985, the University made a substantial development by building a *Research Park* which fosters strong relationships between the University and business sector thereby strengthen its research collaboration arm. The Park houses over 100 organisations and employs more than 2,500 staff who are engaged in research and development activities. The research park provides a structural base for key players in the entrepreneurial ecosystem of the region to explore and access knowledge. As a self-identify innovative research-oriented university, U1 has evolved significantly with a commitment to integrating academic work with entrepreneurial activities (Yokoyama, 2006).

The Table below shows the distinctive set of determinants shaping the key entrepreneurial initiatives and the general entrepreneurial transformation of U1.

Table 30: Prime shaping determinants at U1

Internal	Strategic	External
An entrepreneurial VC and a commercial-oriented Director. A centralised entrepreneurial department.	An integrative research mission with an enterprise image.	A centralised funding absorption. A networked structure of business guru.

476

University 2

Like U1, University 2 (U2) is in the same South East of England region. U2 root goes back to 1869 when it was established as a School of Science and Art to train engineers and skilled workmen. It became an Institute in 1894 then renamed as a College in 1908. After a series of transformation, it gained university status in 1992; that is, U2 is a Post-1992 mid-sized teaching-oriented institution with a total population of 21,625 students' enrollment for the academic year 2014-15. As shown in Table 31, U2 expands its funding base and relies less on government grants.

Table 31: Prime shaping determinants at U2

Internal	Strategic	External
A responsive, flexible and adaptive culture. A cohesive and collegial community. An expanded income stream and a decentralized financial planning. Leadership and management structure.	An inside-out and outside-in strategy. The outside-in strategy requires identifying the needs through a professional service for and the inside-out is making sure that you do something you have the capability from inside your university and the academic staff understand that better, said P17 (L268-271/2016). An integrative research mission and an innovation image.	Extensive external network-based.

University 3

Similarly located in the same region with U1 and U2, University 3 (U3) was founded in 1096 and gained University status in that same year; meaning that, it is a Pre-1992 mid-sized research-intensive University with a total population of 22,348 students' enrollment for the academic year 2014-15. As an Oxbridge university in the UK, U3 is a collegiate research University with a substantial and well-established record of education, research, and international outlook. U3 was ranked number one in the 2016 Times Higher Education World University Rankings, slamming ahead the U.S. based top performer University for the past five years (BBC, 2016b). Table 32 summarises the main factors driving the U3 entrepreneurial edge.

Table 32: Prime shaping determinants at U3

Internal	Strategic	External
Highly autonomous in managerial decision-making. Open culture as a positive and Normative issue as negative cultural elements. Incremental entrepreneurial transformation.	An integration of research-driven agenda with an innovation image.	Students' demand based on differentiated job expectations. Students' population.

University 4

U4 is situated within East of England specifically, within close distance to London. U4 is a Post-1992 mid-sized and teaching-oriented institution with around 24,880 students enrolled for the academic year 2014-15 from over 100 different countries in 10 different schools. In this thesis, U4 is classified as a fledged self-defined entrepreneurial university. U4 in its formative years as Technical College dated back to 1952 for further education purpose only, struggled for recognition in the expansion of innovative higher education sector. In 1969, when it was designated as one of the first three polytechnics in the region, the University was renowned for establishing an extensive network of commercial and industrial partners as shown in Table 33.

Established in 1989, its charter was not granted until 1992 following the enactment of Further and Higher Education Act (1992) when it becomes a 'University'. Until that point in its history as a small college that lacked resources, infrastructure as well as the reputation required of a business-facing and innovative Entrepreneurial University.

Table 33: Prime shaping determinants at U4

Internal	Strategic	External
LMG structure with key entrepreneurial designated roles. Leadership commitment with an entrepreneurial vision that coined the concept of business-facing. Centralised professional staff and decentralised academic staff. Key academics ambition and passion to be entrepreneurial. Diversified income streams.	Business-facing image.	Geographical location. Entrepreneurial networking.

University 5

In a similar location to U4, U5 is in the East of England, specifically in Cambridge. Cambridge is a region that has been confirmed to have similar economic vibrancy and ingredients in terms of knowledge-based activity for the creation of an entrepreneurial city with that found in Silicon Valley (Hodgson, 2015; Huggins, 2008). In 1998, Cambridgeshire was rated number one out of 445 European regions for its rate of scientific publications in both engineering and biological sciences (Barre et al., 1998) and UK's most entrepreneurial country out of 55 countries (Barclays Bank, 1998). Though in a relatively small economy as shown in Table 25 (Appendix 14), Cambridge is Britain's knowledge cluster region (Huggins, 2008) and the leading location for biotechnological businesses in Europe (Cooke & Huggins, 2003). Therefore, as a knowledge organisation, U5 is one of the key entrepreneurial actors fostering local or regional innovation. As displayed in Table 34, U5 operates in a network (beyond local to the global network) that can exploit and utilise new knowledge-base as well as benefit from knowledge spillover.

Established in 1858 as Cambridge School of Art, became a university in 1992, and took its current official University's name in 2005. U5 is a Post-1992 teaching-oriented and mid-sized institution. While U5 is classified as a fledged self-defined entrepreneurial university in this thesis, it self-identified itself as a modern and global University with more than 39,000 students from 177 nations in four continents including its newly opened campus in the heart of London in 2015.

Table 34: Prime shaping determinants at U5

Internal	Strategic	External
A collaborative, collegiate and open culture. A decentralised financial model structure. The sense of commitment and buy-in from leaders, managers, and governors. A flexible and autonomous structure.	An integrative research goal with an enterprise image	Strong externally driven network-the Cambridge phenomenon

University 6

U6 was founded in 1828 as a Diffusion of Knowledge Institution and gained its University status in 1992. Located in North-West England in a vibrant mid-sized city, U6 is a large-sized Post-1992 teaching-oriented University with 25,655 students' enrollment for the academic year 2014-15. North West England is a web of all cultures by having a proper metropolitan lifestyle - Liverpool and Manchester and a rural lifestyle- the Lake District. In the 2013 GVA per head population, North West England has largest percentage increase at 3.4 percent which means that employment rates increased in the region (ONS, 2014b). This regional economy achievement is a collective effort of multiple actors including the U6. U6 is one of the eleven universities (Manchester Metropolitan, Salford, Central Lancashire, Liverpool John Moores, Liverpool, Lancaster, Edge Hill, Manchester, Chester, Bolton, and Liverpool Hope) in North West England.

Table 35 summarises the main factors shaping the entrepreneurial development of U6.

Table 35: Prime shaping determinants at U6

Internal	Strategic	External
Highly driven and self-motivated individuals- both the Head and Manager of Innovation and Enterprise. Newly appointed VC.	Research well aligned with the Innovation and Enterprise strategy.	Strong external connections.

University 7

Located in the same North-West England region with U6 but at Manchester City Centre, University 7 (U7) is a Pre-1992 specialist mid-sized University with a total number of 18,920 students' enrollment for the academic year 2014-2015. Starting in the 1880s and gained University status in the 1990s, U7 historically specialises in Engineering and Mechanical Engineering. The University utilises this unique specialist area to manage and adapt to the overwhelming situation in the HEI sector, in specific the UK regarding the dramatic cutbacks around research funds and change in tuition fee for undergraduate students. The main factors influencing U7 entrepreneurial development are summarised below.

Table 36: Prime shaping determinants at U7

Internal	Strategic	External
An all-inclusive culture. Team effort including buy-in of the top and senior leadership, interested academics and business-oriented experts.	Enterprise-facing agenda integrated with research.	Outsider interaction and networking.

University 8

U8 is a Pre-1992 research-intensive and mid-sized University located in Central London. Central London has the most significant commercial hubs in the UK and the region is one of the three major financial zones across the globe (Mapofworld, 2013). It is globally characterised as an important investment landmark; the region is always filled with viable commercial units. Consequently, having commercially viable centres in the region suggest that U8 is in a well attractive and business-dominated district. As such, the U8 competitiveness mechanism as a world-leading University emerged from its geographical location advantage as summarised in Table 37. For example, U8 was among the six universities shortlisted for the 2010 Times Higher Education Entrepreneurial University of the Year Award. Also, in the 2016 Time Higher Education World University Ranking, the University secured the 8th place based on its teaching, research and international positioning compared to its 10th position in 2015. While this is a significant achievement for the University, going up the ranking in the League Tables shows a proven record of excellence in teaching, research and enterprise activities.

Table 37: Prime shaping determinants at U8

Internal	Strategic	External
Two key group of people- the Deans and the student body. Proven financial capacity through acquisition. Individual behavioural skills and capability. Trusted relationships within the University.	Visible and clear objectives aligned with stakeholders' interests. Research and innovation strategy.	Grounded record of winning large external funding (research grants) for collaborative projects.

483

University 9

Located in West Yorkshire in the Yorkshire and Humberside region of England, University 9 (U9) is a Pre-1992 large-sized research-intensive University. With the population of 5,283,733 in 2013, the region is the 7th largest in England as shown in Table 26 (Appendix 14). Yorkshire and Humberside constitute four sub-regions: East, North, West and South Yorkshire with the West Yorkshire region having the largest populated area. As such, the West Yorkshire region contributes more than 40 percent (2,113,493) of the total population and contributes nearly 45 percent (£37.6 billion) of the total GVA £82.9 billion to regional economic growth in 2006 (Kay, 2009, p. 54). However, in 2007, the Yorkshire and Humberside contributed only 7.2 percent to the UK economy total GVA £87.4 billion in 2007 (Kay, 2009, p. 58). These statistics suggest that while the West Yorkshire economy is outperforming the rest of the three sub-regions, the Yorkshire and Humberside regional economy is underperforming the rest of the eight regions in England, and as such, it is one of the lowest economy contributors (others include East Midland, Northern Ireland, Wales) to the UK total GVA (see also Table 6 in methodology).

Table 38 summarises the main factors influencing U9's entrepreneurial appetite.

Table 38: Prime shaping determinants at U9

Internal	Strategic	External
Internal capacity building. An engaging culture. An enterprise background of the VC. The buy-in and active involvement of the Deputy-Vice-Chancellor and other key management teams. Two internal communication networks-enterprise steering and enterprise action groups.	Enterprise strategy blended with research and innovation.	Extensive alumni base.

484

University 10

Located in the same Yorkshire and Humberside region with U9, U10 was established in 1825 as a Technical College and became a University in 1992. Consequently, U10 is a Post-1992 mid-sized teaching-oriented University. Table 39 provides a summary of the determining factors at U10.

Table 39: Prime shaping determinants at U10

Internal	Strategic	External
Open, can-do, entrepreneurial and team culture.	Triple embedded strategies.	Extensive and well-influential network.
Ambitious leaders and managers (e.g. VC, PVC, and Dean) and enterprising individuals (e.g. passionate academics).		
Appropriate system for managing entrepreneurial activities- CRM.		
Regular planning to ensure the continuity of business and enterprise development.		
Financially-independent.		
Autonomy and freedom in entrepreneurial pedagogies.		

University 11

Dated back in 1843 as College, University 11 (U11) has a long tradition of education provider. From Polytechnic in 1987, it became a University through the 1992 Act under government legislation- University's Instrument and Articles of Government. Located in England at the heart of West Midlands, U11 is a leading UK modern, large-sized teaching-oriented University with over 26,600 students for 2013/14.

With a total population of 5,601,467 in 2013 (ONS, 2013), West Midlands is a densely-populated region but with high deprivation districts including Coventry, Stoke-on-Trent, and Birmingham. However, with some very affluent attraction sites such as the National Exhibition Centre located in Solihull, the West Midlands region has attracted income worth of £20 billion for the economy (Medland, 2011). Among the nine universities (Aston, Birmingham City, Birmingham, Coventry, Keeley, Staffordshire, Warwick, Wolverhampton, and Worcester) in the region, U11 has developed a great reputation for enterprise within the UK Higher Education Sector. Achieving successive awards such as THE EUYA and the Midlands Innovative University of the Year for an enterprise which recognises entrepreneurial strengths and commercial acumen of the University in the region has assisted in creating this reputation. In both cases, the awards reflect the business talent and innovative culture of the University.

Table 40: Prime shaping determinants at U11

Internal	Strategic	External
Business-like and entrepreneurial culture. Radical transformational change and restructuring. Entrepreneurial pedagogy. Self-reliant and self-sustaining of finance and funding. Dedicated groups- Business Advisory, Enterprise and Entrepreneurship, and Enterprise Champion groups. Internationally-oriented leadership (e.g. the VC and PVC for	Enterprise-driven is reflected in University's DNA. Enterprise agenda informed by the HEFCE's requirements.	Niche operation focusing on the specific sector-innovative SMEs.

internationalisation).		

University 12

Located in East Midlands, University 12 (U12) is a Pre-1992 large-sized research-intensive University. Founded as a College in 1881, it was granted a Royal Charter and became a University in 1948 being able to award a degree in its own name. U12 continues to grow and focuses on developments establishing China, Malaysia, and UK campuses with increase in student population from 43,765 (UK 33,369; China 5,848 and Malaysia 4,548) in 2013/14 to 43,893 (UK 33,197; China 6,031 and Malaysia 4,665) in 2014/15. The establishment of campuses in foreign countries reflects U12's open innovation approach. The entrepreneurial ambition of the UK-based campus is rooted in the background of the University, winning and achieving prestigious awards such as Queen's Award for Enterprise for the first branch campus of a British University established outside the UK, Queen's Award for Industry (International Trade) recognising its innovation in establishing overseas campuses and becoming one of the first leading universities to win THE Supplement EUYA. This consistent recognition and global-based approach have raised the entrepreneurial reputation of the University. Table 41 provides a summary of the University's main determinants.

Table 41: Prime shaping determinants at U12

Internal	Strategic	External
Key influential individuals (Entrepreneurial VC and Head of Technology Transfer). An entrepreneurial culture, openness to opportunities and risk-taking. The flexibility of the curriculum and flexibility of the academics selling and commercialising their own research and activities. Self-finance.	Knowledge transfer agenda with research strategy. National enterprise challenge policies.	The legislative framework for setting up commercial businesses. Highly networked.

Staff lengthy institutional experience and involvement.		

University 13

Located in South West England, U13 is a post-1992 teaching-oriented and large-sized University with 25,895 total students' population in 2014/15. A summary of its main determinants is provided in Table 42.

Table 42: Prime shaping determinants at U13

Internal	Strategic	External
Social enterprise and collegiate culture. Top-down and bottom-up resourcefulness. Leadership and management buy-in.	Integrating value creation mission with research and innovation.	Multilevel influences. Location largely characterized by small and micro firms.

488

University 14

U14 was founded in 1796 and received its Royal Charter in 1964 as one of the first UK technological universities. Located in Scotland, U14 is a technological-based mid-sized Pre-1992 institution with more than 20,000 students. In accordance to the ONS (2013) statistics, as at 2013, by a total population of 5,295,403 Scotland is the second largest region in the UK after England (53,012,456). Subsequently, the region is also the second largest economy in the country with a total of £117 Billion GVA (ONS, 2014a). With the strong backup of business and political environment, Scotland's diverse economy encourages entrepreneurship development and as such considered as a gifted area for commercial investments (Scotland, 2016). However, the long-term economic achievement of the region is endangered by the Brexit's impact (BBC, 2016a). Table 43 is a summary of its main determinants.

Table 43: Prime shaping determinants at U14

Internal	Strategic	External
An open and innovative culture that encourages experimentation. Commitment and buy-in from leadership and management - inclusive of University Principal.	SME strategy incorporated with research and innovation edge.	The entrepreneurial ecosystem of Scotland driven by the Scottish government. University Innovation Fund priorities. Extensive contact with Local entrepreneurs.

University 15

Located in the same region with U14, U15 is a Pre-1992 research-intensive and large-sized University with 28,880 students. Given the institutional status of U15 as a large research-intensive institution in the region, its entrepreneurial activities are more focused around spin-out than students' business start-up. Table 44 summarises its main determinants.

Table 44: Prime shaping determinants at U15

Internal	Strategic	External
Entrepreneurial departments.	Innovation agenda wedged research strategy.	Government funding.
Flexible and creative culture.		Entrepreneurs' network.
Long-term planning and support system.	A garbage can model.	
Multi-disciplinary research.		

Appendix 17: External funding

Table 45: England and Scotland grant and funding allocations for 2016-17

University (U)	Teaching	Research	Knowledge exchange	Total
U1	8,747,890	14,940,182	2,850,000	26,538,072
U2	12,911,228	5,626,493	1,550,358	20,088,079
U3	14,527,952	142,683,946	2,850,000	160,061,898
U4	10,588,454	3,927,052	2,850,000	17,365,506
U5	10,732,569	2,185,729	2,850,000	15,768,298
U6	14,210,888	3,830,618	1,784,526	19,826,032
U7	11,282,342	4,095,563	1,611,864	16,989,769
U8	29,152,107	94,304,659	2,850,000	126,306,766
U9	27,543,416	44,274,476	2,850,000	74,667,892
U10	9,744,198	4,898,329	976,481	15,619,008
U11	14,650,129	3,260,825	2,815,816	20,726,770
U12	29,699,935	49,277,922	2,850,000	81,777,857
U13	17.914,614	8,258,631	1,787,157	27,960,429
U14	66,723,566	22,183,000	1,124,000	66,723,566
U15	64,505,681	87,043,000	1,397,000	152,945,681
Total	325,020,355	490,790,425	32,997,202	

Appendix 18: Coding for each determinant

For clarity on how codes were generated, to enhance quality and transparency of the research, Tables 46 to 58 visualise the phase 2, 3, and 4 coding process for all the 13 key determinants displaying the grandchild, child and parent nodes with comments canvased on the data. In contrast to the European framework, the Tables and discussions canvassed within are crucial to this thesis because they highlight and explain the emerging issues for university leaders, managers, and governors to consider in the pursuit of entrepreneurialism. However, Chapter Seven provided an in-depth discussion.

Table 46: Coding for leadership, management, and governance (LMG)

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Our Vice-Chancellor is very **approachable**; he **leads by example** and empowers his staff.	Approachable Leads by example Empowers	Empowering and encouraging	LMG Behaviour
Our Vice-Chancellor has a **can-do attitude** and empowers attitude which **helped me** blossom.	Can-do attitude Helped me		
I **encouraged** her to go on a course, an Association of Business Schools (ABS) little course kind of seminar meeting.	Encouraged		
You must let people **set their own agendas** then	Set their own agenda		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
you guide them in terms of strategy.			
You need to have a leader who will empower and who **understands** the value of an entrepreneurial university.	Understands	Knowledgeable	
A good leader will **motivate** the staff. If you think about this, systematically, knowing how will I **measure** it? How will I **reward** it? How will I **monitor** it? Then you know what is in for the staff.	Motivate Measure Reward Monitor	Motivating and negotiating	
He **rewards** and **recognises** performance in terms of **recognition**.	Rewards and recognitions		
Without being exploitative, staff should **feel happier** in their jobs, more empowered, and then they can try new things.	Feel happier		
The Vice-Chancellor has said in his report "**well done** we have won this, **thank you...**"	Well done and thank you		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
They will not let me spend it just willing knitting but instead of saying no to me **I will let them know** that look I want £2 million to spend to upgrade this building for the next say few years and this will be important for our students, staff and such others.	Let them know		
The most important issue is the **actual commitment** of the Vice-Chancellor and the senior team; I include myself in that. Most senior members of this University are **committed** to these types of work and that is laid out in a lot of detail in our corporate plan.	Actual commitment	Committing and engaging	
At core to all these things is giving them the opportunities and if you are reasonable and **engage** staff in dialogue, the leader will be enterprising.	Engage		

494

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Our Principal is **quite keen** on enterprise and entrepreneurship making sure that it is one of the main priorities.	Quite keen		
He is not unapproachable in any way and he **listens**.	Listens		
We had a new VC who is **much more engaged** and **very keen** to see enterprise included in everything we do.	Much more engaged and very keen		
He is **engaging** with key stakeholders and others. So, at the senior level, the evidence is clear.	Engaging		
As a leader, you create the mindset of the workforce; you **stimulate** the vision that you are trying to put out there to address the needs.	Stimulate	Inspiring and stimulating	
We had a Dean who was very enterprising herself and was a **source of influence** and inspirational. She made the idea **appeal to me** and I	Source of influence Appeal to me		

495

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
started building interest in that because she was doing something on the entrepreneurial university by then.			
We have a Principal who has a **keen interest** in being able to enable and drive enterprise and entrepreneurship. So, at this University, it comes from the **top down.**	Keen interest from top-down		
My Deanery role means that I am **responsible and accountable** for the **growth and prosperity** of the School here within the University.	Responsible and accountable Growth and prosperity	Enhancing and monitoring	LMG Roles
Accountability is very important because I cannot take the **authority** and not have the accountability. For every entrepreneur, you need to have both responsibility and accountability.	Authority		

496

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
My Pro-Vice-Chancellor role means **I am part of** the corporate management team and within that, I have responsibility **for entrepreneurship** across the Institution.	I am part of Responsibility for		
We should be **free** to do what we think we need to do but accountable is not there at the same time.	Free		
We quite have a lot of **autonomy** and pursue a lot of things ourselves.	Autonomy		
If you cover your costs and salary you can get a lot of **freedom**.	Freedom		
Any of the works we did we do have **permission** for them.	Permission		
Quite often to make the vision happen you need to have the networks to **champion** it. Whether externally or internally by **advocating** for what you are	Champion Advocating	Championing and delegating	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
doing.			
He **sets the tone** across the top management team and in the department as well. So, I think undoubtedly leadership has a role.	Sets the tone		
A lot of leaders struggle to **release power** say you try and then not get involved.	Release power		
Fortunately, the Vice-Chancellor himself his being keen in **championing** of things like Postgraduate Medical School and the Medical Technology Campus.	Championing		
You can then **criticise** them if they **try**.	Criticism Try	Experimenting, executing, judging and changing	
The leadership that allows us to be **innovative** and encourage others.	Innovative		
He then **changed** and **changed** it to get key ideas together then went back to **re-edit** it before **going to** the board of governors.	Changed Re-edited Going to		

498

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It may or may not work and that is part of entrepreneurial leadership as they are willing to put their **hands up** if it does not by saying OK we will try to **make a difference**.	Hands up Make a difference		
You can only be an enterprising leader in a university if you have a leadership that is **willing to accept the risk** that comes with that.	Willing to accept the risk		
You let the people come up with their own **ideas**.	Ideas		
My staff is encouraged **to find solutions**. I am quite happy and interested to know what the issues are but also **to bring solutions**. This allows them to act professionally and give them a degree of autonomy to **make things happen.**	Solutions Make things happen		
The most skills-set that must do with this leadership is the	Providing initiatives	Resourcing and recruiting	

499

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
opportunity in providing initiatives to help others to lead and the exploitation of options. Also, leadership to be able to **identify the right personnel** within their own organisation by encouraging people to become leaders.	Identify right personnel		
So, you need the right person to balance that.	Balance		
As part of our structural change is that we are **recruiting** an Associate Dean who will have responsibility for enterprise and commerce.	Recruiting		
I **sorted for grants** rather than expecting the University to give me the money. Even though the University could have paid for the re-development of this building, I did not initially go internally to look for that money.	Sorted for grants		
We put and deal together with the Principal on a	Discuss	Consulting and communicating	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
quarterly basis to discuss the nature of things; what we need to move forward, what we need to remove or potentially need to re-work with changing and upgrading. This is important, and it requires engagement, needs focus and then takes that forward on **an action base level**.			
Communication is quite quick and we kind of know what is going to some extent. That goes down to the level of the Deans themselves you know we **meet** once in a month depending on our diary commitments for a tea and cake, we just **chat** about things on our minds which might not be a **formal meeting**.	Communication Chat Formal meeting		
Everyone is playing their parts and all **talk** to each	Talk about		

501

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
other. For example, through the Enterprise Steering Group and the Enterprise Action Group we all set tables, sit around and **talk about** what we are doing and where we are going from there. So, it is like a joined-up thinking and **talking**.			
He gets those **meetings**, **invites** everyone, and sends **regular emails.**	Meetings Invites Regular emails		
They do try they have the Business School Day where they **put everybody together** to try to engage the staff, **update** them on what is going on. I think we need more engagement, more **departmental meetings** even at the level of the departments to find out opportunities for collaboration or cooperation	Update		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
between the staff.			
All the Deans are members of the senior management teams and we **report directly** to the Vice-Chancellor.	Report directly		
I think he kind of has a clear strategy that is **well-communicated,** and I think he must take a lot of credit for that.	Well-communicated		
We have completely flipped that now in the last year and make it an **inward dialogue**.	Inward dialogue		
We are crowd**sourcing information**; we are sharing and dissecting that between us.	Sourcing information		
I am part of the senior management teams along with the Directors and things have been getting on very well **working together**.	Working together		
At core to all these things is giving them the	Dialogue		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
opportunities and if you are reasonable and engage staff in **dialogue.**			
I think it is about the **messages**; the Vice-Chancellor does a lot of crossing **road-shows** where he calls us in and gives **presentations** to staff members.	Message Roadshows Presentations		
I review information for new opportunities daily and **decide** which one we could go for.	Decide		
For me, it is important to go around and to **talk to staff**, **talk to students** and encourage them to find solutions.	Talk		
The Vice-Chancellor **consulted** with the **senior management team** and **consulted** with **staff visiting across** several times between our three campuses and even gave	Consulted Visiting across		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
presentations.			
I think we have **access** to the Vice-Chancellor when we need him. For example, I meet with him on a one-to-one basis when I need to and so are others as well.	Access		
Managers may not necessarily label themselves in that way but often they are very good at **finding creative solutions** and so on and that is what kind of help to get them into the positions that they hold.	Finding creative solutions	Creative and innovative	LMG Styles
He said, 'off you go, get a blank sheet of paper do what you **think** is right'.	Thinking and inking		
He is very proactive about enterprise and the VC understands the value of **coaching** and **teaching** it.	Coaching and teaching		
Its process is designed to get the **best out of** people.	Best out of		
We saw her doing this and doing that and we see her as	Make change		

505

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
a role model. She did try to **make a change**.			
There was a very **aggressive and autocratic** bullying approach from the top. So, that makes the people keep their heads down, it was kind of do not look up you know.	Aggressive and autocratic	Autocratic leadership	
That is, you cannot be a **micro-manager**.	Micro-manager		
The managers are winning the battles and managers manage funny enough, and their ideas of management are **control**. So, innovation goes out of the window.	Control		
She started her own **business** []. Her business was about getting the youth to do stuff and then create different sort of things just to get them working and thinking about their future and that sort of business was inspirational to our students.	Business	Business and market leadership	

506

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
He is very sharp, and he is very **business-like**.	Business-like		
The Chancellor was a **businessman** too and he has retired now, he used to run a series of businesses over the years.	Businessman		
We innovate to create opportunities in taking advantage of being a **market leader** in our sector, the higher education sector.	Market leadership		
This is to ensure that everything does **not revolve around one person**.	Not revolve around one person	Collaborative leadership	
I think there are two things that are important. One is I think there is a relatively **cooperative** approach and **collaborative** approach and most appropriate senior management and that are partly reflected.	Cooperative and collaborative		
The most critical thing within an organisation is that some	Delegating		

507

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
people try to do everything themselves without delegating; not allowing other people to take on a leadership role.			
I am quite sceptical about the roles that leaders play quite often. For example, some people say very nice things about what I have achieved as the Dean. So, I say well it maybe **we have achieved.**	We have achieved		
I mean it is very **democratic management** styles that are used here. It is not that you must do this and that.	Democratic	Democratic leadership	
It is the right thing to have a **Commercial Director** with **vision** and not just a money person but an **entrepreneurial person** to drive the commercial side.	Commercial Director Vision Entrepreneurial person	Enterprising and entrepreneurial leadership	
In terms of his **enterprising nature,** he said: "You have	Enterprising nature		

508

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
to do it in that building in there and go and find the money to do it".			
I mean he is **good** and for any institution to have such **enterprising leader** is **great**.	Good Enterprising leader Great		
I have the support of an **entrepreneurial Vice-chancellor** and I have the support of a very **entrepreneurial Head of Technology Transfer** for the University.	Entrepreneurial Vice-Chancellor Entrepreneurial Head of Technology Transfer		
It is about making sure that every level of management is represented by **an enterprise leader** and that is going to be key to our future in terms of resources and opportunities.	An enterprising leader		
I think our Vice-Chancellor is well-respected and is an **entrepreneurial thinker**, he is very entrepreneurial in a way that he observes. He	Entrepreneurial thinker		

509

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
is a very bright man and very good at looking at opportunities around.			
The Vice-Chancellor comes from the Scottish Enterprise. So, he has an **enterprise background**.	Enterprise background		
Our **approach** and our **attitude** make us entrepreneurial.	Entrepreneurial behaviour		
Our University benefits from having an **extraordinary entrepreneurial leader** and that is our Principal or Vice-Chancellor if you like.	Extraordinary entrepreneurial leader		
The governance here is quite supportive. Many of the governors are in business themselves. So, they are very **supportive of being enterprising**.	Supportive in being enterprising		
If things go wrong is **my fault** I suppose is one way to put it. But it is about making sure the School **works well**.	My fault Works well	Responsive and responsible leadership	

510

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
We are a charity we **cannot go away from** our traditional roles, but we must **still be responsible** for this.	Attach Awareness		
I have been trying in a leadership sense to develop that programme for **up to five years** to get us to open some of the supply chains to micro and project start-ups companies.	Strive		
His overall vision for the institution in terms of what he **can do**. How he can do it, what he **can deliver** and what he has been delivering already for several years within the University through CEO of the Technology Park and other things.	Action		
I do think in the case the Vice-Chancellor, obviously, some people say his major **inspire decision** was for me to be Dean. He **cares**, he is	Imagination Cares		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
a very unusual man let me put it that way.			
I think it is a **transformational** appointment.	Transformational	Transformational leadership	
They make some big **changes** and they have a lot of good approach towards those **changes**.	Changes		
She lost the battle because of the Director of Estates, the Finance Director; they all said it will be **too expensive** to do. So, she immediately came back to me and down to our **costs and benefits analysis** as opposed to building a credible story analysis.	Costs and benefits	Transactional leadership	
If you give them rewards for **keeping costs down** how do you expect them to say is a better story opening these supply chains to support our own organic growth.	Keeping cost down		
He has a **vision** for what he	Vision	Visionary leadership	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
wants to do with the University; he is very clear on how he wants that to be delivered.			
I explained **my vision** and model to him which was about collocation of businesses and collaborations and research partnerships.	My vision		
You do not sell a product you sell the benefits and a **good visionary leader** can sell that. I think selling the vision is important because you are selling your agenda; you are selling your ideas and is a vulnerable thing to say for a leader this is what we are doing.	Good visionary leader		
When we agreed to do that with let say £25 million. Before the work commenced, he **sets the challenge** that he wants the University to get the money to pay for it	Target		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
before it opens in order not to owe the debt. He **sets** his word.			
My vision and the other thing I think is important is having individuals that can see or can make connections where others do not see.	My vision		
The Vice-Chancellor is very keen that overall all the Heads of Department **must have a** doctorate which we have that going in the School here.	Must have		
It is having a Vice-Chancellor who is also **visionary and committed** to this agenda.	Visionary and committed		
As a leader, you need to have a workforce that is willing to act on your vision but if you are a good leader you will **sell that vision** to them.	Sell the vision		

Table 47: Coding for organisational culture and attitude (OCA)

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I mean what are the aims of your organisation? How **open** are they to being entrepreneurial?	Open	Engaging	Open culture
In our University, the staff members are **flexible** in deciding how they teach and what they do in the classrooms.	Flexible		
I think the keywords would be **flexible and adaptable** because the difference between us and larger universities is that when somebody comes to us with an idea and ask us 'do you think your University can do this?' We can probably decide within a short time whether the University can do it. This is because our **structure** is small, and our management team is small, and we are very **open to new ideas** whereas if you go to bigger universities with more people, more politics, more committees to go through and their financial **structure and procedures** are more rigid. So, is harder to make decisions or do things so quickly. So, adaptable and flexible are my keywords.	Flexible and adaptable Open to new ideas Structure and procedures		
I think **structures** are important to an extent, but I do come back to the fact that if you have	Structure		

515

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
the right people on the right coach. Sometimes **structures** are there for governance reasons.			
If you talk to over half of the academics, staff, and students they would understand that there is a chance that if they have an idea, it could be **run through the system** without falling in the dead water.	Run through the system		
It is more of **an open culture** but not completely open culture. Within the department, I think it is open but between the departments, I do not think is open.	An open culture		
We also encourage students to **engage** in projects by doing stuff.	Engage		
Underline these there is a golden thread which is the **engagement** with the global community in terms of what the key outputs of the University is either going to be, is it graduates or research.	Engagement		
I think another thing is about openness. So, **encouraging openness** is another very important thing.	Encouraging openness		
People have varied conditions of learning and in many ways, we try to dis-condition them and try to open their **acceptability** to some of our approaches.	Acceptability		
I put down interventions which are a kind of	Support		

516

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
support structure. This includes getting people together which is also part of confidence development through basic networking, collaborative support, helping the individuals to understand what sort of supports are available including building contacts.	structure		
In the **structure** part, they influence all staff. So, it is **an engaging culture**.	Structure An engaging culture		
I think the **structure** is important. In a lot of universities, research and enterprise are separate. So, research comes under one **structure silo** and innovation or enterprise on another.	Silo structure		
There is no point about **structure not allowing** us to be doing what we should be doing. If it is, then we **change the structure** and we had done that before and will **continue to do that**. We benchmark ourselves, we compare ourselves, we look at what we try to achieve and if it is not working **we change it**. If it can be done better **we change it**, we are **not welded to the structure,** but we are wedded to the outcomes and the ambition of the University.	Structure not allowing Change the structure Continue to do that Not welded to the structure		
One of the things we put in place and that is	CRM system		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
extremely useful is that we have the customer relationship management (**CRM) system.** So, that is important as you can see the full extent of the business you work with, type of businesses you work with and the type of relationships you have.			
Support staff has come up with **new procedures** and have optimised things to improve efficiency and to improve the students' experience.	New procedures		
I think you can set up a **system and process** to encourage people to pick up research and what is happening around the University and then commercialise that and set it up.	System and process		
One example of these as I mentioned are the courses we run where we now have **structures and systems** of courses in place to do what the university want.	Structures and systems		
I think we have no complaint so ever and that is part of the reasons we have succeeded so well having a good **structure** above us which kind of **support** us in the initiatives that we put in. As we are part of the Careers Centre ultimately, we will follow the management of the Careers Centre.	Support structure		
There are always going to be **policies,**	Policies,		

518

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
processes, and procedures for institutions and as the higher education, we breathe in bureaucracies and we breathe in processes.	processes, and procedures		
We **adapt policies** to do something we want and try and help move these new initiatives forward.	Adapt policies		
I think structure is often used as the reason why we cannot do things. So, business should dictate the structure and the system and not the structure and system dictating for the business. An entrepreneurial institution or organisation always look and put at the centre the core business not the structure and the system. [] They would not do business on system and structure that does not allow them to do it. So, they will **change** the **structure** or **system** and **processes** or a combination of both.	Change structure, system, and processes		
You know, if you are trying to be innovative and encourage others, you need to be prepared to make changes; **changes to regulatory structure and rules** to try to facilitate those developments.	Changes to your regulatory structure and rules		
The enterprise must be the core of what is called the **belief structure** of the university.	Belief structure		

519

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
We are driven by **process and procedure** circumstances.	Process and procedure		
You also must be **open-minded** enough as an institution to be **able to accept** there are benefits in trying out things.	Open-minded Able to accept		
The way we try to engage is quite an **open-door policy** allowing the individuals at any stage of their development on their entrepreneurial journey to come to one set of the point which is our Enterprise Hub and Enterprise Team.	Open door policy		
The culture is also **positive** which I think is influencing my personal drive for and interest in entrepreneurial activities.	Positive		
They are **rewarded** with the carrots through **recognition** in the ways people engage.	Appreciation		
I would say it is **open culture** because on the students' side the culture is **open to** entrepreneurship.	Open culture		
One of the determinants is to ensure that the door is always to be **pushed open** and opportunities to be taken.	Pushed open		
I think it is often described as **an open culture**.	An open culture		
Being entrepreneurial is also being honest, prominent, **open and transparent**. It comes	Open and transparent		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
back to **being open and transparent** so that all students and staff can buy into it.			
I think that means there is a strong **culture of collegiality**, a strong **common theme** of 'making things happen' and **working closely** with all our stakeholders. Whether you are a receptionist to your Professor, to your Dean, or to your Vice-Chancellor there is the 'United to Succeed Phenomenon'.	Culture of collegiality	Collegiate team	Collaborative
It is **'our University'** and everyone is part of our university but when you start talking about 'their University', there is a kind of automatic detach from the fact that you are part of a brick and from the United to succeed and therefore the accountable, responsible or what we mean by achievements will not flow.	Our University		
It is **collaborative**; there is a good working relationship between all the faculties and the support services. I mean we are a big University and we work hard over several years to create that sense of close working.	Collaborative		
Our can-do attitude culture is if we are meeting and there is a **common thread** to what we are looking at and there are mutual benefits of working together we will look at a mutual way to make that work.	Common thread		

521

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
If you have an **open and collaborative culture,** then you are enabling people to work together; you are encouraging a **cross-university working** and you allow people who may not necessarily be the senior team post to get involved in some **cross-university projects** and maybe they will have the ideas and look for others who might want to get involved as well.	Cross-university working and projects		
It would be a university that **links well** with its faculties, particularly its Business School and has a strong presence of enterprise on campus.	Links well		
…creating initiatives that bring **multi-disciplinary teams** together in very imaginative ways to **work together** is being enterprising because you create new ideas and the **multidisciplinary** concept is the **new way of** working.	Multi-disciplinary teams Work together New way of		
How can **we** do it? Rather than 'you cannot do it for the following reasons'.	We		
I think the culture is more than recognition but also it is more about a **team culture**.	Team culture		
The culture is very **collaborative,** and I see very little of the kinds of toughness that you will see in other universities though there are some not that much here.	Collaborative		

522

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I would say **team stability** is a significant element for promoting enterprise and could contribute at the national level.	Team stability		
I will say we have a very **collegiate culture**. People help each other here. Other universities may be quite competitive and secretive about their research because they are afraid of colleagues pinching their ideas and publishing it first.	Collegiate culture		
Entrepreneurial culture to me it's being open to change, being open to more innovative ways of doing things by **moving away** from the traditional ways of doing stuff.	Moving Away	Change, creativity, and innovation	Enterprise and entrepreneurial culture
I think we are **moving forward**.	Moving forward		
Adapting to **practices** to meet our needs and taking those **steps forward**.	Adapting practices Steps forward		
The students' attitude is **changing** towards being more entrepreneurial.	Changing		
It is constantly building you know; that is, **going up those steps**.	Going up those steps		
More of the entrepreneurial culture is **embedded in everything**.	Embedded in everything		
I think it is not necessary to be 100 years old, but it is **the way the building is set** and how it **encourages entrepreneurial culture** from	Internal support structure		

523

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
within.	Encourages entrepreneurial culture		
The **social enterprise culture** is a big part that influences everything that we do and when we brand ourselves as an 'Enterprising University' it is very much part of our thinking.	Social enterprise culture		
If you are not very enterprising and you go to a university that has that entrepreneurial culture it might **motivate you in a way**.	Motivate you in a way		
They should be empowered to do that and that makes us have a unique **enterprise culture** on campus.	Enterprise culture		
Integrate enterprise into the **ethos** of the university, into what the drive of the university is, into the **belief** of the university and make sure that they are **coordinated**.	Ethos Belief Coordinated		
You cannot just have an enterprising culture to become an enterprising university although it will still be valuable. So, in terms of culture, it means **empower** staff, allow them the **freedom to try and fail**, to review this in a positive way and **encourage reflection**.	Empower and encourage reflection Freedom to try and fail		
Enterprising universities are **risk-takers**, they are **creative,** and they are **innovative**. But	Risk-takers Creative		

524

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
also, they are **aware** of what the market needs.	Innovative Awareness		
8 years ago, we **developed** a systematic way to help students generate **radical invention and innovation**.	Developed Radical invention and innovation		
With radical innovations, you cannot get the new version from the old one because it is a **jump**.	Jump		
You need to have a leader who understands the **value** of an entrepreneurial university and it took a very long time for that **value** to be seen by people.	Entrepreneurial value		
I consider an entrepreneurial university as the one that acknowledges its current **value** and what the **value** seeks to meet the different stakeholders' requirements.	Value		
It is about **changing and reflecting** and always being **driving the values** that directly relate to and will meet the needs of the community.	Changing and reflecting Driving values		
We have students from different backgrounds, culture and all that **affect the way they think,** and it **can add more interest and value** to the classroom. It can **add more value to the way** you can deliver the topics.	Affect the way they think. Can add more interest and value.		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
	Add more value to the way.		
We recruit in **certain ways** and we look for certain characteristics when we recruit. We look for people who are **optimistic**, people who are **creative**, people who will **clearly thrive** in this type of environment.	Creative		
Part of being entrepreneurial is being a bit **destructive**.	Destructive		
From the University point of view, it does demonstrate that people understand that enterprise and entrepreneurship are particularly the **way of** the University.	Way of		
We are **maintaining and growing** the enterprise culture by having this **golden thread**.	Continuity Golden thread		
By having an entrepreneurial culture student will have to **take more responsibilities** for their own learning instead of just having it given to them like food on a plate. They must become more **opportunity aware.** This is by going out to **finding** information and interpreting it.	Taking responsibilities Opportunity aware Finding		
We have unique **opportunities and risks** that are specific to us we then need to respond to those and create a workforce that can respond	Opportunities and risks		

526

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
to those.			
Right now, the **entrepreneurial opportunity** is in start-ups.	Entrepreneurial opportunity		
The University has several subsidiaries now to **support** the enterprise culture.	Support		
Birmingham has that new and strange material that they paid for which worth trillions of pounds and because they have the right person in the right place. That could happen anywhere that could happen here and suddenly, the agenda **changes overnight**. We will **adapt**, we will **reflect,** and we will **respond** to that opportunity.	Changes Adaptation Reflection Respond		
The entrepreneurial culture is one that is more **creative**, it encourages some of the characteristics of successful entrepreneurs. So, it encourages **opportunity recognition**, it encourages **initiatives**, it **encourages people** to make decisions and follow through with the **actions** that they require.	Creative Actions		
An entrepreneurial culture within the University encourages **creative problem-solving** in all areas of studies and not just entrepreneurship.	Creative problem solving		
The culture within the University is very **innovative** and it is always **seeking the opportunities** by which we **innovate** to	Innovative Seeking		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
create opportunities in taking advantage of being a market leader in our sector, the higher education sector.	opportunities Create opportunities		
The enterprising university is **responsive**, **forward-thinking** and **forward-looking** not just doing the same things all the time.	Responsive Forward-thinking Forward-looking		
…The idea of **improving** what we already have and **constantly looking at** the value of what we have already done or currently doing.	Improving Constantly looking at		
An entrepreneurial university is one that can establish **change**. The one that **changes** in its culture, its surrounding including perhaps the society it works in, change in the students who study there, change in the spirit of the academics.	Establishing change		
We have several quite **innovative approaches**.	Innovative approaches		
They do like **innovative** or they do like **creative** or **risk-taking** or all these different things.	Innovative Creative Risk-taking		
The culture **meets clients' demand**, for example, we try to push students to take up a placement in a Bluetooth company. So, by	Meets demand Career-orientated and		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
encouraging them to take a Year in Enterprise as part of their course is a cultural element of the University. So, depending on who the client is, the culture is **'career-orientated** and **client-focused'** University.	client-focused		

Table 48: Coding for financial capacity (FC)

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I know we came in on a **budget** and of course we worked well with the designs we do not keep changing our minds which **keep cost down** on any building project. But also, putting extra money to get good quality to the finish.	Budget Keep cost down	Economical	Self-sustaining and self-determined
2/3 of the City Centre is **owned by** the University…	Owned by	Possessed	
The Student Services building which was opened last January, we agreed to do that with **let say £25 million**.	Let say £25 million	Investment	
I came up with the idea, proposed to the University, the University liked it and they **funded it up** to till now through the development costs. So, they provide the support.	Funded it up		
I mean **capacity** if you talk about **money** is a key thing and I think the support is there.	Financial capacity		
Do we have the financial resources to do anything with the ideas?	Do we have		
Resource wise we have 80 staff we must buy 80 iPad. This is a **significant investment** when it comes to costs. You know **£40,000 investment budget** down; you must believe in that to **invest** in it.	£40,000 investment budget		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Money matters and money is currently **used to** build buildings.	Used to		
We **spend** I am not sure how much but **about £30 million** or something on the Hub.	Spend about £30 million		
I would say it is by **investing more money**.	Investing more money		
The University is promoting what we are doing; they are **investing money** into us.	Investing money		
You will only get something in return if you **invest** and **put members in** to make it happen.	Investment by staff placement		
We need to be aware that there must be some **consistencies and foundations**. We need to invest but it never always going to be a straight line. It is like a stock market joined with **trends**. A few years ago, we had 26,000 students in total and this year we are 500 reduce of 30,000. That is hard work and that is an investment.	Consistencies and foundations Trends		
We are resourced to the **level of efficiency**.	Level of efficiency	Prudence	
We are **financially prudent**; that is, at some levels we can keep surpluses that we made and normally you do not keep surpluses. So, what happens is that you use it or lose it in most institutions.	Financially prudent		

531

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
If norms are not reached to, income is not OK, we need to be **prudent** in the good years and **not to** offer too much or **go over any budget.**	Prudent Not to go over any budget		
I think this is about **future proofing**.	Future proofing		
Each area is expected to make **annual savings** to allocate the budget and that savings also go into **reserve**, and reserve can be used strategically for strategic initiatives.	Annual savings Reserve	Reserve	
Before the work commenced, he wants the University to get the money to pay for it before it was opened in order **not to owe the debt**.	Not to owe a debt	Financial stability	Self-reliant and self-supporting
He wants to keep us in the top 10 financial stability; yes, **financially stable** University in the whole UK and we have been that for several years now.	Financially stable		
It is a social enterprise and the idea is that we are a **self-financing business** which is about talking and talking, working and working. It is about we are a social enterprise, so we must **be self-financing**. So, while we are doing that we find ways of using our activities to help staff, students, and alumni to create their own social enterprises.	Self-financing business		
The Institute of Enterprise and Innovation was set up for us to win the money arguing that we	Self-financing		

532

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
will be **self-financing** after five years and after five years we were.			
Currently, in the Higher Education Statistics Agency ranking of higher education institutions which are about 150, we are currently **number one for financial strength**. So, we have really made a lot of progress for not actually spending much money.	Number one for financial strength	Ranking	
We have invested more than £100 million in our research agenda to attract new researchers to the University and that is one of the **key criteria influencing** something like the **Times League Tables** and now we are **15th in the Guardian League Tables** that is a huge transformation.	Key criteria influencing Times League Tables 15th in the Guardian League Tables		
There is tension in being financially prudent because we do **not spend**, we do **not borrow** money, we do **not have any loans** and we have **big surpluses** and yet still manage to come up with some very good estates.	Not spend Not borrow Not have any loans Big surpluses	Self-reliant	
Financially, it is not just about finding the money, but do you **work out** where you need the money? Finance is another important factor because a lot of people starting businesses **assume that they need** at least £10,000 to £15,000 or more. So, it is part of their	Work out where, when and how much needed	Forward-oriented and forward-looking	Financial planning and assessment

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
business plan approach to consider for example, do you **need this much money right now**? Or do you **need it later**? And can you **identify options** in the plan?			
With social enterprise, it is just a matter of capital and that means that you cannot make a lot of decisions at the right time because you have a lot of **financial pressures** down on you.	Financial pressures	Financial pressures	Financial difficulties
Well, I think we have several **funding issues** essentially and what we must do is that we go out to look for sponsorship; HEIF money and core grants.	Funding issues		
We have Company X put certain money into a partnership, the University puts in some strategic funding in and then that pot is being used to **draw down more money**.	Drawdown more money	Fund attraction	Income generation
Sometimes it is largely driven by financial reasons because funding comes in and we normally **bid for funding** by writing a project.	Bid for funding		
If other opportunities come up it is to try to either **bid for money** to get things going or you must make ways internally to **find the money** to create new initiatives.	Bid for money Find the money		
Also, we can **make money** relatively easily; that is, at this University we can **go out** and we	Make money by going out		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
can make money easily.			
I think **grants** are important.	Grants		
You know if you are in engineering or science you might get a **major grant** to keep key pieces of equipment and that gives you a competitive advantage that not so many universities in this country can do that for.	Major grant		
They keep making people **redundant**, they keep doing it time after time and at the end of it, those smaller Business Schools have been making people redundant.	Redundant	Generating income	
The main part of this University is **generating £250 million a year** and that almost say 80% to 90% is through academic activities.	Generating £250 million a year		
I cannot remember what the total figure is but something around **£10 to £15 million a year income** that will get.	£10 to £15 million a year income		
We **turn over about £60 million** or also for the business a year. So, the contribution to the University is **very reasonable** for a university of our size.	Turnover about £60 million Very reasonable		
We have written the first-year impact report and you will see in there and you will find **good figures** in there. Already the **turnover has**	Good figure Turnover has been doubled		

535

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
been doubled since then and a lot of more jobs have been created.			
I am funded with HEIF money and I must **generate income** streams from **non-visible assets**.	Generate income		
The University is **taking over Sports Centres** and all these sorts of things. Some of that is about 'public good'. So, by taking over the Sports Centre which I think it is what is happening here will give more chance for work placement for students to have life work experience opportunities.	Taking over Sports Centres	Acquisition	
Mainly through organic growth and some **acquisitions** for that matter.	Acquisitions		
The income comes through to that department and **disappears**. At the end of the year, the department budget is **knocked down** and then you must start all over again from zero. So, that money **gets lost.**	Disappears Knocked down Gets lost	Money mismanagement	
We have a structure; the **financial model** which means that faculties keep whatever money that they **earn** to arrange a different sort of activities.	Financial model Earn	Earning	
I think we have been relatively successful for a University like ours in terms of the amount of **income** we are able and **continue to grow**	Income Continue to grow	Income growth	

536

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
year on year from a different range of activities.			

Table 49: Coding for physical resources

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Here at U1, Faculty of Research and Enterprise is a **department**. So, it is **not within a faculty,** but it is **not student-facing**.	Enterprise department not within a faculty Not student-facing	Centralised structure Unappealing	Structure
The Innovation Centre which is set up as a subsidiary company of the University deliberately as an independent company from the University is in the **eye of business.**	Eye of business	Visibility	
If you place it on the 5th floor of a horrible building nobody is going to find you. So, you know it is important that you are in **people's face**. So, it is a nice **place** to be and it is **social**.	People's face Social place		
We created this **space** about a year ago, to be the shop front for the social enterprise programme. So, it is a **place** where the **social enterprise** offer is made **visible. S**o, people can come in at any time to discuss what the offer is.	Social enterprise space Visible place		

537

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
So, as we grew, we started a different kind of initiatives every year to add to this kind of **environment of entrepreneurial** activities to make it **visible** to people as you can see with **different buildings**.	Entrepreneurial environment Visible Different buildings		
There are physical spaces and environments. We have meeting rooms, students' places, and incubators.	Physical spaces and environments	Structure	
We have a project called **Innovation Space** which we started in January 2014 to provide office-based but without walls to about 60 businesses. It provides clean **working space environment** including desks to people just starting their own business to work with other existing businesses to help each other rather than just working in isolation.	Innovation Space Working space environment		
We **opened an incubator** over a year ago, and that is a physical space where students and graduate businesses can go and operate from.	Opened an incubator		
We are a modern University; we have been a polytechnic before. So, we have always had extremely close relationships with industry, we have always had	Technology Park		

538

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
vocational programmes and since becoming post-1992 one of the first things that we did was developed the **Technology Park**.			
…Building became **de rigueur**.	de rigueur		
We need to **upgrade** this **building** for the next, say few years and this will be important for our students, staff and some others.	Upgrade building	Reconstruct	
Resources include **physical space**, for example, we have invested significantly. This University **upgrade** to more learning engaging environment.	Upgrade physical space		
The **redevelopment** of this building.	Redevelopment		
It is not much you could do but if you get yourself in a good position already you can get the **building re-instate**.	Building re-instate		
We build more buildings and as you see here [pointing outside to the ongoing construction work] everything is **rebuilding**.	Rebuilding		
This place needs to be **refreshed** and we have been so lucky to have this **set-up**. Some universities do not have their own **incubators**.	Refreshed set-up Incubators		
Currently, if you look around you will see	Buildings going	Develop	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
up to 4 **buildings going up**. One will be open next year (2016), the others will be following, and we already have the three years' plan that suggests our students' number will increase by X% and to do that we need enough buildings. So, we are already building that, and all these buildings are with two years designing commission.	up		
The City Centre is being run down as the University needs to have **more buildings** as it is recruiting more.	More buildings		
I think just from a space point of view we are **moving to a new space** by trying to create something like the Google style office.	Moving to a new space		
We have a **new building coming up** for student entrepreneurship.	New building coming up		
We have a lot of money available and the decision is that we will **invest in buildings**. That is lovely, and it is very nice to **erect a new building up**.	Invest in buildings Erect a new building up		
If you **want new buildings,** you must really think far ahead.	Want new buildings		
The **building** itself is important but it is where the building i**s** and **how it**	Where the building is	Set-up	Support infrastructure

540

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
encourages entrepreneurial culture from within.	How it encourages		
Profile wise we have the best and large number of students with great ideas that we can switch or turn on because we have a **good environment**.	Good environment		
We are improving the **infrastructure** with the city.	Infrastructure		
The **infrastructure** within the University **makes it very difficult** for entrepreneurs to do entrepreneurial stuff and to really make good progress.	Less supportive infrastructure		
To really provide a **supportive structure and infrastructure** for those people who are enterprising and entrepreneurial, most of these we need to consider what is relevant to entrepreneurial or enterprising individuals in the University.	Supportive structure and infrastructure		
We have been responsible in the City for creating enough **business spaces** for small businesses to grow and **buying a building** to make more businesses and to expand where we can. So, because we have that **infrastructure** in place we are playing a major role.	Business spaces Buying building Infrastructure		

541

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I think that **building inspires** me in a way because it carries history with it.	Building inspires		
Technology is a huge factor. So, right now we are giving every single member of staff an **iPad** and with them being trained with the right knowledge it can completely change students' interactions.	iPad Technology	Technology	Technological facilities
We are now investing in **modern facilities.**	Modern facilities		
Technology in classrooms and walls rather than chalkboards in academia. **New technologies** and exciting things.	New technologies		
There are some universities where they are entirely engineering or somewhere they have some of the industry leaders, innovators, and **certain technologies**. For example, Birmingham has that, that new and strange material that they paid for and which worth trillions of pounds.	Certain technologies		
There are also the wider University investments of **facilities** both in terms of the **office** where I am now and the **start-up's facilities** to develop new businesses.	Office facilities Start-ups facilities		
In terms of the **technological**	Technological		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
engagement, we must do more to start looking at what else is happening in the education system before universities and then building that in including things like **e-textbooks** and all these kinds of things. It is a modern environment and that is what students are going to get when they graduate and become employees. So, we must grow in that environment.	engagement e-textbooks		

Table 50: Coding for individual qualities and capabilities

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I **used to be the Director** of Innovation for Research Councils in the UK and I **worked for** the government. When I looked for a job I came here because I liked it and because I have **the Vice-Chancellor's attitude**.	Used to be Worked for Identity	Employment history	Background and qualification
I look at the academic staff themselves and how enterprising they are and of course, that is affected by their **own context and background**; where they come from, how they learn, their family and their aims in life, what is important to them.	Own context and background	Contextual background	
For the leaders, their **cultural backgrounds** mostly influence the decision they make.	Cultural backgrounds	Cultural backgrounds	
You know we have a Scottish Vice-Chancellor, we	Scottish Vice-Chancellor		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
have a Scottish Finance Director and we have very cautious individuals.	Scottish Finance Director Cautious individuals		
The **type of students** you deal with and I think the more students are **exposed to** diverse culture the more enterprising they become.	Type of students Expose to	Students' capabilities	
Some academic members have **strong background and qualifications** that support them in applying.	Strong background and qualifications	Academic qualifications and background	
Historically, 20% of our staff had **Doctoral qualifications** but now we have up to 50%.	Doctoral qualifications	Qualifications	
We have staff who are entrepreneurial, staff who run or had run their own businesses, some who have **varied industry experience**.	Varied industry experience	Industry experience	Experience and expertise
Our governors have a **wide range of experience** in terms of working in larger	A wide range of experience	Experience	

545

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
organisations as CEOs, Chief Operating Officers and therefore understand what it takes to be entrepreneurial.			
The Vice-Chancellor was **previously in charge** of the University enterprise. **He built** the Technology Park so, he gets all these, he is fantastic, and he was also **behind the setting up** of our social enterprise.	Previously in charge He built Behind the setting up		
With the Board of Governance, we are very fortunate to have **very talented and experienced** Board of governance.	Very talented and experienced	Talent and experience	
I spent years **working with the interface** of joint venture partnerships **between academia and industry**. So, I know what works what did not work.	Working with the interface between academia and industry.	Academic-industry experience	
Some academics have a **long history** of getting funds so that support them	Long history	Substantial record Known for	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
in getting funds in the future.			
In addition to the internal factors [], there is the **experience of staff** because having been here **for 36 years**, some of the senior management or people you knew when you were a postgraduate student and they were as well too. So, you have a **strong reputation** either good or bad in the University. For example, the present Vice-Chancellor is an old friend of mine when we **used to** teach together in the early 1990s in America. So, that makes a big difference actually.	Experience of staff For 36 years Strong reputation Used to		
We are a big University with over 40,000 students and we operate in four campuses and with only maybe four to five or six people in the whole University who have a	Good helicopter view Job length Knowing well		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
good 'helicopter view' who can see or make the link between the different parts of the organisation. Partly, because of the **length** I have been in the **job** and **knowing** the University **well** as I do.			
Many of our governors are **very successful business** people who have **made their names, fortunes, and reputations** in a wide range of industry.	Very successful business Made their names, fortunes, and reputations		
For someone like me who **does not have a very long history** in academia, it might be difficult to get funding from certain bodies. But you can always have a key person in your application that supports you.	Does not have a very long history	Lack of experience	
You know one of the things I am quite proud of in the School is the **range of expertise**; Professoriate.	Range of expertise	Expertise	

548

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It is now an **expected expertise** in the job description anyway that you must be highly motivated, entrepreneurial, innovative, very proactive and reactive.	Expected expertise		
We have our senior management team, our corporate management teams who were **drawn from various areas** and they are **experts and leading people** within their fields.	Drawn from various areas Experts and leading people		
We certainly wanted to drive what we believe in working with sectors such as social enterprise, medical technology, and health for example. They are externally driven just as much as they are **driven by** the **expertise** we already have.	Driven by expertise		
A lot of people struggle with sales because they can have great ideas, they can get the	Getting people to understanding	Negotiation and selling skills	

549

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
money to the door, find somewhere to do their businesses, make sure that they are confident, make network and connections with other people but **get people to understand** what they are about to do, is about **sales**.	Sales		
What makes a successful business is somebody who knows about branding, marketing, recruiting people, somebody who knows where to get funding, want to know someone who knows about accounting and tax. So, all those many **skills** students wish to know and many of them do not have them. So, it is a big area for us.	Skills	Skills	
The **behavioural skills** of the people are a huge factor. So, building **trust and rapport** with the	Behavioural skills Trust and rapport Interest of	Behavioural and relational skills	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
academics are critical. These are achieved over time by delivering on specific goals that are in the **interest of** the academics.			
If we have **skills and expertise** we are confident enough to say we can but if we are not sure we can help you with this because we do not have the skills and expertise we would say we cannot, but you can go to X and Y.	Skills and expertise	Skills and expertise	
The Vice-Chancellor has his people who are **ambitious** and enterprising like me, people who are **grounded**.	Ambitious and grounded	Determined	Ambition and passion
My vision and the other thing I think is important is having **individuals that can see** or can **make connections where others do not see**.	Individuals that can see Able to make connections where others do not see	Speculate	
I think the Vice-Chancellor was **ambitious**. His ambition was to be the Vice-	Ambition for	Drive	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Chancellor of the University and that **ambition** goes back many years and he has **ambition for** the University and the town.			
An entrepreneurial university requires the **ability** of the academics **to buy-in.**	Ability to buy-in	Willing	
We have one or two of the career staff who are working closely with us and have a lot of confidence. But many are **not that confident**.	Not that confident	Lack confidence	
In the wider HE context, it is if you make someone **confidence** and **passionate about** what they are doing, and their entrepreneurial attributes will determine the entrepreneurial attitude of the university.	Confidence Passionate about	Confidence and passion	
Another key factor is **confidence**. I talk about it with knowledge but **confidence in oneself** is	Confidence in oneself Natural confidence to rise	Confidence	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
very important because creating business alone is hard so getting mentor help is important. **Confidence** is a fundamental area in entrepreneurial people. They have **natural confidence** that allows them **to rise back** when they are knocked on the ground which most normal working people do not have.	back		
We are **pretty confidence** because we are doing what is great compared to a lot of other places who will say "we got 3,000 students in Entrepreneurship" but when you look a little bit closely they are doing something else to hook the students onto a course and they have no existing module and they will not be doing anything like what we are doing.	Pretty confidence		
For people in general, I	Passion for	Passion	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
think it is down to whether they have a **passion for** entrepreneurship and what they brought on board and consider as the key important initiatives.			
You must be **passionate about** your business to become realistic and it is not an easy thing to do because you should be **passionate about** your business to be practical. Often people start businesses in areas where they are **passionate about** particularly something you **like doing** and **have an interest in**…	Passionate about Like doing Have interest in		
To me, it is being **interactive**. For example, I see myself as a person who cannot teach in a traditional way. It should not be done, and I cannot do it. So, for me as a person, it is a **passion**. I teach in a very interactive way in class, I do	Interactive Passion Can-do		

554

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
engage the students, I try to be close to my students, motivate them, let them recognise what they want and bring out the best in them. I try to bring in elements of the classroom and that is what I **can do** as a person.			
I think that **ambition and action-orientation** to me just to me is how I am thinking about it today. So, what supports that is obviously we have a VC with **an ambition**.	Ambition and action-orientation An ambition	Ambition and action	
Ambition and innovation are two important things of an entrepreneurial institution.	Ambition and innovation		
We have **ambition, action** and achieve to make our things happen.	Ambition Action		
It is about **ambitious**, and maybe being innovative in some ways that you do but **being ambitious**, taking	Ambitious Being ambitious Action-oriented		

555

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
initiatives and being **action-oriented**.			
I **like to** work on things, to make a difference, have a project to do, have the stuff to do, have a challenge, rather than just kind of running it []. That is **not good for me**. I am not a person like that, I **can do detail** but if it is only detailed by keeping and running it over I am not interested.	Like to Not good for me Can do detail	Personality	Personality
For example, give me the task and I will complete it. I just find out that I **do not enjoy that type of job** and that was what the team wanted from me.	Do not enjoy that type of job		
I believe that many influencing factors are due to **academics' personalities**…	Academics' personalities		
I think it is part of my **personal missions** to be much grounded.	Personal missions		

556

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It **suits me** in terms of the kind of just challenges and the kind of things I **like to do**.	Suits me Like to do		
Other than my **knowledge** we must go out for fundraising…	Knowledge	Knowledge	Knowledge and mindset
I put **knowledge** as one of the big things that entrepreneurs or students' start-ups tell us that they do not have all those skills.	Knowledge		
It is reinforced by the **commercial mindset.**	Commercial mindset	Mindset	

557

Table 51: Coding for motivational factors

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
He rewards and recognises performance.	Rewards and recognises	Rewards and recognitions	Incentivising
There must be a **financial reward to incentivise** consultancy work done by academics with the private sector, social enterprise sector, government and whatever that might be, and **recognise their work**.	Financial reward to incentivise Recognise their work		
In terms of the way our allocations work, our focus will be on teaching; marking and students as well as research as opposed to enterprise activities. I suspect many people will get back to their academic careers as most universities are struggling to say that	Reward enterprise activities in recruitment		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
they **reward enterprise activities** as they reward teaching and research **in** their **recruitment**.			
So far, we are **rewarded** and there has been some sort of motivation to staff like awards to **recognise** the **good work** of staff. Yes, in the form of **recognition awards**.	Rewarded Recognise the good work Recognition awards		
I have a **Doctor of Letters** (a DLiH, so far, the only one **award** by the University), a Higher Doctorate. I have published every year since 1980.	Doctor of Letters Award		
…Allowing these departments to act entrepreneurially or act in a business sense and give them **rewards for** keeping costs down how do you expect them to	Rewards for		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
say is a better story opening these supply chains to support our own organic growth.			
He offers **rewards** to **staff who publish** as motivation.	Reward staff who publish		
As a leader, she was a **very motivating** person	Very motivating	Motivating	Motivating and inspiring
Inspirational factors are also important in the strategy.	Inspirational	Inspiring	
Business is business and creative enterprise is the same as social enterprise if you **have the motivation**. So, it is the **motivation behind it**.	Have the motivation Motivation behind it	Motivation	
What he is doing is that he is **recognising success**.	Recognising success	Motivating and recognising	
I try to be close to my students, **motivate** them, let them **recognise** what they want and **bring out** the	Motivate Recognise Bring out		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
best in them.			
There is a **lot of motivation for** faculties particularly to generate income and look for new opportunities.	A lot of motivation for		
It involves **using motivation for** the collection of market and customer information for the identification of opportunities and driving those opportunities to produce and develop new but also quality products and services. Then take this into the market.	Using motivation for		
Research is well **appreciated** at the University.	Appreciated	Appreciating	Appreciating and encouraging
We try to **encourage staff** to be involved in entrepreneurship, for example, the enterprise educators the UK with	Encourage staff Encouragement	Encouraging	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
two of our University staff as Board Members and now I am one of the Mr. Treasurers. That is with our **encouragement**.			
If you think about this systematically, knowing **how will I measure** it? **How will I reward** it? **How will I monitor** it? You know what is in for the staff? Without being exploitative, staff should feel happier in their jobs, **more empowered**, then they can try new things	How will I measure, reward and monitor?	Assessing	Assessing
…This idea of 'I am going to reward you **if you try** but I will expect you to be able **to do something at this time**'. So, there is a minimum standard agreed in terms of enterprise and	If you try to do something at this pace. Discussed and assessed	Discussing, negotiating and assessing	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
innovation and that is **discussed and assessed** through the annual performance review.			
So, I think from an emotional point of view, I ought to help local companies realise what sort of resources they have in their regions where the university should be aware of their role in that. The second thing, I mean another emotional feeling is that I **do not want to get out of touch with the real world**.	Do not want to get out of touch with the real world	Satisfying a need	Satisfying
I kind of get an **enjoying** hunt in **satisfying a need**.	Enjoy Satisfying a need		
I **feel pride** in my teaching and my research, but I **want to be** relevant and up to date.	Feel pride Want to be	Satisfaction	

563

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
There is also a **sense of belongingness** as well. All those things transform us.	Sense of belongingness		
Some people I found tend to do the same thing every day, but I get **satisfaction** in finding new opportunities and finding new solutions for things. These are some of the various ways that I tend to meet my **job satisfaction,** but I do not know if those are the same reasons for other people in the Business School.	Job satisfaction		
I can think of one other person, a Professor although we are not allowed to make money here through commercial activities, it is a requirement in the interview process being	Gain promotion	Promotion	Promoting

564

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
a Professor as well as being an active researcher you must bring money in. So, some people do it to complete the portfolio of their CV to **gain promotion**.			
So, those people you **value** should be on a permanent contract with clear career paths. If you are serious about this as an institution, then how can you succeed this if you have many people on temporary contracts? For example, if there is no **clear way for** me to get **promotion** as an individual by doing these activities why would I bordered. So, recognition is also by **getting a promotion**.	Value Clearway for promotion Getting promotion		

Table 52: Coding for organisational objectives and reputational strategies

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It is challenging also for the management because they might have to have the **ongoing objectives**, **strategies** set to meet that status in an ever-changing environment.	On-going objectives and strategies	Objectives and strategies	Objectives and strategies
There are **clear goals** around students' achievements, students' performance and within that, you will see **key milestones** against entrepreneurial outcomes.	Clear goals Key milestones		
…Has 11 key **goals**, several **objectives,** and **milestones**.	Goals Objectives Milestones		
…There is an online sentence in the **strategy** of how important student entrepreneurship is without any **policies** to do stuff.	Strategy Policies		
There are **objectives and aims** around **business engagement** which set out what the University is doing in terms of benefiting its students, and the wider business community to increase their students' ability; improving and	Business engagement objectives and aims		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
increasing their higher skill level to make them more valuable to local business community because majority of the students will get jobs around their local community areas and some will go back home seeking employment from there.			
Well, in terms of the Times Higher Award, I would be a little bit formulaic about it. Ultimately, the form dictated to us what we need to showcase but, in the form, there was a section for **strategic intentions**. So, we need to demonstrate that we got the strategy, the senior management team that deals with that.	Strategic intentions	Intentions	
…E**nterprise** must be **embedded into** and **across** everything we do.	Enterprise embedded into and across	Embed enterprise	
In terms of the **enterprise agenda**, the university leadership was keen to **embed enterprise agenda** at the grassroots and this was done **using a bottom-up approach**…	Embed enterprise agenda using a bottom-up approach		
…The **research strategy** is about	Research strategy	Strategy	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
using inspired research with impacts which are informed by external demands.			
The **strategy** he tries his best to make it as **clear** as possible for everyone.	Clear strategy		
We are quite innovative about how we use **our own strategy** in partnership with external companies.	Our own strategy		
…We also **set strategy** around Enterprise Academy. So, the other thing is that if we **set that up** we deliver it. And that strategy was developed by the corporate management team and the Vice-Chancellor who has the responsibility for it as he should.	Set strategy Set that up		
…Other than a strategic map and research strategy we do not have an **enterprise strategy**.	Enterprise strategy		
The **Enterprise Strategy** is a great thing to have alongside research and innovation.			
…Embedding enterprise into the curriculum.	Embedding enterprise		
We have that and try to look at	Enterprise fits in		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
where **enterprise fits in the curriculum** and try to **embed** it **within** the actual curriculum as well.	curriculum Embed enterprise within		
We have colleges now; we have just gone from schools down to college systems. So, we have schools and then each college has four or five schools' underneath them. So, the cross-college academic lead has been involved in **embedding their enterprise.**	Embedding enterprise		
Essentially, it is no longer something of an extra, but it is embedded **into** our strategy and **spread across** the piece. So, we have an approach that just touches every aspect of what we do. So, it basically helps us to develop some of these partnerships because we have that **fed through** the whole organisation.	Embedded into Spread across Fed through		
I have also written an **enterprise strategy** for the University [] and that include some **suggestions on** things we can do within the curriculum and how to improve	Enterprise strategy Staffing suggestions		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
enterprise and entrepreneurship. Also, some was **staffing suggestions**.			
As part of the University-wide strategy, we have an **innovation and enterprise strategy**.	Innovation and enterprise strategy		
We have a **SMEs strategy** at an institutional level which many universities do not have.	SME strategy		
We are considering trying to go for **ASHOKA status** which will be a **massive strategic initiative**. It is a strategic initiative associated with the enterprise.	ASHOKA status Massive strategic initiative		
He stands up in the seminar and he **talked about strategy**. [] he said something like this, [] "how many of you know and understand your **university's strategy**?" Most people sat there not moving…	Talked about strategy University's strategy		
So, in the end, after four years it became part of our **institutional story** that we were heading towards this.	Institutional story		
Being shortlisted for the Times Higher Award was a **measure of** the **University strategy**. It is	A measure of University strategy		

570

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
a key selling point for its **main differentiating characteristics** and certainly here enterprise is something that we have wanted to emphasise.	Main differentiating characteristics		
…Look at U**niversity strategy** other than ours, everyone that I have looked at online [], has **enterprise within** it. So, it is a big part of that competitive edge.	Enterprise within university strategy		
…We do we have the **policy** to support enterprise development or develop professionals in organisations.	Policy		
I think **clear strategy**, well communicated by the Vice-Chancellor has been a kind of way to encourage the people to see a change in the agenda which is not only about change for safe it is about an ambition to make things sort of into a different University preserving the strengths.	Clear strategy		
It is very clear, and it is very important that you have a **clear strategy** to develop systems to support that strategy.			

571

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
So, there is clearly a need there for entrepreneurship to **be part of the overarching strategy and focus** of the University rather than just been "I do or teach entrepreneurship to come and speak to me if you are interested". It needs to be a fundamental part of each element of the University courses.	Be part of the overarching strategy and focus		
…Enterprise is **part of our DNA**, it is **part of our five strands**, enterprising is reflecting on all that we do. Now moving forward, we want that to really **core to** what we do.	Part of our DNA Part of our five strands Core to		
Enterprise becomes one of the main **DNAs** of the organisation.	DNA		
The former Vice-Chancellor had a similar **commercial brief**.	Commercial brief		
It is part of the strategic plan really. So, everyone has a **target** and **entrepreneurial activities** take all different forms and are part of that target.	Entrepreneurial activities target		
So, in the strategy, they **set key performance indicators** and is	Set key performance		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
usual for a university that is very conservative. We have a lot to do to create a business environment.	indicators		
…Expect to see documents demonstrating **key performance indicators**, recognition and the most key activities from the most senior of the organisation. Then that is replicated at the departmental level, at the faculty level, service level, people who are engaged and leading in that area.			
…Everyone now in the Vice-Chancellor office has a **commercial objective** just like a member of staff. So, they are not different, they still have enterprise and innovation in their **performance target**.	Commercial objective Performance target		
I think it is about the **messages**…	Messages	Messages	Message
It comes from the core of our **corporate message** (strategic goals). So, we are positioning ourselves to breathe enterprise and entrepreneurship into enabling our teaching and research.	Corporate message	Message	

573

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It must be well integrated into the **key message** of the University	Key message		
When the **message** is **clear** to be delivered they will get delivered and they will get picked up by people.	Clear message		
So, we have an **integrated communication strategy**, a website and digital teams behind this.	Integrated communication strategy	Communication	
…It **flows from** the top to the bottom and from the bottom to the top…	Flows from	Flows	
It is a **flow from** the top starting from the Enterprise Strategic Group to the Enterprise Action Group then various departments within that facilitate enterprise.			
…There are things like more of **actions** that would align with the strategy…	Actions	Actions	Action
So, what we do to **act on** that is that we asked all our business units to look at how they fit into that and set their own key performance indicators.	Action	Action	
The University is happy when we	Little actions		

574

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
can show that we mentor 100 students in a year and that we have done this and that. That is good but other than that there are **little actions** in terms of being short-listed.			
The enterprise must be **acted on** and must be **actioned**.	Acted on Action		
I see it as a big step towards a **bigger vision**.	Bigger vision	Vision	Vision
So, one of the most important factors is the **strategic vision** of the University which currently is in the process of changing but the enterprise agenda is very much led by what the University sees as core to the overall.	Strategic Vision		
…A **vision** to get all these messages sent down to the lower level of the University and making all these things happen.	Vision		
The **vision** for being within the Careers Centre is that we are attractive to the whole University. So, mostly we fall into the Careers Centre kind of initiatives associated with career development.			

575

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
One of the things a lot of people have commented on is the **clarity of the vision and the strategy** that is within the University for what we have been trying to achieve.	Clear vision and strategy		
We have an overall strategy and **clear aspiration** around being entrepreneurial, making an impact and being an entrepreneurial environment for our students, creating the local inspirational district.	Clear aspiration		
I started with a **vision** which I will express as the most Entrepreneurial or Enterprising University in the Russell Group. For me, that expression is important because if somebody in the Group asks me: what are we doing? I am going to say **we want to be** the most enterprising University in the Russell Group.	Vision We want to be		
What **we want to be** is a real research-intensive University where we create new knowledge for the next generation of students	We want to be		

576

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
coming into the system, making them more relevant to the system and become more employable to the employers.			
I think the **vision**, the **strategy,** and sort of understanding of the **direction** for the whole University are important.	Vision Strategy Direction	Direction	
I think enterprise is part of the **mission** of the university.	Mission	Mission	Mission
Such university will genuinely include something to do with **entrepreneurial or entrepreneurship** in its **mission**.	Entrepreneurial mission		
I think the fact that we sort to focus on the **core** of the University made us stand out and has given us sustainability, but other centres come and go because they do not fulfil the **core mission**.	Core mission		
The **type of decisions** that are being made must be relevant.	Types of decisions	Decision	Decision
It depends entirely on the **decisions** that will be made in the future **about** the key **strategic priorities** for the University.	Decisions about strategic priorities		
Absolutely, we are doing all these,	Decision		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
and the **decision** was made, and we said let us get on with it.			
There are some areas that have grown and some areas that have not grown. It is about balance. It is about making balance on **good decisions**. I do not know if you have heard the phrase 'sometimes a decision is better than making no decisions'. What that means is that sometimes you must **make decisions** you must decide. You can always wait but you are not going to be the first and you are not going to be moving if you not decide. So, you must always be **making good decisions**.	Making good decisions		
It is a more **strategic decision** to do rather than carve a niche for ourselves...	Strategic decision		
It can be **strategic planning**; you know the University has its own strategy map and it can be things like being innovative, encouraging research, funding projects that support the economy or make a	Strategic planning to make things happen	Strategic planning	Planning and executing

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
change, encouraging activities in coordination with other organisations or other universities or the students themselves **to make things happen**.			
What tends to drive the University is the **strategic plan** and I think our University is at a juncture where we are moving from one leader to another. In that way, the context of any activities will be the **strategic plan**.	Strategic plan	Strategic plan	
…Universities are **revising** their **strategic plans** to reflect the business engagement objective. For example, this University **re-launched and re-visited** its **strategic plan** and is out for 2015-2020. Within that, you will see a lot of the HEFCE requirements reflecting on it and of course, this spread across the University.	Revising strategy plans Re-launched and re-visited strategy plan		
These things **do not come overnight** you must think ahead and so is the junction of risk-taking and **strategic thinking** which will	Do not come overnight Strategic thinking	Strategic planning and thinking	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
ensure you can grow and succeed.			
I would not say we were ambitious, we were not, and it was not until the first **strategy map** 2008-2013.	Strategy map	Strategy map	
Ultimately, I am not a great believer in words for their own sake, you might see statements in the **strategic document** which use the word enterprise or entrepreneurship or sometimes engagement.	Strategic document	Strategic document	
Making things happen can be **set as part of** the strategy of the organisation.	Set as part of	Set as	
Enterprise **sets out as** one of the University's seven strategic pillars as we call them.	Sets out as		
…If you **prioritise** teaching and research, I suspect that will affect enterprise not entirely but compared to capacity.	Prioritise	Prioritise	
…You know it is having all these **applied** and not just written down.	Applied	Applied	
…The University took the strategic decision in 2006 which was when the	Took a strategic decision in 2006 Enterprise agenda	Plan and execute agenda	

580

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
student enterprise agenda started…	started		
Our previous VC sets these **innovative and enterprise agenda** and that were enterprising.	Sets all innovative and enterprise agenda	Sets Agenda	
…That is quite unfortunate for the **enterprise agenda** because it was closely associated with what many will perceive as not a particularly good period for the University which is why I suspect that with a new Vice-Chancellor, the **enterprise agenda** is less likely to be focused on.	Enterprise agenda	Agenda	
So, moving forward for whatever reasons as I do not know what it was, increasingly, the **enterprise becomes more and more on the agenda**. That I would say started from about 2011 onwards when the number started to **increase** as at that time. So, compared to 2007/08 when I used to see seven to eight people in a week. In the current situation, I see about 20 to 25 people now in a week. So, that shows that the numbers have	Enterprise becomes more and more on the agenda Increase Gone up	Execute agenda	

581

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
gone up a lot.			
Our University is **refreshing** its **strategy** by **focusing on** quality in terms of teaching and research making sure that the absolute core things are working well.	Refreshing strategy Focusing on	Focusing	
The danger is that if you **focus** mainly **on the enterprise agenda** you can perhaps take your eye off the most important thing.	Focus on enterprise agenda	Focus	
By **focusing on** research and teaching as opposed to any of the other features that often characterise entrepreneurship departments such as outreach, knowledge exchange, and industry relationships. We do all that as well but if that is all that you do, then the department has no core as I would say no business in the university because unless a department delivers the **central focus** of the university which is research and teaching scholarship.	Focusing on Central focus		
I think the **enterprise**	Re-shape	Re-shape agenda	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
agenda remains an important aspect of the University, but we have **reshaped** the nature of that agenda and we will continue to **reshape the nature of that agenda** as we speak.	enterprise agenda		
We are **revisiting** the **enterprise theme** within the University to see if it is something we still commit to in the same way and the nature of backing it up.	Re-visiting enterprise theme	Re-visit theme	
Next six years we are **looking to** grow the numbers involved, the quality and impact of the community. But it cannot happen all at once. So, it must be a **longer-term plan**.	Next six years Looking to Longer term plan	Plan	
When I started in March I spent three or four months **developing the strategy** for The University Social Enterprise Initiative and we sort of **formulated and launched** it about a year ago.	Developing the strategy Formulated and launched	Formulated and launched	
This is a long-term strategic plan for growth…	Long-term strategic plan	Corporate and strategic plan	
Previously, we had a **longer strategic plan** but now we	Longer strategic plan		

583

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
currently have 2015-2020 which is **a five-year plan**.	A five-year plan		
In the **strategic plan,** you must illustrate that you will perform against **SME engagement** and you are in a better place or position against other universities.	SME engagement in the strategic plan		
…In our **strategic plan** for the **next five years'** there is this specific strand of what we called Research, Innovation, and Engagement to act as a driver for the local economy by creating investment networks, links, and contacts with banks and private organisations...	Next five years' strategic plan		
I mean if you go to our website you can download our **corporate plan**…	Corporate plan Well-understood		
Our **corporate plan** has been an important document that is well understood and used by all staff at the University whether they are academics or administrators. You will find that it is a **well-understood document**…			
An entrepreneurial university is the			

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
one that is committed through its **corporate plan**.			
…Certainly, it is written in our **five years University-wide strategy** that enterprise must play a key part in that development.	Five years University-wide strategy		
I think part of it is being dynamic and having an **appropriate corporate plan**.	Appropriate corporate plan		
At its core, it has the **long-term strategy** and it will grow and develop **over a long period of time.**	Long-term strategy Over a long period of time		
…N**ext two years**, it will focus on and include the wider local community which we serve, and that will be the business people, individuals, groups, and organisations. They will all be able to be involved in the kind of training that we do. So, the EUA will be formally **launched next year** to bring together what we currently do in such a way to have a common language around entrepreneurship, entrepreneurial education, training, and support.	Next two years Launched next year		

585

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
The University has a **long-term strategy** and we [the enterprise team] define and signpost how our roles will help the University to achieve this **long-term strategy**.	Long-term strategy		

Table 53: Coding for national objectives, priorities, and requirements

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
…For either research or enterprise funding, the **government** is aligning its own **funding priority** into thematic areas set out in the **industry strategy**.	Government funding priority Industry strategy	Funding priority	Priority
…With the social enterprise, the reason for setting up a business is about trying to solve a **social problem**…	Social problem	Social problem	Expectation
In some ways, I think it is a push towards **control** through teaching just like the REF. So, **control** might be another word. It may also be an **opportunity**.	Control and opportunity	Control and opportunity	
…Our previous Vice-Chancellor focused on the **Witty Review** and	Witty review Role play in	Role	

587

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
the **role** that universities **play in** research, innovation and enterprise agenda.			
I think the other side of enterprise is how to make a university **useful in the community** and that is another part of an enterprise that is very important.	Useful in the community	Expected role	
…That again come down **to understanding the context** we work in and is about living within that and moving quickly indecisively because all you need is you need evidence, you need to use information effectively and you cannot be paralysed by analysis. You must not be afraid	To understanding the context	Understanding the context	

588

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
of deciding. Sometimes, decisions do not work and sometimes they are very successful but if you just sit there and wait for it to happen it will happen to you, therefore, you will have less say on how to approach it.			
…We have the general enterprise and entrepreneurship education environment in the UK which is quite popular in terms of what influences employability and then what we do in terms of market research for **students' demand** as well.	Students' demand	Demand	
I think at the same time because the	Expected to engage	Expected	

589

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
university is **expected to engage** with entrepreneurship is meaningful. So, there will be entrepreneurship programmes and entrepreneurial activities that are increasingly important in the university and now called it an 'Entrepreneurial University is a way to express those things.			
The University already take DLHE seriously and it plays important role in the League Tables. The TEF I believe **want us to** take it further and take DLHE more seriously.	Want us to	Want us to	
If the **ranking** begins to have a material impact on University	Ranking May result in		Requirements

590

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
reputations, efforts to encourage teaching excellence **may result in** increased innovation.			
I think that there is a focus that **impact has major influence** for example, something like 15% score of **REF** is allocated to **impact** case study that each research group can demonstrate and there are many ways of **achieving impact**; it can be done through employment and policy by taking a research output and commercialising it and we do see perhaps strong interest from some academics who because of that are signposting that the	The impact has a major influence REF impact Achieving impact	Requirements	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
REF has made impact.			
Again, Business School, if you look on its website, you will see a lot of those objectives reflecting what the HEFCE is **asking for.**	Asking for	Request	
Like universities, the **HEFCE** also has a strategic plan and one part of its **strategic objectives** is that of business engagement. Within this, it **requires** universities to submit to them what their strategic plans are. As such, universities are revising their strategic plans to reflect the business engagement objective.	HEFCE strategic objectives Requires	HEFCE objectives and requirements	National objectives and requirements

592

Table 54: Coding for external funding and government expectations

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
…In bidding for grants now in the UK [], every academic who is writing a proposal must say how they are going to deliver the impacts from their research.	bidding for grants	Grants	Funding
You have the Oxford, the Cambridge and our University which is quite young in the **grants scheme**.	Grants scheme		
We leap into **regional funding** [] So, we are looking for **external funding**.	Regional funding External funding	Funding	
I have some **external funding** from the Royal Academy of Engineering for two visiting Professors of Innovation.	External funding		
Part of outward-facing is **obtaining funds** to help scholars from countries like Kazakhstan that come to this country.	Obtaining funds		
Essentially, it is around undergraduate **students'**	Students' funding		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
funding and the market that has been capped.			
We have always been receiving the highest tier of HEIF.	Receiving highest tier of HEIF		
Opportunities for funding both in terms of grants and loans.	Opportunities for funding		
They have a subsidiary called The University Enterprise (TUE) which has been the primary **vehicle for attracting** European **Funds** into the University and from that they built the Technology Park.	The vehicle for attracting funds	Fund attractor	
We hope to be in partnership with Lancaster and LEPs for the next round. It is all written and ready and we have gone through Phase One. That will **bring in money** for a couple of more staff and have money to spend on things like promotional activities as well as things that normally we may not have funding for.	Bring in money	Attracting fund	
They (some academics) have a	Getting funds	Funds	

594

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
long history of **getting funds**.			
We have the **Students' Enterprise Funds** which is a more accessible loan scheme for students who struggle to borrow from banks and that is supported by our Chancellor.	Students' enterprise funds	Enterprise funds	
The first step of enterprising behaviour I would not criticise the governance for encouraging applications for **grants** but caution that the **grants** should not just be used for the research only. It should also be **used for enterprising activities** as well as research. Apparently, because research is the first step and that will bring more enterprising behaviour.	Grants used for	Grants usage	
We do **use** some part of the HEIF money but as I said the majority is alumni funding, Now, we do not have co-funding, but we may get some in the future.	Use		
There are a couple of	Maximum	Allocation	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
universities in the region like Aston, Warwick, and Birmingham. I think we have always received the **maximum allocation** of HEIF.	allocation		
I believe **funding kind of constrain** the autonomy to do things because is very **hard to get**.	Funding kind of constraint Hard to get	Funding difficulty	
The **difficulty** is because of the funding streams and the ways that European and government money go is **hard** and you end up with quite descriptive projects and the **challenge is to** make sure that they are navigable by normal people.	Difficulty Hard Challenge is to		
There is a big constraint. It is hard **to get the funding**.	Hard to get funding		
We do have pre-award teams and post-award teams who support us in **applying for funds** and other stuff.	Applying for funds	Funds application	
Applying for grants was a key determinant of public sector organisation being	Applying for grants		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
enterprising			
The **HEFCE** and **HEIF**. Regionally, there are the **LEPs** because there is funding through their ESIF and ESFF. These are two different funding schemes for the enterprise. So, regionally, the LEPs are very important.	HEFCE LEPS	Funders	Funders
We also have high **industry-funded research**. So, a lot of our research funding **comes from** industry and that is across the board.	Industry-funded research Come from	Sources	
This Centre was from **donations** a local businessman who has given us funding for a five-year incubation programme. So, it is a **gift** rather than core funding.	Gift donations		
We work with the **Business Enterprise Fund** where we could **access** and borrow a higher amount of up to £50,000. For example, it is	Business Enterprise Fund Access Bid for fund		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
where we go to **bid for the fund** to build the Business Enterprise Academy.			
…Talking about funding, we **have used HEIF, Santander, Banks money**, we use soft money, we use our own money, we use any bodies money.	Have used		
We have a Product Development Fund as well and that could be drawn from several **sources** particularly from High Growth when we talk about something of £2,000 like that can also be drawn across HEIF and funding from the alumni donations.	Number of sources		
We have **sources of income** through commercialisation, modules transfer, HEFCE or HEIF money, ALUMNI gifts.	Sources of income		
We just look at ERDF program which is really the **backpack to our funding** and we have had several successes with ERDF. This is the longest	Backpack to our funding		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
period in the last 10 years that we have not had any ERDF program.			
I am **funded with HEIF** money and I must generate income streams from non-visible assets.	Funded with HEIF	HEIF	
We also get enterprise **funding from HEIF.**	Funding from HEIF		
A lot of sciences have the **Research Councils** and the **Research Councils** have started to **fund technology transfer**. So, they fund pure research.	Research Councils Technology transfer fund	Research Councils	
Also, we applied for the **European Union Funding** to provide funding help to small companies as well. So, that is our kind of portfolio of the different enterprising activities. These activities are in addition to teaching student enterprise.	European Union Funding	European Union	
There is a lot of the **EU money puts** into local groups that are focused on			

599

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
entrepreneurial activities. I have just submitted a bid in for some **EU funding** for £1.8 million.			
The **European Union** are seriously **pushing it**; the central governments are **pushing the entrepreneurial agenda using money** from the European Union because they cannot do it on their own.	European Union money pushing entrepreneurial agenda		
I think we are lucky at this University that we do have posts that are **co-funded** for example, my post has been co-funded, and the incubation manager post was **co-funded**. So, when we are talking about the past 10 years some of the teams I have been working with are **co-funded** and some are being **co-funded through the Higher Education Innovation** Fund (HEIF).	Co-funded through HEIF	Co-funding	
Others that do require money of what we called **match**	Match funding	Match funding	

600

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
funding whereby you must, for example, say when you get thousands of pounds you also need to have so many in-kind activities to generate income. It means that we can take on any RDF projects and manage them within this team.			
Since then the HEIF also has a huge impact. Another influence is that the **government put** their **money** where their mouth is. So, they support where they believe in.	Government put money	Government money	
The Biotech, for example, is partly **supported by** the government.	Supported by		
We have won funding say through the UnLtd, the HEIF, the HEFCE and all those **funding bodies**.	Funding bodies	Funding bodies	
…Source of financing the University Social Enterprise initiative is mainly from unlimited (UnLtd). It is mainly from the funding body called	UnLtd		

601

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
UnLtd.			
Significantly, more exclusive is that there is governmental support for funding through the **Scotland Funding Council** providing resources to support programmes such as the Scottish Institute for Enterprise, Scotland Enterprise Challenge, the Enterprise Campus Initiative, Youth Enterprise Scotland they are all aimed at enabling and supporting students' entrepreneurship capacity.	Scotland Funding Council		
…Across the whole UK, the Council of the **Association of Business Schools** (ABS) are working closely with **DBIS** to use their networks to support Business Schools to manage the business community such as things around skills and leadership. Also, help them access different schemes coming out to support higher	ABS DBIS		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
partnership and develop innovation.			
We have **Research Councils** and **Innovate the UK** encouraging us on collaborative discovery. They also provide funding for impact acceleration.	Research Councils Innovate UK		
Other bodies include the **funding agencies** who are commissioning to the Local Enterprise Partnerships (LEPs). LEPs are pushing to find how higher education institutions could help local businesses community to re-skill and develop new skills.	Funding agencies		
In terms of other external factors, we use the **banks** in terms of financing in general and most of these people at the end of the day need money. I am writing about that right now to sort out on how things have changed in those areas. So, **financing institutions** are there…	Banks Financing institutions	Financial institutions	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
We also have **Santander** and they fund Proof of Concept essentially as well as a digital prize in our annual business plan competition.	Santander		
We work with the **financial institutes** because they provide almost 80% support.	Financial institutes		
Then we were helped along the way by **an alumnus** [] who is a successful entrepreneur. He saw what we were doing and was **backing us up** with funding to grow.	An alumnus Backing us up	Independent Entrepreneur	
A lot of funding does come through the **Alumni Donations**.	Alumni donations		
I think it would be good for the University to keep in mind **somebody** coming along to **donate a large sum** of amount, showing the alumni the way.	Somebody donates a large sum		
The Enterprise Scholarships [] are funded by the **Alumni Donors.**	Alumni Donors		

604

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
You know we try and encourage **individuals** who are associated with universities to invest in that area. We still have a long way to go. We have had some successes and a lot of knockbacks. I do not think we are remarkably different from a lot of other universities.	Individuals		
We have **Business Gateway** which helps to provide that type of heritage entrepreneurship support and a lot of this fall on **grants resources** and support.	Business Gateway grants resources	Grant Resources	
Local authorities as well bring it down to another level so like Kirklees Council. They **want to see** enterprise emerge in the community. They wanted to work with us and other partners like schools and colleges. So, you have a range of enterprise community.	Want to see	Expect	Expectations
Government interference to	To achieve	Outcomes	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
some extent does not add any sense really but they are there **to achieve** different **outcomes** to what they pretend **to achieve.**	outcomes		
Most **regional politicians want** their regions to be more successful through entrepreneurship and that was particularly the case in the area in 2000 to 2010 where the regional government was encouraging how do we go about building incubators and providing a lot of spaces for running new businesses like that and they work hand in hand together with those people.	Regional politicians want	Want	
University is particularly full of people and the government often gets what its incentives are and **set objectives** to achieve them, but they are upset because we are smarter playing with the system.	Set objectives	Objectives	

606

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Other things are **political issues** which are always a **constant focus on** how students should be more economic-minded, more entrepreneurial-minded.	Political issues Constant focus on	Government demand	
The University got wrapped up in the **policy environment** and the policy environment seems to be **focusing on** teaching and research than on enterprise.	Policy environment Focusing on	Focus	
The **Witty Review** and the **focus** of the **Conservative Government** shows that the government has a critical impact because it became clear at that point that **government expects** universities to contribute to economic growth through innovation and knowledge transfer which then has a knock effect on REF and TEF.	Witty Review focus Conservative government expects	Expectations	
In terms of who influences our materials clearly	Government Minister for Small	Government and politicians	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
the **government** is one and the **Minister for Small Firms** and the **Minister of Education, Minister of Enterprise** are particularly important.	Firms Minister for Education Minister of Enterprise		
Another influence is the **legislative framework** on how easier it is to set up commercial businesses within the University.	Legislative framework	Legislation	
The **need for employability focus**, we need to make sure that students are employable when they leave the University. One of the elements we see is having impact through entrepreneurship.	Need for employability focus	Employability focus	
Responses to the **expectations** of all of those then go back into the perceptions of **how well** or **how successful** the University is being.	Expectations How well How successful	Expectations	
Well, there is this REF (Research Excellence	Part of your success is	Measured	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Framework) and **part of your success is measured** by how well you do in the REF.	measured		
It gives the opportunities to engage with SMEs which are the key outputs. It goes back to the League Tables. SMEs engagement is **one of the measures** of successful universities. It is because the government is **more and more interested in** universities having real impact and by having all those different schemes they give us a vast number of outputs which we can then say **look how** successful we are.	One of the measures More and more interested in Look how	Expected measures	
University is **expected to** engage in entrepreneurship.	Expected to	Expected	
The small business charter has just gone through this awarding 20, 22, 25 universities- small business charter status and half of their agenda will be based on '**are you** enterprising? **Are you**	Are you entrepreneurial?	Are you?	Requirement

609

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
entrepreneurial?'			
Obviously, the biggest one is the Higher Education Funding Council for England (HEFCE). This body funds the large part of our income; underline students coming in and obviously, they have several **requirements to meet**.	Requirements to meet	Requirements	
As **requested by** the UK government is the utilisation of the ideas and knowledge-base we have in any university to benefit all students and the local community.	Requested by	Requested	
I think REF comes around every six or seven years and it has just happened, and our University has **done OK**. It has **gone up,** but it needs to go that further. So, that is it about **competition** in **research**.	Done OK Gone up Research competition	Competition	Competition
We run the Young Entrepreneur Scheme (YES) beyond the **Enterprise Scheme** and that is a **competition** between	Enterprise Scheme Competition		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
postgraduate students between all the universities in the UK. Last year was YES 20th year.			
There are a lot of EU **funding calls** that are pushed in through departments, local and community government to see more activities coming out from these EU funds by helping people to be more entrepreneurial, helping businesses grow, helping startups and accelerators and all that kind of routines.	Funding calls	Calls	Invitation

Table 55: Coding for corporate brand awareness

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
The Times Higher Award is very important for the Marketing Team because being short-listed is good as it **provides marketing opportunities**.	Provides marketing opportunities	Marketing opportunities	Publicising
It is a **fantastic opportunity** in terms of us saying that **we are doing this** through enterprise and entrepreneurship practices.	Fantastic opportunity We are doing this.	Opportunity	
I think when we won the Entrepreneurial University Award it was **extremely exciting, massive endorsement** for the programmes we are putting in place.	Extremely exciting Massive endorsement	Exciting and endorsement	Endorse
...More people come to us because we have been **tagged** as an entrepreneurial university.	Tagged	Tagged	Tag
Enterprise and innovation are about the **positioning** of institutions in the local economy.	Positioning	Positioning	Position
University like ours should create a space and try to develop their **profile** in a **slightly different way**.	Profile slightly different way		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
There is recognition you know we really **stand out** on a national basis.	Stand out		
I am in the middle of writing a regional engagement strategy to align our strategy and **position ourselves.** So, we can extract maximum benefits out of the regional agenda.	Position ourselves		
It is **choosing where you want to be** as a University and I know we are aiming higher.	Choosing where you want to be		
Being short-listed helped us **realised where we were** efficient.	Realised where we were	Realised	Self-defined
It will depend on the **University's name**.	University's name	Name	
Entrepreneurial universities are **making names** for themselves.	Making names		
The entrepreneurial or entrepreneurship makes its way because the University wants to **see itself** that way.	See itself	Self-defined	
It is because the University **wants to be** entrepreneurial. Yes, the University is modelled as	Want to be Identity		

613

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
entrepreneurial or entrepreneurship and fits this into its system.			
That is a big development and another part of that which is kind of relevant [] I think is as well as increasing students number is the quality of the students, the amount of research, which is much about our **outward-looking**.	Outward-looking	Outward-looking	
It **shows to** outsiders, students, and people looking to work with the University, or any external individuals.	Shows to		
We are one of the biggest in terms of our **coverage** and in terms of our staff dedicated to the Entrepreneurship Group.	Coverage	Coverage	Reaching out
…The year we won the University of the Year Award was very more important for the University and for the individuals working in sort of enterprise and entrepreneurship because it just **cemented** all that we have been working towards for many years, the NCEE is very	Cemented	Cemented	Cover

614

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
important.			
Most universities always want to **speak about** or **share good stories** about what they have done or achieved. So, I do not think that enterprise will disappear off their agenda.	Speak about Share good stories	Communication	Communication
We got to always being mindful of the fact that it is a **sideshow** and unless we invest all the time in **promotion** and **communication** people are going to forget about it.	Sideshow Promotion Communication		
What the Award did was about **communication**…	Communication		
It is **symbolic** and **pronounced** the University's mission for the entrepreneurial goal.	Symbolic Pronounced		
…They are entrepreneurial because it is part of the **external message**. I think that's the actual reality.	External message		
In summary, it **sent out** the **message.**	Sent out message		
Again, because they recognised that they are in this entrepreneurial university and they	Level or status	Status	Status

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
might need to offer something a bit more to maintain that **level or status.**			
It is an **ongoing achievement** and the **status** is good as more people come compared to those universities that are not.	On-going achievement Status	Achievement and status	
Not everyone wants to talk to us or work with us, but I think we are getting **better known**.	Better known	Known	Recognition and record
It was a nice thing to have that **recognition**. So, the award is nice, but most people **know** that it is won by universities that fully **demonstrate** what is in the application form.	Recognition Know Demonstrate	Recognition and record	
Not just for the money but it is also about **recognition**.	Recognition	Recognition	
Plus, **strong presence** in the economy.	Strong present	Present	
As part of the outcome, you will see in the **local papers** that the 'University students launch new business with the help of lecturers and that we are **known for**.	Local papers Known for	Media	

616

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
As has been **marked** in the **National Press**. [] So, this push would trigger initiatives that would bring more people in.	Marked National Press		
We have our digital team adding to our website and promoting our application featuring in the **News section** that we have been short-listed for two Awards…	News section		
You find the university's name **on the news** who has contributed to doing this and doing that.	On the news		
Now, what is happening with the Awards we are **appearing** more in a most recent report in the **editorial**…	Editorial Appearing		
Now, we are **seen by** industry and that **proof** is in the industry.	Seen by Prove	Recognised evidence	
If we **promote** these **successes,** then people **can see** that things are working.	Promote success Can see		
I think the Times Higher Education Award we got shortlisted for is important in terms of getting the **recognition** for what we are doing, and we	Recognition Demonstrated Evidence		

617

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
demonstrated evidence of that ability for being entrepreneurial in all various aspects of our work.			
I would say it involves having **good case studies** and **examples** that you can use to **show and tell** how these things are working.	Good case studies Show and tell		
I think in a lot of time; we may believe that we are doing a good job and we are being entrepreneurial but we do not have that **external recognition** which always in a lot of time is a **proof** of what is happening because when you are based within a university you become all-knowing and have to understand of all that you are doing but you do not necessarily understand or **know how much** that is happening somewhere else and therefore, what you are doing is not that entrepreneurial.	External recognition Proof Know how much		
I think it is ultimately how your **peers view you**. So, to be an	Peers view you Recognise you	Recognition and validation	

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
entrepreneurial university, I think your peer group needs to **recognise you**. It is an **external recognition** and **validation** of that view.	External recognition Validation		
It is not just that historically we have been the Entrepreneurial University of the Year and it is not just that you know we have won the Regional Award which is the West Midlands Business Award for Enterprising University; we have programmes that have **been recognised as** being entrepreneurial.	Been recognised as	Recognised	
When you put yourself in for the Award and you win or get shortlisted, I think it is a **great recognition** at the national level that you are achieving what you have set to achieve as being entrepreneurial.	Great recognition	Recognition	
It is just another **recognition** of what we do which **collectively** attract students.	Collective recognition		
We like collecting awards because	Like Oscars		

619

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
they are **like Oscars**. It does not really change what you do but it is nice to get **recognition** for it.	Recognition		
It created **publicity** and **recognition** for the University.	Publicity and recognition	Publicity and recognition	
I think it is very important for **profile rising** and now the University is in the national seat.	Profile raising	Publicity	
It has given some **high-profile publicity** around enterprise related activities whether it might be competitions that students won or a spin-out company that has been given a particularly high profile.	High profile publicity		
Internally, there is **less talk about good news stories** about enterprise, research and more on teaching and learning or whatever aspect.	Less talk good news stories	Low profile publicity	
I think we need to **celebrate and showcase** more the success that we have achieved because now we are **not good at promoting** some of the things we have done or writing about it or	Need to celebrate and showcase

Not good at promoting | Low profile publicity | |

620

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
even putting it on our website to be **more visible and accessible**.	More visible and accessible		
Apparently, we are in the **top 10** for the students' business start-ups in the UK.	Top 10	Ranking	Ranking
It focuses very relentlessly on the **going up** the League Tables. For example, we are **15th in** the Guardian League Tables and **going up the ranking** in the Times League Tables. So, we are very successful from that point of view.	Going up 15th in Gone up the ranking		
I think the University tries to build **its brand** through getting the Entrepreneurial University of the Year Award, Queens Enterprise Award things like that.	Brand	Brand	Brand and reputation
I think ultimately enterprise reflects upon a **reputation** and a **brand**.	Reputation Brand		
There are a lot of new things going on including **re-branding**.	Re-branding		
Enterprise as a brand represents a **freshness** and a level of innovation that perhaps not every	Freshness		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
university in the country has.			
We are going to be concentrating more on students, graduates, and staff whereas before we worked with students and graduates only and businesses outside. I am not saying that we will no longer be doing that, but all will now be done in a **very different way** by concentrating on supporting students and graduates.	Very different way		
Our **reputation** is strong [] and where that has an effect is in graduate training. So, we do that very well and have a **very good reputation** for it.	Very good reputation		
Some people have put up with research and some have a very **nice area** of research.	Nice area	Niche	Niche
The **awareness** of accommodation in the incubation units and other things we have around to accommodate people is important.	Awareness	Awareness	Awareness

Table 56: Coding for entrepreneurial opportunity exploitation and exploration

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
…Close to market, we **exploit** a lot of **opportunities** from an organisation.	Exploit opportunities	Opportunity exploitation	Opportunity exploitation
The ways they are devolved, and the economy are going in the UK, the agenda could have much more power like something called the Northern Power House. We then need to be ready to **exploit** the Northern House and regional agenda.	Exploit		
…We should not just be **exploiting** these companies for placement **opportunities** only.	Exploiting opportunities		
It involves **pursuing opportunities** beyond the resources currently available. So, we are not just bonded by the resources that we have.	Pursuing opportunities		
I suppose it is **opportunity orientation** and action orientation. These are probably the main ones	Opportunity orientation Pursuing opportunities		

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
because the entrepreneurial university is about **pursuing opportunities** not just about identifying them.			
…Most enterprise centre in the UK is where you spin-out companies and **exploitation** of intellectual properties.	Exploitation		
More departmental meetings even at the level of the departments to **find out opportunities** for collaboration or cooperation between the staff.	Find out opportunities	Opportunity exploration	Opportunity exploration
They **find many opportunities** as possible to apply to learn the workplace environment…	Find many opportunities		
We encourage people to go and make sure they are secured and **look for** opportunities **to explore** avenues for new opportunities.	Look for To explore		
Looking out for opportunities to make us better, opportunities to grow	Looking out for		

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
our business, grow our reputation, grow our research, and whatever that might be.			
You need to try and help people to look for opportunities and to create these opportunities.	Look for and create opportunities		
There is a lot of motivation for faculties particularly to generate income and **look for new opportunities**.	Look for new opportunities		
It is also about **looking at the opportunity** by which we do action research workshops.	Looking at opportunity		
Look at the opportunities and challenging issue.	Look at	Explore	
There are opportunities out there. So, let us get into that field and **let see what we can make** out of it. So, I think it is as entrepreneurial as a big institution can be.	Let see what we can make		
Things like recognising those	Recognising	Opportunity	Opportunity

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
opportunities.	opportunities	recognition	recognition
Some of that is about **realising** that there are **opportunities** for their students.	Realising opportunities		
There is an **entrepreneurial** response to **opportunities** in the environment.	Entrepreneurial opportunities	Entrepreneurial opportunities	Entrepreneurial opportunities
Enterprising by building around these **opportunities** because for most businesses they must re-energise themselves.	Enterprising opportunities		
We need to go out and pitch for **investments** now since we have been given those opportunities.	Investment opportunities	Investment opportunities	Investment opportunities
We have a **new opportunity** meeting once a month to review which one to go for because it takes quite a lot of **investments** to investigate which one to go for. For example, we may receive up to 20-30 requests every month maybe only one is	New investment opportunities		

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
followed up rather than all of them.			
The Vice-Chancellor is always interested in looking at **new business opportunities** and **finding ways** of driving growth.	New business opportunities Finding ways	New business opportunities	New business opportunities
…As I said, offering more **collaboration opportunities**, more support and even collaboration with other universities.	Collaboration opportunities	Collaboration opportunities	Collaboration opportunities
Things like **collaboration and cooperation opportunities** may be through interaction with other members of staff…	Collaboration and cooperation opportunities		
They look for opportunities to **link up with** industry.	Link up with		
Being entrepreneurial attracts money which contributes to the overhead costs of the University but that is not the primary motive; it gives the **opportunities to engage** with SMEs which are the key outputs.	Opportunities to engage		

627

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
Universities need to play a major part of the economic role to increase ultimately the **opportunities**, the **start-ups** that are being created whether that is by funding or at least giving the students the knowledge and encouragement to start something.	Start-ups opportunities	Start-ups opportunities	Start-ups opportunities
Well, **start-ups** for us used to be where we found **opportunities**.	Start-ups opportunities		
Right now, the **entrepreneurial opportunity** is in **start-ups**. But we still have a very healthy spin-out agenda.	Start-ups entrepreneurial opportunity		
Scotland has a very vibrant ecosystem for entrepreneurship with a variety of **resources available** to support any stage of entrepreneurs.	Available resources	Resources opportunity	Resources opportunities
Seeking the opportunities by which we **innovate** to create **opportunities**.	Opportunities to innovate	Innovation opportunities	Innovation opportunities

Direct quotation	Grand-child nodes	Child nodes	Parent nodes
The third reason for doing entrepreneurial activities is to provide **opportunities** for students to do projects as part of their degree courses or as volunteers to help with **employability**.	Employability opportunities	Employability opportunities	Employability opportunities
We have unique **opportunities and risks** that are specific to us. We then need to respond to those and create a workforce that can respond to those.	Unique opportunities and risks	Opportunities and risks	Opportunities and risks
This is not just regarding money making but regarding the **opportunities** that **we have**.	Opportunities we have	Unique opportunities	Unique opportunities

629

Table 57: Coding for entrepreneurial networking and contact

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
It is important to have extensively **well-networked individuals**; you must not under-estimate **networks**. Yes, things like **networks**.	Well-networked individuals Networks	Networks	Network
He (Vice-Chancellor) is networked.	Networked	Networked	
The organisation like the Chambers of Commerce is out for **networking events** by meeting local companies to find out what they need. We have **networking events** where they would go and talk to people in a professional environment who could help them in areas like pitching.	Networking events	Networking	
What you get is a **networking** of key individuals who then recruit other people, motivate others and we then have the effect of	Networking		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
people going out.			
It is by going out to **meeting** local business community in this region looking for ways to move more positively and entrepreneurially.	Meeting	Meeting	
The **network** is so important and leadership.	Network	Network	
I must make sure that we **network** with players like that otherwise, we will not get any of the grants or awards.			
The **network** that the Business Advisers **brought with them** as well is a crucial element.	The network brought with them		
It has a lot to do with **networks**, people knew what I did before, and they want to see if she has lost her marbles.	Networks	Networks	
Quite often to make the vision happen you must have the **networks** to			

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
champion it.			
…They are **effective networkers**, are engaged at all levels with the local business community	Effective networker	Networker	Networker
Greatly, it influences what I brought here. I have **a lot of people** and I have brought those people with me to start with. **A lot of people** have followed me.	Influences a lot of people	Influence	Influence
The network is important because the network is about **power and influence**.	Power and influence		
I have **international relationships** that I brought into the University as well. [] To start to describe, really, I brought the **networks**.	International relationships Networks	Relationships and networks	Contacts
We have effectively used the **relationship** we have with them.	Relationship		
There are key people who are important to **continuing relationships**	Continuing relationships		

632

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
and there are key people who you need to get **closer to** establish a sort of **working relationship** from the start.	Closer to Working relationship		
She really enjoyed it. So, she went down, and she **met other equivalent people** maybe dozen, 15 to 20 people. So, she made **good relationships**, she learnt about other places.	Met other equivalent people Good relationships		
Individuals might have **contacts** we have part-time students; we have students in these organisations.	Contacts	Contacts	
There is a lot of **network access**.	Network access		
We do have **good partner networks**. I mentioned something like the Chambers of Commerce and the others like European Network Partners.	Good partner networks		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
I made **good contacts** with someone in the industry where we have University's expertise, which I am going to follow-up today.	Good contacts		
I left my other institution on good terms. So, not only that the staff followed me across, we develop **research partnerships** with them.	Research partnerships	Partnerships	Partnerships
…The Principal and Vice-Chancellor of the institution is being the Rolls-Royce Chair for Electrical Engineering for 30 years. So, we have a **long-term relationship** with Roll-Royce. I mean these are just a few of our **industry partnerships**.	Long-term relationship Industry partnerships	Relationship and partnerships	
She also had a **close connection** with one of the **influential** business people. So, the **close connection** with him also	Close connection Influential	Connection and links	Connection

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
added an enterprising touch to the University.			
I **know** the Chief Executive who I have got on well with. He had an agenda I had not got the right staff to do that for him, but we are going to **get together** again. I also introduced him to the advisory board, so, he is on that.	Know Get together		
Some members of staff do have **links** with universities like Russell Group universities, including other universities and they do have **great influence**.	Links Great influence		
Plus, **linking with** key institutions like Santander, amongst others. We do also go for a lot of the national competition as well. We have a lot of our University member on different boards such as	Linking with		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Ryan on the IEEC, EEUK network and that promote a lot of enterprise activities at all time.			
…Sometimes, if they come to us with something of interest, we try as much as possible to try to help and **link** them to other **contacts** or people are referred to us in some ways.	Link Contacts		
I think Oxford and Cambridge build a **better link** with alumni than we have been able to and that gives you a better stream of funding. That is important because you always have a small amount of money available. That small amount of money may be £200,000; it may be £2 million.	Better link	Link	Link
We work with external	External links		

636

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
employers, other universities, and SMEs as our **external links**.			
…They look for opportunities to **link up** with industry.	Link up		
It is also about **exposure**.	Exposure	Exposure	Exposure

Table 58: Coding for geographical factors

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Also, the **location**, Satellite is in an area; a **new area** that has **grown**.	Location New grown area	Grown area and location	Full-fledged location
So, it resides in an up and coming business area.	Resides Up and coming business area	Busy business area	Business area
I think one of the constraints for us is what the **economic base** is and what the good things in the **locality and regions** are and whether they are willing to pay.	Economic base Locality and regions	Commercial area	
…We are not in the	Major city		

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
major city and in terms of building **economies of scale** you need to be a **big city**…	Economies of scale Big city		
…Everyone in this region is in the automotive industry.	The automotive industry in the region	Automotive industry region	Industry region
…If 40% of CPD is happening in your institution **in a region** where **12 universities**, three of which are **high flyers**: Warwick, Birmingham, and Aston, especially, in Business and Management and others, are excellent. You know there are some other **excellent universities** in the **region**…	12 universities in a region Some universities are high flyers and others are excellent	Regional universities in the competition	Competition
…For **competition at the local level** I think it is a big enough	Competition at the local level	Local and global level competition	

638

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
market but at the **global level** we try to live on international students and I think that is it.	Global level		
It is a very successful University but has its **root in the locale**.	Root in locale	Root in locale	Location
I think the **geographical location** is one probably because we are part of a collegiate management called the LEPs.	Geographical location	Geographical location	
Bournemouth is in the **region** of Dorset where there are few big companies but there are a lot of small and medium businesses in that County. Therefore, for them to choose a **unique theme** about the University of	Region Unique theme Differentiates	The region is a unique theme to differentiate universities	The region is a unique theme to differentiate universities

639

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
Bournemouth to be enterprise it is sensible because it **differentiates** them from Portsmouth or Southampton.			
The point is that as an institution where entrepreneurial activities are taking place, and in our case, we are very lucky to be in an **entrepreneurial place.**	Entrepreneurial place	Entrepreneurial place	Entrepreneurial ecosystem
We are in a **high density and populated city** within a **small geographical area** and we can make it an **entrepreneurial place** within which we as an entrepreneurial university, is one component.	High density and populated city Small geographical area Entrepreneurial place		
…We are based in a	Well-known	Social enterprise city	

640

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
city that is **well-known** as a **social enterprise city**.	Social enterprise city		
I think we **live in the City** and these include the City Council, the Chambers of Commerce. We work and align with them.	Live in the City	Live in the City	Located in City
In larger urban centres, there may be more opportunities to interface with industry and to create learning experiences.	Larger urban centres Industry and learning experiences opportunities	Industry and learning experience opportunities in larger Urban centres	More opportunities in larger urban centres
The location is also very important in terms of how **attractive** the university is. For example, locations in terms of are you situated in a place where people do not want or want to spend and through your enterprise	Attractive location	Attractive location	Attractive location

641

Direct quotations	Grand-child nodes	Child nodes	Parent nodes
activities.			
I guess it is also about location as well. U13 is in a **decent and beautiful area**.	Decent and beautiful area		
Being in a **noble City** has a significant advantage in terms of **ease of access** to many corporations and visiting universities and government. So, we are very lucky to be in such a **fantastic city**.	Noble City Ease of access Fantastic City	Attractive and accessible location	
I think there is a sense where they have taken what they perceived as a weakness which is a '**place**' because this City is **not the most attractive place** in the country and we use that to get up the League Tables.	Not the most attractive place	Unattractive place	Unattractive place

642

Appendix 19: Higher education strategies for entrepreneurialism

Table 60 shows the different strategies driving various degrees of engagement in entrepreneurial activities.   The Table suggests that the differences in the universities' approaches are consistent with their institutional history in terms of old and new or pre-1992 and post-1992 universities and educational focus in relation to teaching and research orientations. Other strategy types that surfaced but not in the Table include: fund-driven, collegiate and cohesive, mixed or broad-based, professional player, the United to Succeed Phenomenon, inclusive or simplified, Allan Gibb model, deterministic or top-down, alumni-driven and engager, action-oriented and initiative-taking, resource-seeking and stakeholder approach, global-based and opportunity-aware, multiple and top-down, targeted strategy, and the garbage-can model. The linkage between these strategies and entrepreneurial activities are displayed in Appendix 20. The implication of this discovery is that universities respond to entrepreneurial opportunities differently. As such, the strategic actions underpinning entrepreneurialism vary. Consequently, this is a response to the call for clarity on corporate entrepreneurial strategy (Hind & Steyn, 2015; Kuratko & Morris, 2018).

Table 59: Samples of key market differentiators underpinning entrepreneurialism

Cases	Approaches	Evidence	Distinctive strategies	Evidence
U1	Fund-driven	I think the money comes from the HEIF which is running out now (P21/L112-113/2016)	Service and commercial-led	We work as a central service organisation and *business running* for a long time now. It is the right thing to have a *Commercial Director with vision* and not just a money person to drive the commercial side (P21/L116-131/2016).
U2	Flexible and adaptable	…the difference between us and larger universities is that when somebody comes to us with an idea and asks us 'do you think your University can do this?' We can probably *decide within a short time* (P24/L360-363/2016).	Cohesive and collegiate	It is much about *building a community*. It is not only how we can support student start-ups but how we can support each other. It may be that we can work together collaboratively, or it may be supporting each other in key areas (P25/L122-125/2016).
U3	Intellectual Property-driven	The OSI is a new IP driven Company where the University	Mixed model & broad	Some of these initiatives are driven out of the sciences and are highly driven by

Cases	Approaches	Evidence	Distinctive strategies	Evidence
		is exchanging intellectual property rights to commercialise ideas with market-leading companies. This unique approach allows the University to network with private companies demonstrating that we are leaders in innovation… (P18/L79-85/2016).	approach	our Technology Transfer Office (TTO). The TTO encourages the move away from pure licensing to a mixed model of licensing and spin-out (P18/L68-70/2016). We take a very broad approach (P18/L16-20/2016).

For example, in comparing universities, participants underlined that a sustainable strategy could provide an institution with a distinguishing edge because entrepreneurial has the flavour of sustainable and social enterprise approaches. That is, embedded in social meaning, ethical values, and sustainability. This makes a difference for some universities because many entrepreneurship centres might take a more profit-driven approach and others take multiple approaches in terms of what influences their entrepreneurial initiatives. Some consider the elements of meeting the need of the present without compromising meeting the need of the future to ensure that there is an ethical healthy society, continuous prospect economy, vibrant environment, and community. So, the idea of that sustainability and ethics featured in what some universities do and take various shapes and forms.

Appendix 20: Case-by-case models of entrepreneurial universities

Also, different shapes are used to express different interpretations. The oval shape represents the unique entrepreneurial practices and activities and square shape represents the approaches these universities are taking to embrace entrepreneurial transformation. Thus, application of visual approaches in this thesis is significantly important as there is an increased interest in a qualitative study to complement traditional ways of gathering information including participant observation and interviews with graphics or pictorial methods.

University 1
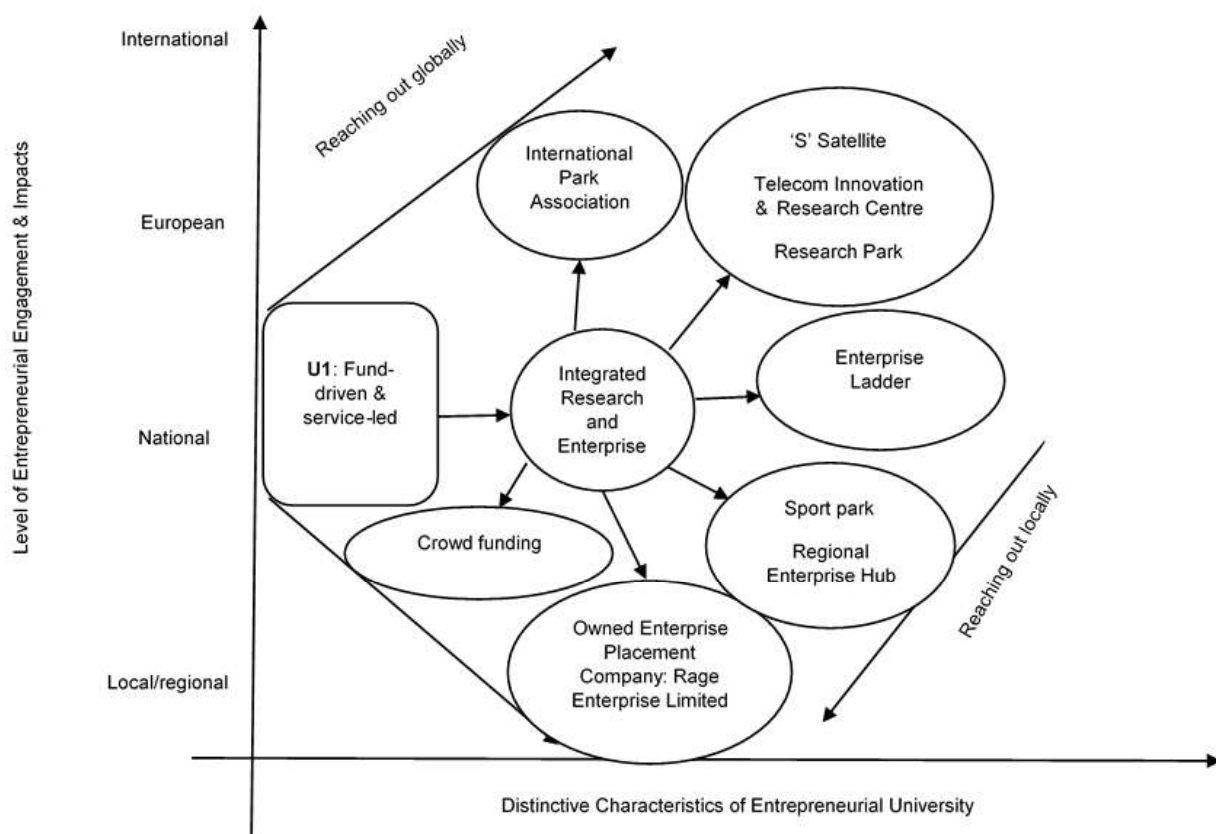
64|**Figure 29: Entrepreneurial characteristics model of U1**

Starting from the top right in the diagram, at U1, the Director of the Research Park was appointed as the Director of **International Park Association** for his knowledge in setting up science and technology parks across different countries. While this is one of the main characteristics, the active participation of key staff influences national and international agenda and policies. The importance of having the right people with the expertise to run and manage entrepreneurial initiatives is itself an entrepreneurial act said some participants.

At U1 over the years, it started building a Research Park that was 23 years ago and that was very entrepreneurial as it has one of the Research Parks in the Country. Also, the Director of the Research Park became the Director of the International Park Association so, that is also entrepreneurial.

The **University Research Park** is an enterprise that offers pre-incubation, full incubation, grow-on space and opportunities to technology-based companies. Located within the Park is the **Technology Centre**, a business incubator that offers business development services to a wide range of companies to support their development and growth. **'S' Satellite Technology Ltd** is a world leading commercial small satellite company with an innovative approach to testing, build and design spacecraft as well as house engineering on site. As a spin-out company from U1, the company has reputation for providing operational and commercial satellite programmes and transfer research outcomes into a commercial enterprise. This unique operation gives the University an edge to be at the forefront of the small satellite industry, participants' comments expressed. Five to seven years ago, it had 'S' Satellite Businesses which led the whole of small satellites and that worth £70 million or so which is a big number for a university. This enables the University to then build Sports Park.

While attracting £70 million investments, the **Telecom Innovation and Research Centre** (TIRC) provides a research hub which houses over 170 researchers and was established on the ethos of cooperation rather than competition. This means that through

647

global collaboration, TIRC facilitates interaction with industry. TIRC has a ground-breaking record of 5G, a transformative set of technologies that enable innovative applications and services changing private and professional lives by removing boundaries between real and cyber worlds. Participants considered that the facilitation of academic-business link by TIRC is perhaps an entrepreneurial behaviour.

It built Telecom Research Centre to advise large Telecom Innovation Centre. But that is actually a big research project because they have gone out to link with major corporate telephone companies in a major business consulting and that is entrepreneurial because it really aligns the University with real businesses to make things work.

Besides this national and international level initiatives, U1 takes part in regional level initiatives including Regional Enterprise Hub. U1 recognises and acknowledges the need to do more on its research side. Participants emphasised that one more thing is to do more on the research side. In addition to this, the one-way arrow symbolises that entrepreneurial activities at U1 are not yet tightly coordinated. This provides clues as to one of the reasons why the University has been shortlisted twice for the Times Higher Education Award, yet to win. Therefore, effective coordination and integration of all entrepreneurial initiatives across the institution could be a critical area for improvement.
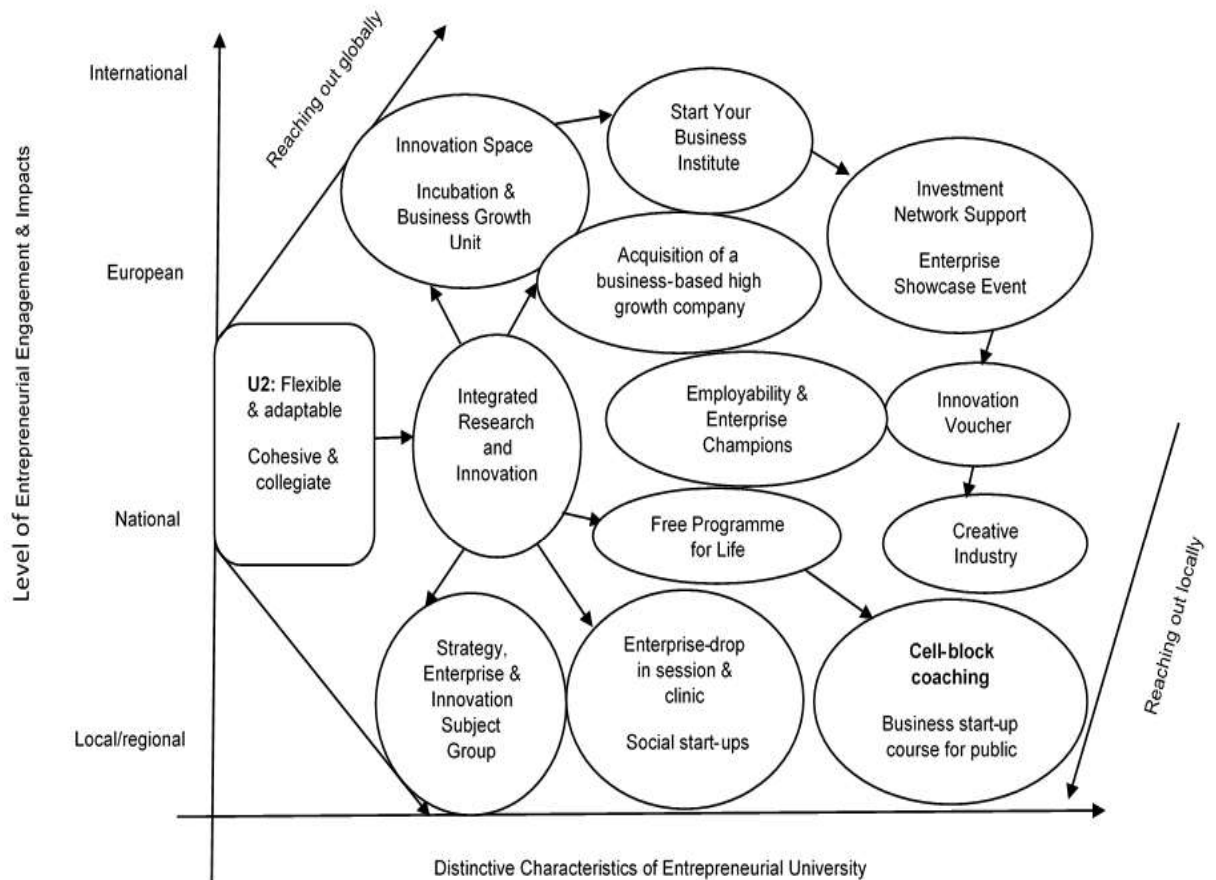
Figure 30: Entrepreneurial characteristics model of U2

In 2014, U2 opened a shared office space called **Innovation Space** (IS) to inspire small businesses, nurture entrepreneurs and start-ups. IS was established as a not-for-profit architect-designed project to offer business rented desks monthly at affordable rates and to foster business creativity as individual entrepreneurs share skills and help each other to find creative solutions to problems. IS provides both hot-desk and permanent co-work office space to enable small business owners to become sustainable and successful. Given that SMEs are at the heart of the UK economy, and are faced with the issue of space and flexibility. As an entrepreneurial actor in the regional ecosystem, U2 addresses this problem through its space provision.

649

Participants provided valuable insights highlighting that self-employed people are struggling to work from home and they want to separate their home (social life) from work life. So, they need office space to do things and one very simple way of doing it is by going to an office to work. So, there is no more working from home. Also, most people who use the space cannot afford to rent an office that is where our Innovation Space project comes in to cover that gap providing space for people. So, space helps them to be productive by starting out their entrepreneurial ideas from an affordable space through to established companies and grow their businesses.

However, while U2 is playing its key role in the regional economy, it uses IS as third leg activities to diversify its funding source. Participants illuminated that their innovation spaces are given the task of either bringing a certain amount of income a year. Another big investment by the University is the **Incubation and Business Growth Unit (IBGU)**, which was described as easy-in-easy-out resources, said, participants as they emphasised that the University has invested in incubation space, and there is one for both students and local companies to have an easy-in and easy-out resources in where you got an official address, chairs, and telephones to push up your business. There is one for small student businesses (one-two people) and another one which is particularly for our businesses in the City where they have retail spaces.

Within the IBGU, there is the **Business Enterprise Centre**, a one-stop shop that integrates the University's services for business by providing easy access to expertise from across the institution. Among other things, the Centre offers consultancy and support to organisations of various sizes including start-ups, SMEs, and large organisations. In this vein, the University is making a big difference to the community.

U2 also has educational workshops for business people in a specific sector such as the **Creative Industry**; that is, targeting a specific set of entrepreneurs, said, participants, when pointing to another initiatives which is specifically around 'Creative Industry' which look at activities such as graphic designers, coders, and mobile active people to get them to

650

engage with the University and plan to open another incubation space called 'Stars Studios' probably in May or June 2016 in one of its historic building.

U2 has an **Investment Network Support** that assists in promoting its entrepreneurial activities. This network constitutes different groups including the government and each group with its significant effect on U2's entrepreneurial work. For U2, creating an investment network is a unique way to connect the various investors working the University, as described by participants that one of the things related to the high-level vision is that the VC and senior management team try to create an investment network support to put things together like linking the investors (banks) with other public-sector organisations such as central government which is a place where companies go if they need like a million pound to fund big things.

Participants itemised further that there are various numbers of representational groups, for example, the National Centre for Public Engagement and there is a lot of the EU money puts into local groups that are focused on entrepreneurial activities.

Another major characteristic is the **Cellblock coaching**, an in-company course offers to companies, particularly suitable for larger organisations as a strategic need to develop their people, said P17. Providing a typical example of how larger companies benefit from this course, participants illustrated with the example of Hewlett-Packard (HP) which has gone up the market apart from being cheap and reliable to higher solutions rather than boxes. So, HP needs to develop its staff in quality management and U2 is one of the few universities that specialises in such area.

On the side of emerging entrepreneurs and start-ups, participants shared their views on how the Cellblock educational activity works, outlining that one of the courses is a one-off project which is called 'Cell-block coaching', a creative and digital freelance or business start-up courses and the people they get onto this coaching project are people who have their initial ideas. They help them to reward these things and to evaluate the most important, the least important, where they will have to go for knowledge, how they want to schedule that in, what is the financial status and then at the end of all these bring all the

651

information together to start a business plan and enrol them onto a mentoring session to progress onto the next level. So, from an educational perspective, it is believed that it is almost getting people ready for business.

University 3
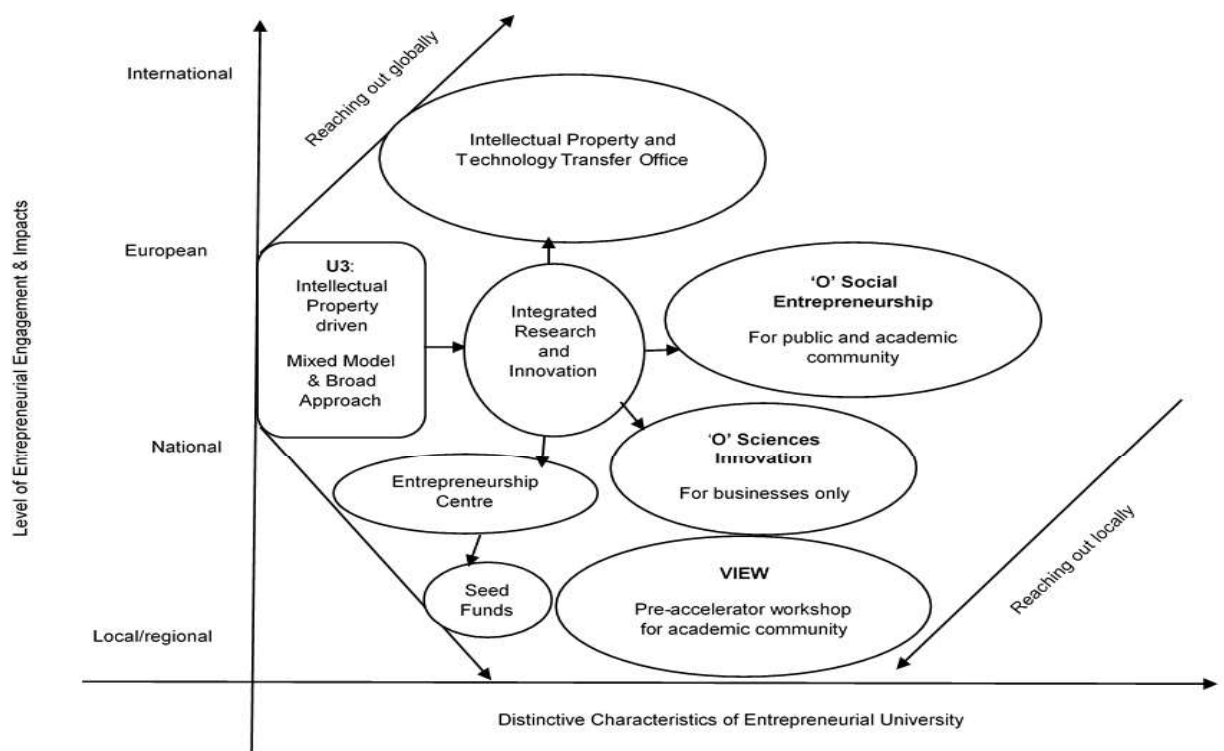
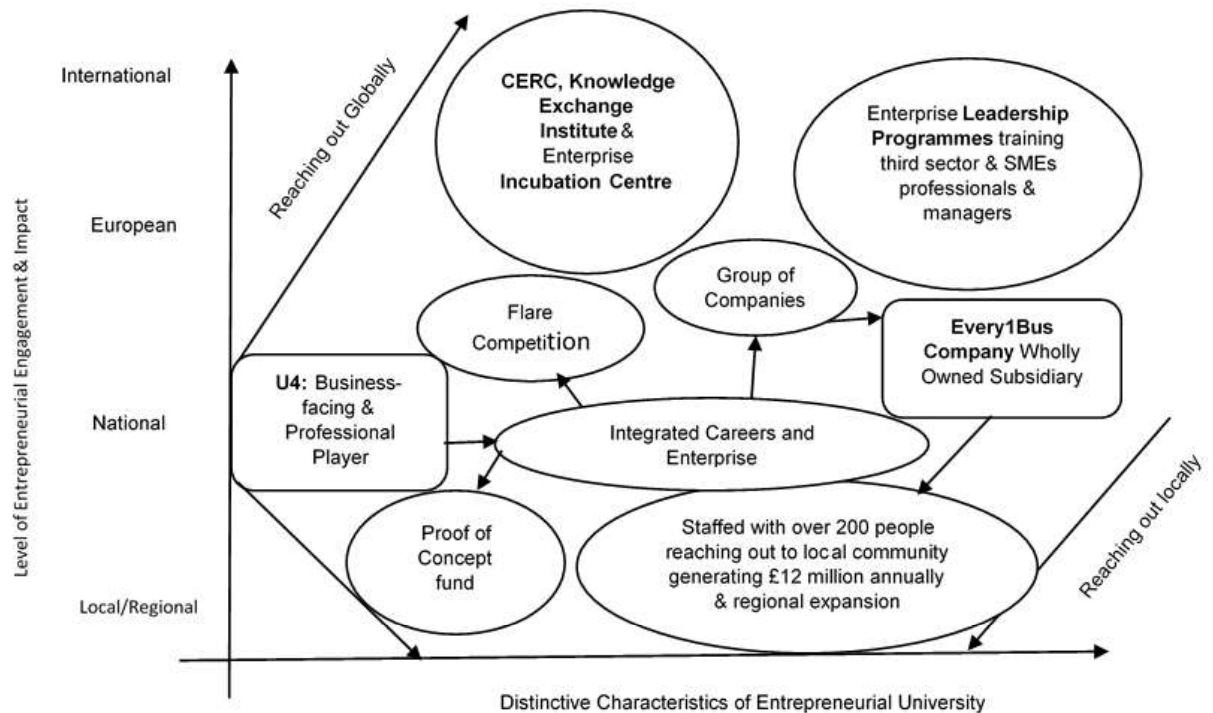**Figure 31: Entrepreneurial characteristics model of U3**

As shown in Figure 31, the integration of research with innovation as the strategic positioning of U3 was triggered based on its intellectual property orientation coupled with its mixed model and broad approach. This approach is defined in the context of having key entrepreneurial initiatives such as an **Entrepreneurship Centre** that is primarily student-facing to explore entrepreneurial skills and entrepreneurial ventures and a highly-driven **Technology Transfer Office** that encourages the move away from pure licensing to a mixed model of both licensing and spin-out. To support organisations of various sizes in

developing and growing their businesses, U3 has recently launched a new IP driven Company called **'O' Sciences Innovation (OSI),** said the participants.

OSI is an interesting and very remarkable initiative at U3 launched in 2015. The OSI is a new IP driven Company to provide support to businesses. It is where the University is exchanging intellectual property rights to commercialise ideas with market-leading companies. It also focuses on investing in technology scholars in the region. It is a unique approach that allows the University to network with private companies demonstrating that we are leaders in innovation and entrepreneurship. This highlights the extent to which entrepreneurial networking of the University helps in its income generation and funding attraction.

Also, on the side of students' development, U3 has put forth an online course for social entrepreneurship called **Social Entrepreneurship Online**. While this course is a proven endorsement of U3 as an entrepreneurial institution, it conveys two key messages. First, it indicates the global edge of U3 in terms of reaching out to students in different locations around the world. Indeed, this is one of the methods of internationalising higher education and bears a connection with MOOCs. Second, it responds to the need to develop creative solutions (action orientated activities) to address social problems by empowering students to see social entrepreneurship as a force for social change. The registration fee is £255.00 for 10 CATS points and upon completion of the programme, students receive a Certificate of Completion (U3, Website). Taking advantage of its action orientated activities; U3 is globally reaching out to wider users.

Having managed to move ahead of its peers in tackling the same issues facing many universities in the HEI sector more entrepreneurially, participants acknowledged the difficulties encountered. They lamented that it is a big issue in any large universities to connect the different parts of the university. While entrepreneurial is challenging, the VIEW programme is one of the ways U3 has chosen to address that issue.

Figure 32: Entrepreneurial characteristics model of U4

As shown in Figure 32, the commercial arms of U4 have been its major defining characteristics which include a various group of subsidiary companies tailored towards third stream agenda serving regional, national and international markets. This was complemented by an interview discussion with participants, who mentioned that the bus company started in the year 2000 currently with over 200 staff and turns about £12 million a year. Unlike the start-up activities in the other universities (e.g. U1, U2, and U3), this implies that the Bus Company is a spin-out for U4.

Prior to this spinning out this Company, there have been several commercial activities undertaken by U4. For example, *The Every1Bus company* was established in 1992 as a bus service for transporting over 18,000 passengers daily with 100 buses and over 200 staff and *Exemplas Holdings Ltd* (EHL) as the commercial arms of the

654

University. This group of companies could be the major defining character of U4 title as being entrepreneurial. EHL is a not-for-profit, Private Ltd with Share Capital established in 2007 under the UK Companies House. Having been established for nearly a decade, EHL has made a substantial contribution to the growing reputation of the U4, most especially in relation to it being labelled as an entrepreneurial university. EHL was established with the goal to deliver business support services to small business enterprises and start-up organisations. EHL through the formation of a sub-company, Business Link is recognised as the heart of East of England.

The EHL and Every1Bus as the commercial arms of U4 are typical examples that well captured the university-business/external relationships. With regards to U4 evolving as an internationalised University, the global coverage of the University via its group activity provided by EEIBD Ltd demonstrates its international profile. In this regard, entrepreneurial development does not only involve changes to internal organisational structure it is also about raising international profile to transform the society, thereby contributing to global economic context. That is, U4 has been playing a tremendous role in its regional economic development via its engagement with East of England Development Agency (EEDA), Business Link and Every1Bus.

The major concerned signalled during the interview session was that the companies are fragmented and not well-connected with each other as they are working as independent companies for the University. The cause of this disintegration maybe because business is business and a university remains a university with every party having its own interest. This is because participants' opinions expressed that although the University is at the heart, there are fragments within and around and the activities are not linked. They are not linked, they are owned, they own their own agendas, they operate independently of the students and academic life and that is a problem, it is a big problem, lamented the participants. The managers are winning the battles and managers manage funny enough, and their idea of management is control. So, innovation goes out of the window. The group of companies, the Bus Company links in certain areas and there is a consultancy firm which is a very large

655

Company. "And all those initiatives, some of them are linked and some of them are not. So, we can give good voice, we can have a good voice in the area, and then we can have multiple discharging voices in the areas. That is a shame" (P5/L161-171/2015).

To reinforce this statement, the bureaucracy nature of higher education has been identified as a major barrier. Some participants elaborate further that this is a big concern because bureaucracy invariably almost invariably leads to conservatism within organisations. "The thing that people do is that they protect their own part of the organisation first and I think that kills innovation, it kills it dead. So, I see that drift has been a difficult thing. I have always been a great lover of knowledge exchange and we now have an **Institute of Knowledge Exchange** and we are professionalising the professions. Again, people should have the opportunity to grow their careers, to take jobs that are outside the business. I am deeply suspicious that, that is the best use of their time" (P5/L173-181/2015).

The aspiration to become enterprising and business-facing University was coined by the ex-Vice-Chancellor of the University who was acknowledged for his progressive thinking on university-business collaboration (UBC) with whom the University achieves the UK's leading business-facing university reputation. The appointments of a ***Pro-Vice-Chancellor for Enterprise*** and a ***Director of Enterprise and Innovation*** enable the enterprise to evolve in the institutional strategy to create an entrepreneurial institution. Therefore, crucial to U4's entrepreneurial act, is its entrepreneurial designation.

Another key indicator of characteristics is the encouragement the University offers to its staff to take on a leadership role in an entrepreneurial context through participation in the **International Entrepreneurship Educators Programme** thereby developing its enterprise education activities for students. Perhaps, this is an entrepreneurial development of staff which in turn affects the entrepreneurial development of their students as they are well equipped and trained with various entrepreneurial techniques.

Then for the entrepreneurial development of students and graduates, the University has a designated centre called **Enterprise Incubation Centre**. The ***Enterprise***

656

Incubation Centre is created to provide students and graduates with access to office space, business advice, and other support services to existing and newly established start-ups. The key services provided by the Centre include business facilities such as office equipment, monthly business clinics and progress reviews to monitor progress, monthly networking session to connect the community of entrepreneurs, and opportunities to work with like-minded people in the Centre.

Some of the other support U4 offers include: ***'pump-priming' funding schemes***, specific (e.g. Turning Failure into Success and Raising Your Research Profile) and general (e.g. Leadership Development and Personal Development) training opportunities, and mentoring schemes which allow new researchers to talk to another research fellow with similar experience in their areas. This is of significance to "ensure the continuity of producing world-class and highly-driven research scholars" (Vitae, 2008, p. 4).

Another aspect of the University's support for students is the ***Enterprise Fund***, introduced to assist students in developing social enterprise and commercial concepts. It was designed to offer them both funding support and coaching help. The financial awards are granted upon the completion of an application that successfully demonstrated a proven enterprising thought with a pitch to the expert. Funding helps to develop their entrepreneurial idea but must meet certain eligibility criteria to qualify.

In addition to all these developmental programmes and funding initiatives, U4 runs series of extra-curricular activities including enterprise and business events to enhance career development such as **Small Business Marketing Conference** and **Grow Your Business with Market Research** amongst others.

Though 2013/14 statistics showed a decline in student profile of full-time undergraduate (see Table 60) but this might be due to the dynamism in the institutional context, particularly the increase in the tuition fees for this group of students. As such, the decline is attributable to a large departure of final year graduates and under-recruitment of full-time undergraduates. This suggests that as a Post-1992 teaching-oriented institution, involvement in entrepreneurial activities is not done to disadvantage teaching and research

657

role of the University as REF 2014 confirmed U4 as an institution with a strong commitment to research.

**Table 60: Changes in U4 students' profile and financial statistics**

Student Profile		
Mode of Attendance	2012/13	2013/14
Full-Time/Sandwich	18,930	17,703
Part-Time	6,200	7,587
Total	25,130	25,290
Level of Study		
Undergraduates	22,130	19,726
Postgraduates	3,000	5,563
Domicile		
UK		20,990
EU	12,000	758
International		3,540
Financial Statistics (£000)		
Income	236,275	241,422
Expenditure	221,834	222,543

Sources: U4 Financial Statements 2013-14 and the Complete University Guide.

Regarding building a partnership, U4 led the HEIF funded £2.5 million ***Film and Digital Media Exchange*** which continues to be integrated into the University's strategy. The project aims to connect the creative industry with education thereby improving the culture of entrepreneurship through creative enterprise (HEFCE, 2008, p. 79). It provides opportunities for students to explore the professional environment of the creative industries.

In terms of its other entrepreneurial practices, U4 offers short courses as part-time routes and teaching methods in Social Enterprise Leadership Foundation (SELF) Programme and U4 Enterprise Leadership Programme (ELP).

University 5
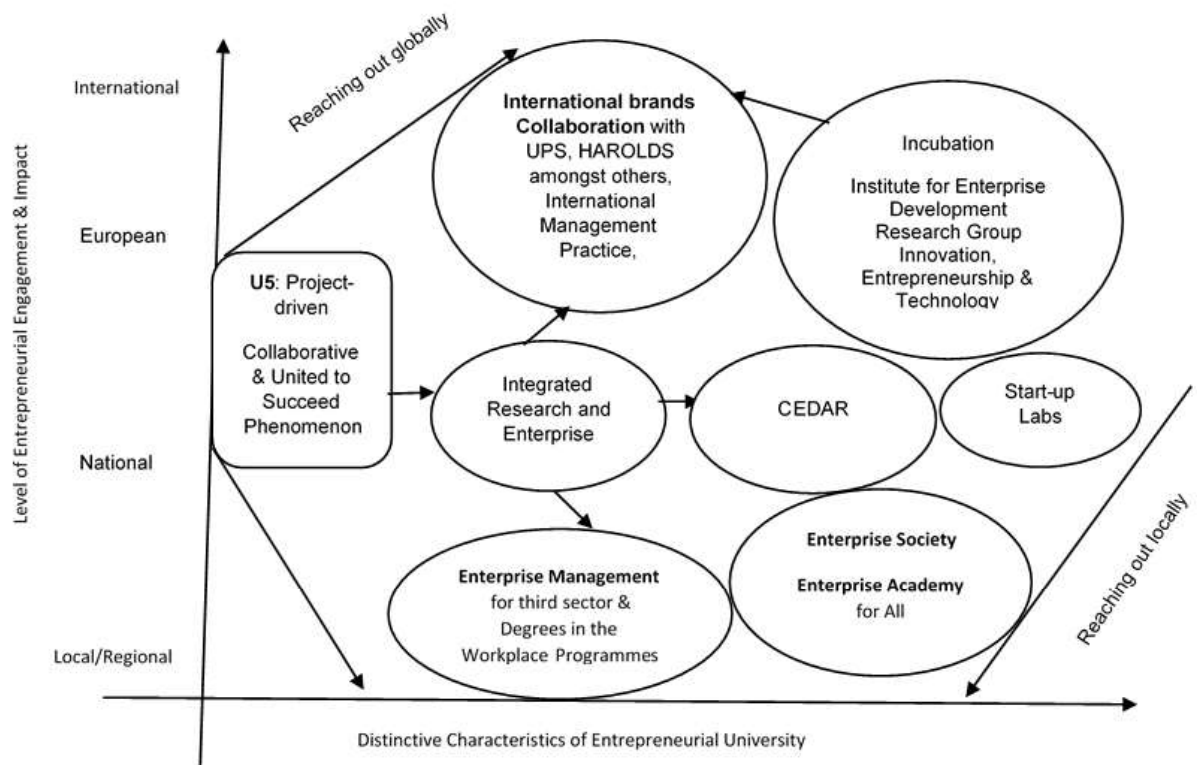
Figure 33: Entrepreneurial characteristics model of U5

As documented on the University webpage, one of the key entrepreneurial initiatives at U5 is the CEDAR (***Centre for Enterprise Development and Research***) start-up support called ***Enterprise Fellowship Scheme,*** an innovative programme for regional entrepreneurs looking to start or accelerate their business. Launched in 2011, the scheme has allocated £120,000 (donated by successful entrepreneurs) in start-up funding to 12 early stage ventures in the Cambridgeshire area. In addition, through the entrepreneurs-in-residence network, business mentoring support is provided.

Through ***Start-up Lab***, CEDAR provides dedicated and professional workspaces for students with initial business ideas to experiment in a friendly vicinity with like-minded colleagues. There is also ***Cedar Thursdays***, a monthly networking event for entrepreneurs

and entrepreneurial businesses. Through **MedTech Campus** which work is with commercial sponsors to connect academia with business on health projects, U5 reduces the time taken to invent new clinical products.

Through **Degrees at Work**, U5 takes a demand-led and practical approach to staff training and development. U5 works with organisations to create work-based, business-focused and academically credible for the benefits of the employees and organisation to improve performance. Courses offered to cover a wide range of areas amongst which include Management, Leadership, Sales, and Change Management. Harrods and Willmott Dixon have benefitted from this service.

Ixion is a subsidiary group of U5 that transforms people's life, high-growth organisations, and research institutions, through skills, employment, enterprise, and innovation to enhance economic progress. In addition, it supports SMEs and start-ups around the South of England. U5 also has in place staff training and development programme for third sector organisations called the **Social Enterprise Management.** This is two years part-time Certificate in Higher Education programme is designed for employee, volunteer or trustee of charities, social enterprises, cooperatives and others to develop a range of skills and understanding in managing staff, stakeholders, organisations, and projects to help them accomplish their strategic objectives. It covers third sector-based topics including Leadership and Management, Financial Management, Human Resources Management, Social Impact Measurement, Social Enterprise, and Marketing for third sector organisations. In addition to being currently employed or volunteer in the third sector, it also required at least 2 'A' levels or relevant work experience for entry.

U5 offers **Business Support Services** to 2000 organisations every year with knowledge transfer and local business communities. It works with a range of partner organisations including local authorities, government departments, professional institutes, business networks, and business support organisations supporting and delivering relevant services and initiatives. Some of these provisions include high-class facilities (conference, meeting, and performance and exhibition spaces), short courses, proof of concept projects

and much more. There is also the **Entrepreneurship Support Programme** which is run in partnership with the University's Student Union to provide a series of industry-specific event tailored towards helping the individuals to start their own businesses.

In the last 15 years, U5 has been engaging in **KTPs** covering a variety of different industries and successful projects that have been undertaken include the development and design of new products or market function with companies like Omar Homes, Andrew Webster Ltd; introducing new computer systems with companies like MLM Group; implementing technology with company like Harpley Engineering; and improving product or process performance with company like Cellbond Composites Ltd. U5 offers three programmes for long-term strategic projects one-three years, short-term tactical projects four-eighteen months, and projects to help reduce the company's carbon footprints.

In 2013, U5 was one of the only four UK Universities (Hertfordshire, East Anglia, and Cambridge) to undertake the European Union-funded initiative, the 'Central Balticum Entrepreneurship Interaction Project'. The project was to enable the four universities to showcase their entrepreneurial activities to over 30 enterprise educators from the Baltic region. The project aimed at identifying and sharing entrepreneurial best practices with the Baltic Sea region where the theme is yet to be established. Praised for its entrepreneurial spirit and entrepreneurship culture, U5 was one of THE EUYA winners.

In terms of internationalisation, the University undertakes the Bridge International and Harare Institute of Technology projects in South Africa and Zimbabwe respectively. Funded by Barclays Bank Plc, *Bridge International Project* is to support South Africa entrepreneurial businesses seeking to trade with the UK. The Harare Institute of Technology entered an agreement with ARU to be sending ten students each year onto the new *MSc Entrepreneurial Management* programme and the establishment of a doctoral programme for academics in Zimbabwe interested in obtaining a Ph.D. qualification delivered both in the UK and Zimbabwe. The University also developed an international partnership with a government agency in Uruguay- the National Research and Innovation Agency to promote innovation and enterprise development.

661

University 6
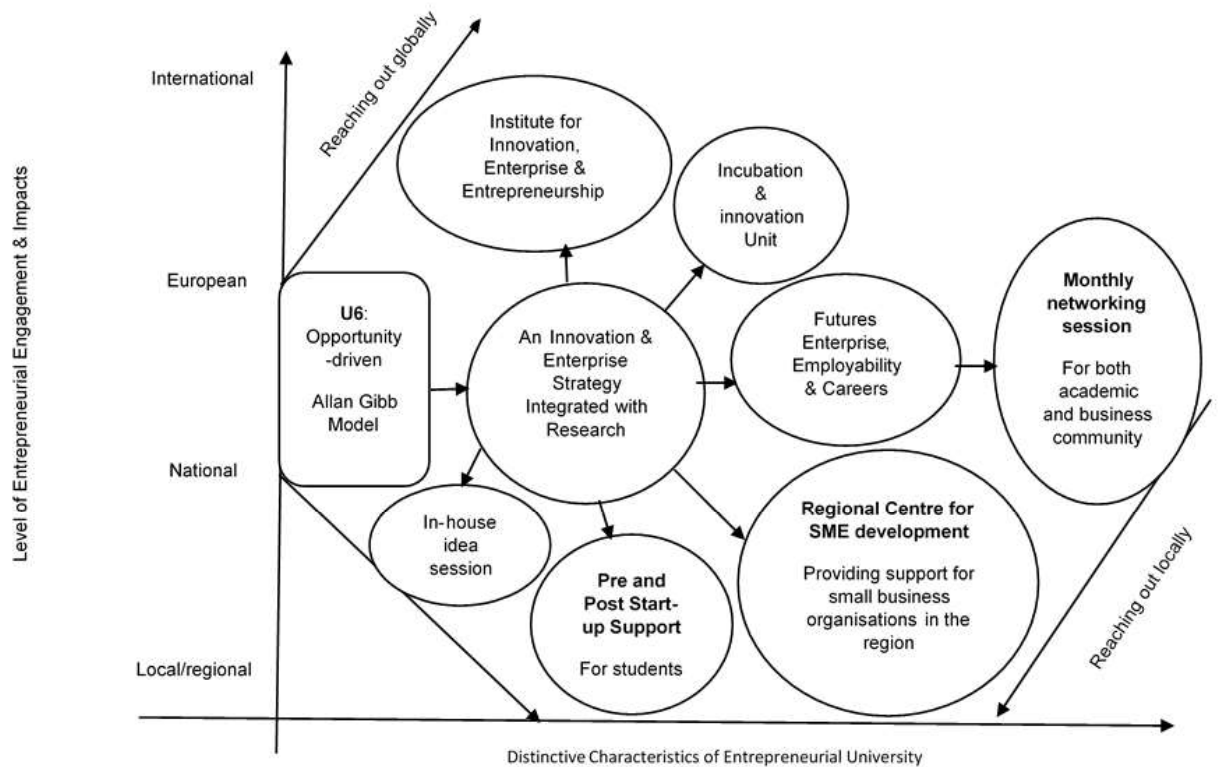
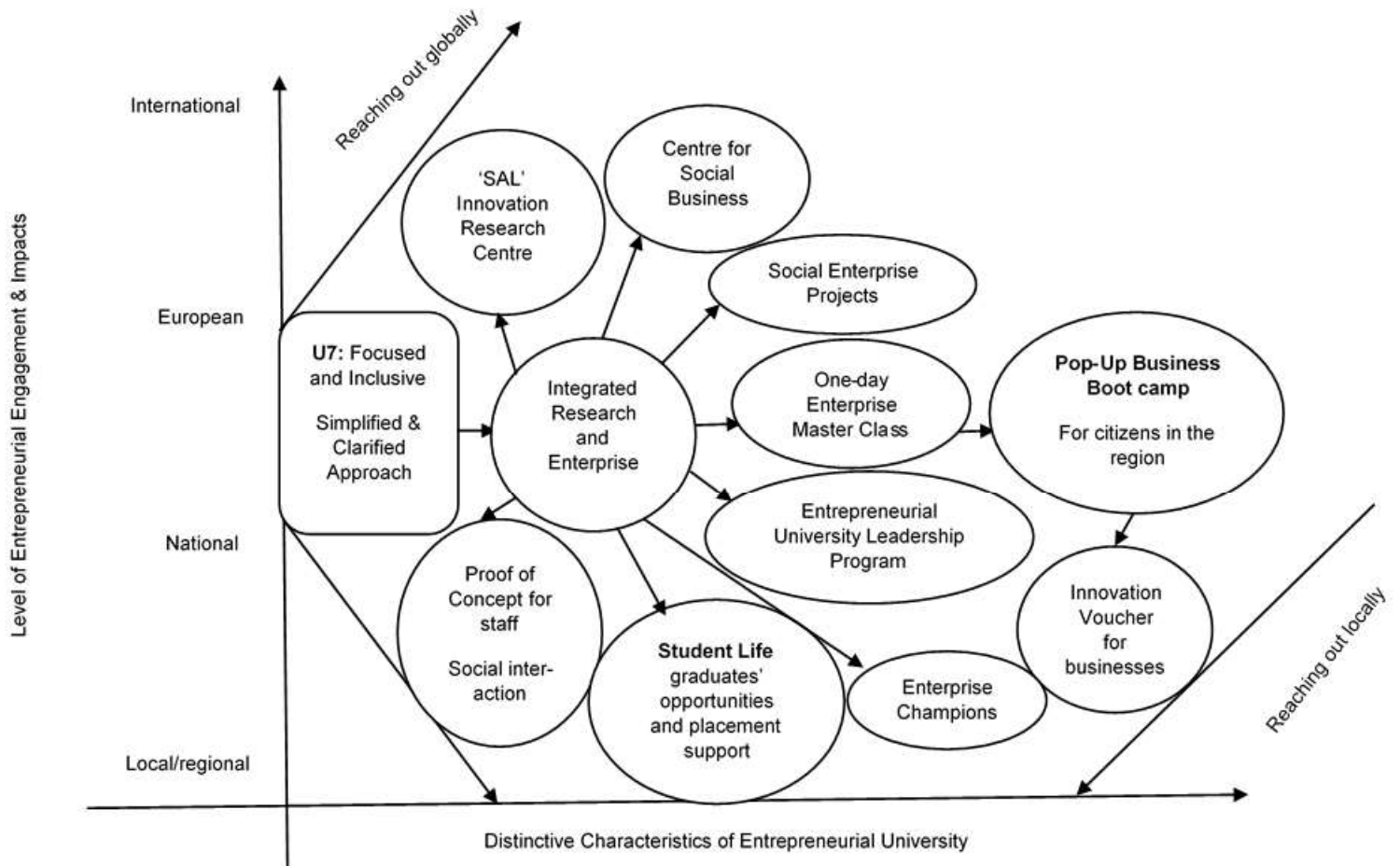**Figure 34: Entrepreneurial characteristics model of U6**

The desire to become more entrepreneurial triggered U6's entrepreneurial appetite by putting in place the initiatives shown in Figure 34. Through the **Innovation, Enterprise and Entrepreneurship Institute**, U6 is contributing to entrepreneurship practice and the management of small business via highly rated projects. Consequently, the Institute was established in 2007 as a hub that engages the University's researchers with other institutions across the globe including China, Cyprus, Germany, Poland, New Zealand and the United States thereby connecting research with teaching. By disseminating best practice, the UK-based Institute seeks to support knowledge development that can lead to successful knowledge transfer and application for policy planners, practitioners and the research communities. U6 uses this outward-facing activity to focus on specialist research projects in the wider context of IEEC to be known for groundbreaking contributions.

662

In addition to this, U6's Centre for **Small and Medium Enterprise Development (SMED)** is committed to providing support to businesses and social enterprises. As a gateway to U6, SMED stimulates access to innovation and growth through business support programmes including bespoke training, leadership development, and CPD. In doing so, U6 is making a leading-edge contribution to improving the regional community by fostering socio-economic transformation.

Migrating away from being a local education provider to a globalised institution that reaches out to wider coverage and put education into use, U6 spreads its tentacles by having campuses in different locations including Burnley and Cyprus. This expresses its international outlook which is indeed a crucial aspect of an entrepreneurial university.

Participants summary of the discussion on what their key entrepreneurial initiative entails suggest that the main reason is the perception that being entrepreneurial is profiling.

University 7

Figure 35: Entrepreneurial characteristics model of U7

As part of a major organisational restructuring to aid reaching out globally, U7 established the multi-disciplinary **Innovation Research Centre** to build on its world-class research by providing know-how and expertise in advancing 21st-century technology. Consequently, this contributes to business and economic growth at both national and international levels. Further to this, the University has an outstanding track record of working with leading international organisations.

664

Through this Centre, U7 possesses specialist acoustics facilities which facilitate its working relationship with multiple and diverse entrepreneurial actors including audio, construction, government, military, and motor industries within the UK and abroad. U7 international outlook is reflected through the Centre's six internationally renowned groups: Acoustics, Autonomous Systems Robotics, Informatics, Engineering, Materials and Physics, and Spray and Petroleum. Apart from being globally recognised for cutting-edge research ranging from food technology development to mechanical and electrical technology, this suggests that the University is dynamic and collaborative.

Participants description of how U7 interact with other entrepreneurial actors at both the national and international level, suggests there are several ways. First, U7 has good partner networks including the Chambers of Commerce and the others like European Network Partners. So, it uses all those routes and the close relationships with other universities to signposting people around the economy for enterprise partnership. Also, U7 gets referrals through their supply chains thereby maximising the pro-activeness of the academics with the industry. Second, it has an interface through the web and social media routes. Generally, it is the word of mouth and from the network through the activities, as pinpointed by the participants.

In response to addressing issues associated with the social enterprise, in 2013, U7 in conjunction with the Business School established a dedicated unit called **Centre for Social Business** to undertake interdisciplinary research on social business. This is of significant contribution to the economy because in many countries, particularly the UK, social businesses are performing better than their mainstream SME counterparts in terms of job creation, start-up rates, social innovation, work and turnover growth (McEachern, 2016). While it was established for the promotion of social enterprise, the educational focus of the Centre is to microfinance, business ethics, and sustainable communities.

Therefore, it is of importance to support enterprising students to build on their skills and knowledge. This in turn, impact on local, national, and international economic growths. There is the weekend session called **Saturday Enterprise Masterclass** for generating

665

ideas. The ideation session involves different thought cycle stages (innovation to development to actualisation). Visual, concrete or abstract element is used to help students understand their ideas. Another key activity is the **Social Enterprise Masterclass** which focuses on what social enterprise is, why there is growing interest and confusion about these forms of business. There are other masterclass sessions that focus on skills development around funding and finance, networking, pitching ideas, and branding.

The **Student Enterprise Society** is to engage and enable students from any discipline to tap into enterprise initiatives. The society works on life project to help students gain real-world experience that employers value. **Business Boot camp** is an intensive two days' event which normally runs up to five times a year. It is designed for students and graduates who have a passion for starting their own businesses to embark on a practical journey. The University also put in place **Postgraduate Enterprise** which involves postgraduate boot camp and postgraduate enterprise futures conference. The **postgraduate boot camp** is a one-day intensive event to discover the key elements of setting up a successful business. Likewise, the **Postgraduate Enterprise Futures Conference** is a one-day event that is run in collaboration with other nearby universities in the region. It aims to demonstrate the possibilities for being enterprising in research and starting a business. The attendees are postgraduates' student entrepreneurs in the UK.

In addition to all these, U7 in strategic partnership with the City supports different sets of development activity, mostly via student volunteers and academic support. For example, through the **Big Lottery Funded** project on leadership and change with twenty social businesses, U7 impact on generating social capital throughout its regional business community.
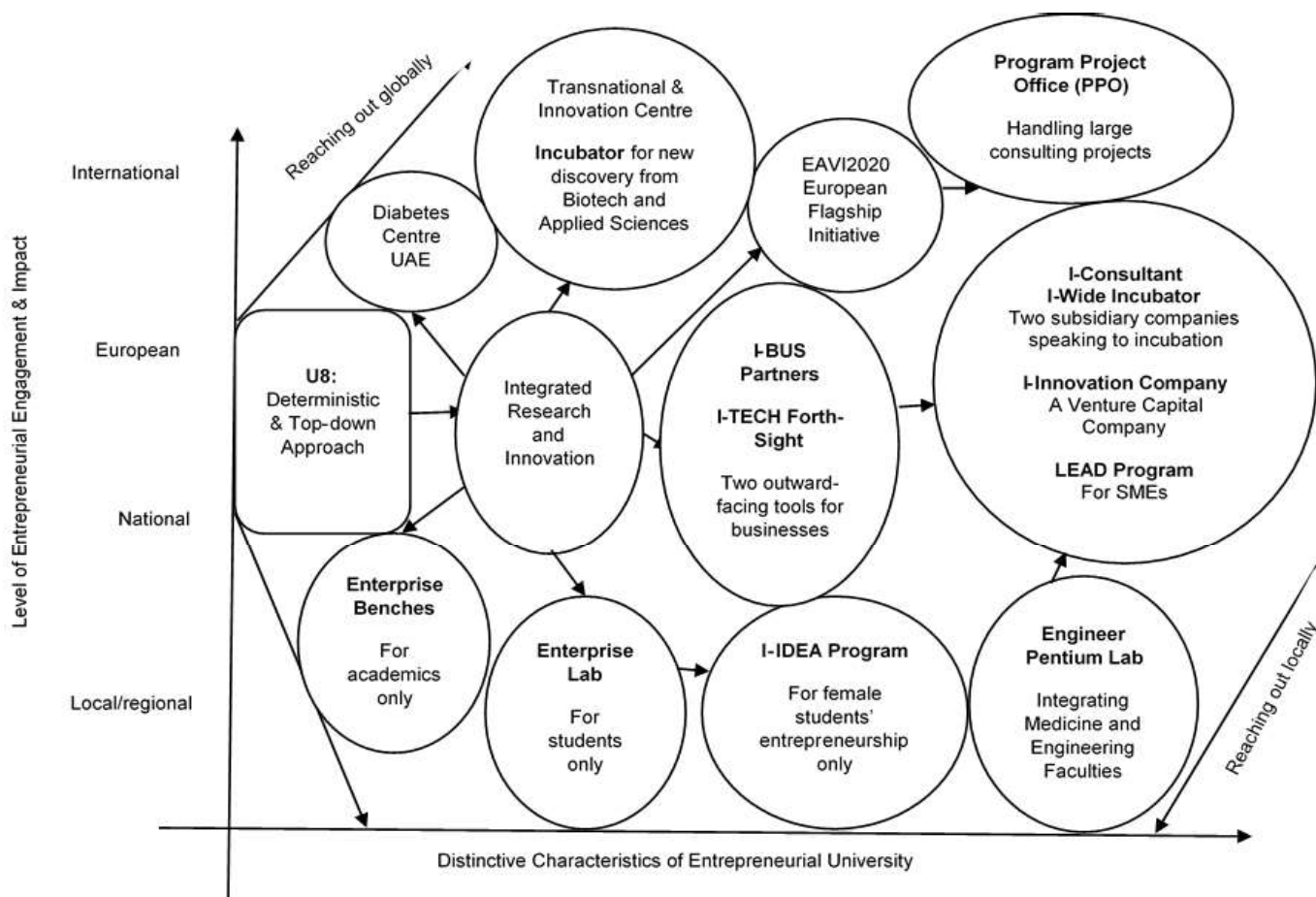
Figure 36: Entrepreneurial characteristics model of U8

As shown in Figure 36, and to clarify how U8 engages corporate partners with its entrepreneurial activities at the international level, participants exemplified that they have a very large collaboration with Shell and Cartel Petroleum in Oil and Gas which is looking at carbon storage in the carbonate rock type which is present in the Qatar region. So, that is quite significant long-term ten years' grant challenge for U8. Another example is U7 engagement with GSK where it has the **Engineer Pentium Lab** which is looking at new approaches or latest medicine discovery and it is multidisciplinary as it brings together departments in the faculty of Medicine and faculty of Engineering. "We do this in two ways:

667

One is working customers with our academics, for example, an academic might have met somebody from industry, at a conference that has no idea to convert that initial meeting into a discussion about collaboration and then put all the contracts in place to achieve that collaboration. So, we can help academics to work up individual proposals" (P32/L28-38/2016).

The above example is another proven record of the international outlook of U8. Undertaking collaborative research projects with colleagues abroad is a significant viable mechanism for internationalisation. Identifying further, participants provided another example of a different country where U8 has internationalised. The second area is called **Enterprise Benches** which is where an academic has an idea for collaboration where there is an academic interest as well as commercial interest and an example of that is the Diabetes Centre in the UAE (United Arab Emirate) which is designated Centres for Diabetes and where U8 also have an opportunity to do further research in Diabetes.

At the regional and national level, some universities in today's world of work are acquiring city centres and government properties to boost their entrepreneurial capacity. U8 is one of these institutions as participants emphasised the importance of acquisition, in specific land in a very visible area to erect the transnational and innovation centre. Through the interviews, description revealed that U8 is embarking on the wide City by acquiring land to create a second campus in London which is close to the BBC service centre. The first building there is called **Transnational and Innovation Hub** which will allow U8 to collocate large and small companies' onsite with the academic community. It was acknowledged that building capability in terms of establishing a campus in London is new and quite exciting for the University. "Part of that is an incubator for spin-out companies growing from Applied Sciences and Biotech" (P32/L194-201/2016). In a similar way with U4, U8 is another University with the new business formation in the form of spin-out activities.

Further to this, at the local level, participants described how the University works with innovative SMEs sector and micro companies to help them become more

entrepreneurial. First, on the side of the SMEs, U8 engages in different ways. It has a subsidiary consultant and many of the clients with the consulting company are SMEs. So, there is a strong client base there. Some of its research engagement is with the SMEs although it finds that in most cases the large companies have the money and the time to invest in longer research projects and so their research engagement is three times quite larger than that of the SMEs which is quite short and small program. There is also an educational program with SMEs, for example, the **LEAD program** which is a joint venture between the Business School and London Stock Exchange. "This is about 16 or 20 high growth SMEs in the UK as this program is for them" (P32/L203-211/2016).

Second, on the side of micro companies, participants described how they are helping them to adapt to new changes in their business environment via the incubator which is specifically for micro companies. It helps these companies through the provision of a **space** with equipment within the wide space that can cost them a million to acquire. So, they can make use of the equipment at a lower rate. So, that allows them to take their startup cash and the cash can last longer by being in the incubator.

Putting together how the University's external orientation is defining its entrepreneurial stance regarding community and public engagement activities, participants proclaimed that other examples of the work with SMEs includes helping science teachers on how to teach science and is a free servicing in the UK but something we charged for outside of the UK. Hopefully, it is a win-win and U8 has been improving the science education around the world but also receiving income for that to push that back into our research mission. "So, these are enterprising ways of engaging. I think there are many entrepreneurial activities that will come under our banner of knowledge exchange and that is probably the common denominator of how we define our entrepreneurial activities" (P32/L178-185/2016).

Having put in place these key entrepreneurial initiatives that reach out to local, national, European and international levels, U8 has a system that manages progress and success of projects with multifaceted relationships, said the participants.

669

U8 has the Program Management Office which provides management of more complex operations that can include consulting, management of EU-funded research program where there might be 20 or 30 academic partners and may also include operational support for some of its overseas activities, for example, its recent BioBank in Qatar.

Describing further how the Program facilitates and contributes to the entrepreneurial development of U8, P32 shed light on how it has been used:

"The Office runs some very large consulting programs in the Horizon 2020 program and that includes anything from child health through to Engineering activities. Such program might run for two or four years and might be 20 or 30 academic partners involved because it usually requires solving complex activities. To give a specific example, there is one called EAVI2020 European Flagship Initiative. This is the European AIDS Vaccine Initiative (EAVI) of £23 million Euro-financed by the European Commission under the health program of Horizon 2020 for research and innovation. It brings together leading HIV scientists from public organisations and biotech companies. Led by us, EAVI2020 congregates researchers from 22 institutions pooling their knowledge and expertise to develop innovative vaccines" (P32/L73-82/2016).

University 9
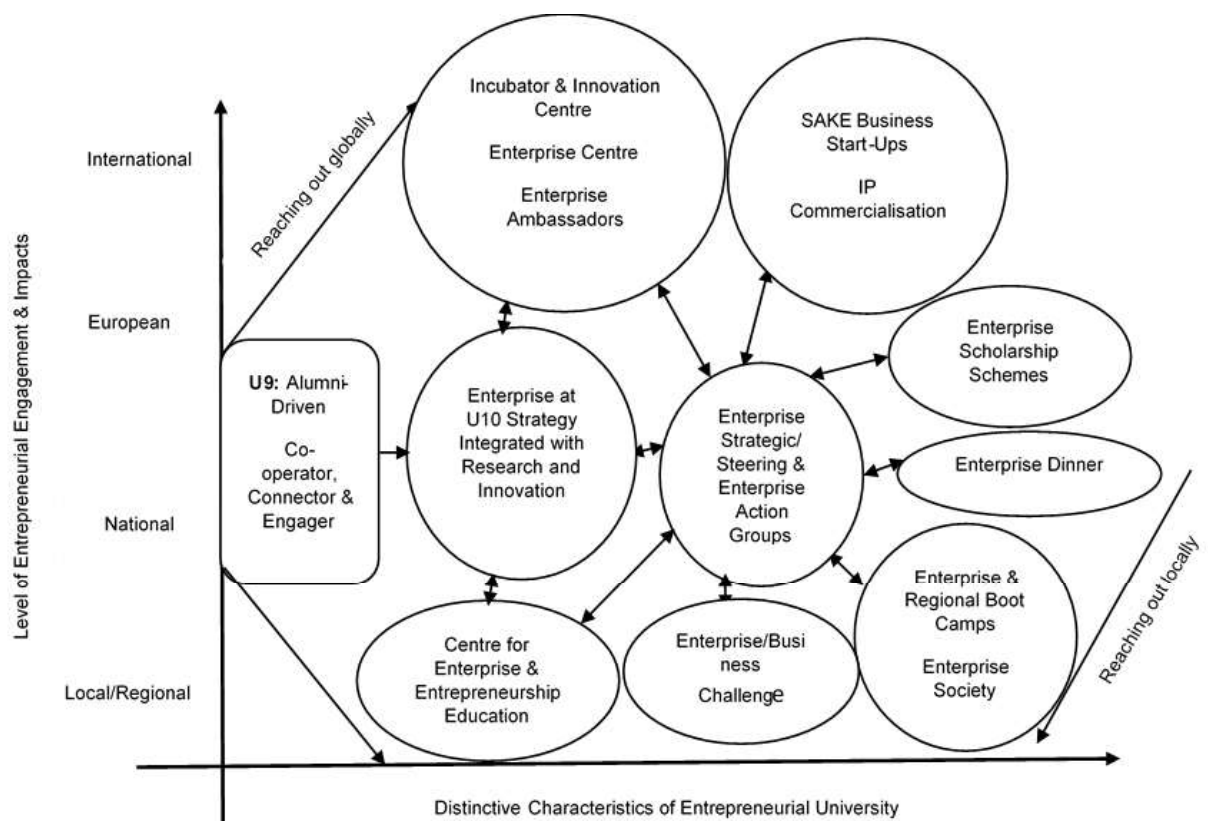
Figure 37: Entrepreneurial characteristics model of U9

U9 is engaging with its external community and even going beyond reaching out to local and regional levels to national and global levels. Through SAKE Business Start-ups and IP Commercialisation Unit, U9 protects and manages students owned IP which generate economic contributions by developing them into companies, said the participants.

Through SAKE, students must complete an application process which then goes to a panel and the panel decide whether to give the funding. Sometimes, the funding is reduced because they do not need more and sometimes it increases because they need more. This is called Grant Funding because U9 does not have core funding at all. Granting the students, the grant funding is the unique part of SAKE because they are funded by alumni or gift donations which are then given straight to the students and graduates to help them with their businesses. With the grant funding, no payback and U8 does not take any equity in the Company. So, it is important as all the IPs are owned by the students, all the

671

businesses are owned by the students, and the University does not take any equity stake in the Company. "So, it is more about giving them the best chance to get up and grow" (P14/L59-69/2016).

Also, through its incubation space, U9 supports the growth of various businesses in the region, said the participants.

There are anything and everything in the incubator. There are baby clothes, students who are fashion designers, through to High Tech section, automatisation and those who might go to larger organisation for big data analysis. There are businesses making over £10,000 turnover a year and some getting up to £2 million a year. "So, there is product business and there are service businesses, but they must be genuine, credible and viable" (P14/L79-84/2016).
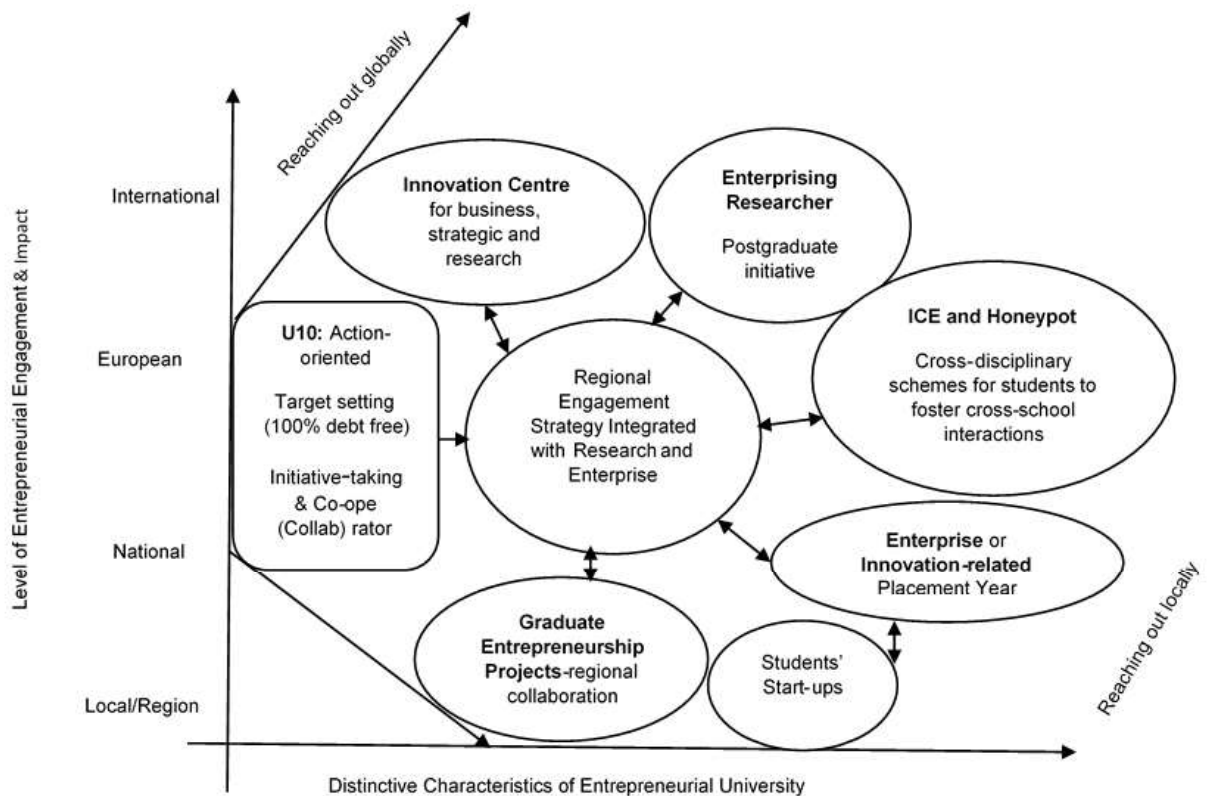
Figure 38: Entrepreneurial characteristics model of U10

To facilitate university-industry interaction, U10 has been doing this through its innovation centre, said the participants. The **Innovation Centre** which was set up as a subsidiary company of the University deliberately as an independent company from the University in the eye of business. This is an innovation centre, not an incubator. So, different companies, different sectors, and different sizes of companies are collocating alongside the University basically to foster partnership relationships.

As part of this, the University was recognised for its entrepreneurial appetite as one of the winners of THE EUYA. Some participants commented on what brought about this marvelous achievement, stating that:

"The University is Entrepreneurial University [] and most of that has to do with our **relationship with external companies and bodies** and we are quite innovative about how we use our own strategy in partnership with external companies. Then tap into schemes externally which allow us to get the money. So, for example, we have Company X put certain money into a partnership, the University puts in some strategic funding in and then that pot is being used to draw down more money" (P3/L33-39/2015).

Further to this, participants acknowledged the importance of trying out initiatives. Experimenting ideas and sharing best practices of what has worked well has helped U10 to feature in government's reports by showing an example of how universities should be working with the industry and how they should be **working with SMEs**, helping them to operate.

University 11
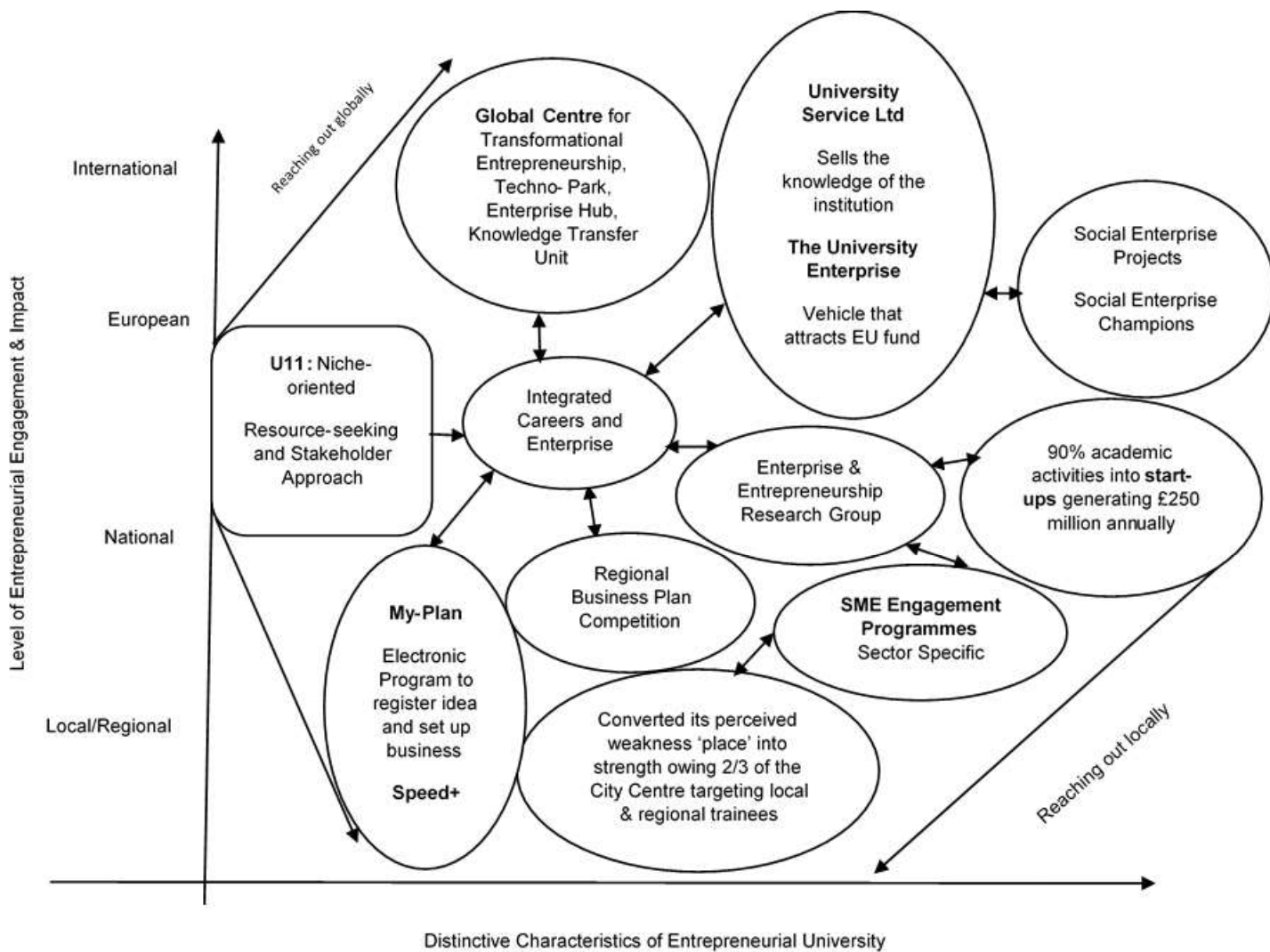
Figure 39: Entrepreneurial characteristics model of U11

675

Some of the U11 most recent developments include new campuses between 2010 and 2012- London Campus and U11 College respectively. This suggests an expansion and the need for U11 to reach out to more people in the country. Further to this, and in similarity with U10, U11 is pushing the enterprise agenda through entrepreneurial pedagogy:

"It is around what I will term as the Entrepreneurial Pedagogy. So, encouraging staff to engage in entrepreneurial delivery methods in their classrooms [] we already have some excellent educators who use innovative methods, use technology in their classrooms, and create new ways of engaging with students, we have flip classrooms, we have students focus learning, and we have these activities. But it is an exception rather than a norm in the Business School because Business Schools are about large class teaching" (P8/L31-59/2015).

Though entrepreneurial pedagogy might have not evenly spread across all faculties and schools this is an expression that U11 is being innovative in teaching entrepreneurship.

Besides, becoming more entrepreneurial was a "radical transformation" for U11 as different sorts of restructuring has taken place, said P9 (L64/2015). He cites some examples of how this has happened: "…recommended that the IAE and social enterprise need to split up so that all the business start-ups side will sit in The University Social Enterprise initiative and all academic related will sit in the Global Centre for Transformational Entrepreneurship initiative. So, the academic was separated from the practical bits in terms of the restructuring" (P9/L83-87/2015). This approach has proven effective because U11 continues to experience an increase in the number of students seeking enterprise support, as noted further by P9.

"We use My-Plan as the start point for engaging with them and we can get them an offer in a range of different ways. I have about 500 inquiries in my diary in the last 12 months. So, which is higher than what it was previously" (P9/L38-40/2015).

To demonstrate what the University is doing to drive IEEC beyond the national community to encompass international clientele, U11 is globalising. By example, the

676

University's Vice-Chancellor is an extraordinary Professor at a university based in Western Cape, South Africa. This reflects the development to strengthen education, research and substantial industrial engagement between the Western Cape-based institution and the University.

Also, the leader who oversees the University's **Global Centre for Transformational Entrepreneurship** has initiated a joint initiative of this with the Western Cape institution as part of an international doctoral Academy and a reach out to businesses. Going global is one way for U11 to build a worldwide reputation for IEEC in the HE sectors. Perhaps, "internationalisation is a method to integrate an international and intercultural edge into the tenacities of academic. The international strategy of the university should reflect the entrepreneurial objectives such as those explicitly set out to attract international and entrepreneurial staff" (European Commission and OECD, 2012 p.14).

Therefore, international exposure at all levels is a character in creating and sustaining an entrepreneurial culture in the university settings. Further to this, the EC/OECD's statements suggest that it is not being possible to be entrepreneurial without being international but being international does not mean a university is entrepreneurial. The elements underpinning the internationalisation aspect of a university adopting an entrepreneurial approach are best summarised as:

"Entrepreneurial University supports international mobility via overseas internships, exchange schemes, studying abroad, incentives and rewards as well as scholarships. The university integrates universal dimension into classroom-based activities. Strategic international partnerships form an integral component of the university by maximising external contacts and overseas graduates to feedback into education and research programs" (European Commission & OECD, 2012, pp. 14–15).

Sharing his view using a new concept which was proposed as transformational entrepreneurship, P7 comments on the internationalisation aspect of U11:

"We have within the University look to expand our research contribution and we obviously extend to an international market and make the University globally recognised, a brand for research and teaching. The transformational entrepreneurship elements are essentially defined as looking at entrepreneurship that has a high economic impact but also has a social connection as well. So, rather than say a lot of social enterprising has a lot of high social impacts but the economic impact is not generally brilliant. So, basically, it is taking social enterprise and increase that sustainability, so it makes a much more economic impact than the average entrepreneurship in starting small SMEs" (P7/L57-65/2015).

The ideology behind the transformational entrepreneurship concept is that since becoming more entrepreneurial is a big part of that competitive edge in the HE sectors, it is losing it pathetic because every institution is expected to act entrepreneurially. Therefore, U11 is carving a niche for itself by going through the transformational route. "It is something much more focus", added P7 (L91/2015).

Aside from focusing on internationalising and globalising, impact wise U11 is reaching out to both the local and regional community in various ways. One of the methods is the social enterprise for community initiative. P9 describes this in detail outlining that:

"Social enterprise is a new thing for the University really and it is part of the University commitment to work more closely with the community where it lives in. This is an important aspect. For example, we are working with up to **five community partners** with whom we are developing business partnerships and setting up businesses with the YMC for example in terms of designing activities for the community. So, we have several things which social enterprise a useful tool is to enable that to happen" (P9/L105-111/2015).

Other than the social enterprise initiative for social entrepreneurs' community, the University has several subsidiaries now to support its enterprise culture. P9 itemised some as thus: "we have established several subsidiaries such as The University College which addresses further or higher education, we are opening a campus in Scarborough in the next few weeks, and already there is a campus in London, we continue to develop international partnerships" (P9/L127-132/2015).

678

The opening of more than one campuses in the country thereby offering education opportunity to more audience suggest the success of being an entrepreneurial university, where "the culture is about focusing on staying ahead of the game not going backward but keep moving forward. But there is also more interest as part of this is about growth. We try to find ways to grow as you know the normal mission of universities is to address research, students' experience and so on" (P9/L123-127/2015).

P9 describes further key entrepreneurial designations, stating that:

"There is an entrepreneurial attribute which is driven from the centre, from the Vice-Chancellor to grow develop and respond to opportunities as they arise. For example, he recruited the **Director of Enterprise and Innovation** back to the University to set up the Global Centre for Transformational Entrepreneurship. So, the Vice-Chancellor is always interested in looking at new business opportunities and finding ways of driving growth" (P9/L142-179/2015).

Likewise, the appointment of **Pro-Vice-Chancellor for International Development** is another entrepreneurial designation that indicates the international management structure supporting and overseeing the University's international activities. This is a critical aspect of the entrepreneurial university. Furthermore, in developing entrepreneurial capacity in its staff, U11 encourages academic staff interested in entrepreneurship to take part in the **International Entrepreneurship Educators Programme**. In partnership with U11 Enterprises, **Enterprise and Entrepreneurship Development Applied Research Group** is another means through which the University stimulates entrepreneurship in all staff members across the University. The Group aims at advancing research activity around key themes such as entrepreneurship education, social entrepreneurship, international entrepreneurship, as well as entrepreneurial leadership. Thus, demonstrates the development of enterprise capacities in the staff.

There are also funding support for the students facing practice: "There are two types of funding: one is about **'Try-It'** which means you have an idea for a business and you get £500 to test it out. So, we will give you the money to go and buy the kits or whatever to try

679

it and the second is **'Scale and Growth'** which is about investing in existing businesses to grow and develop so this is the first stage of the business growth" (P9/L72-77/2015). The **Institute of Applied Entrepreneurship** to coordinate the teaching of entrepreneurship education for U11, said, P8. P8 explain further the uniqueness of the Institute:

"It is different to certain places because a lot of universities' Business School owned enterprise or each faculty has their own mini enterprise team or something like that. But it is a very clear part of the University's strategy that, that was not going to be the case" (P8/L23-26/2015).

Clarifying further what the Institute's function is, P9 adds: "this initiative was an Institute which has two parts to it; one is about business start-up advice and support and the other part is academic and research" (P9/L14-17/2015).

P9 summarises further other major characteristics, describing that:

"We have an electronic programme called **'My-plan'** where you are encouraged to register your interest and set up a business. We then send you a business plan for you to describe your business then we can guide you in the best direction forward to get you started. So, for example, we run a programme called **SPEED PLUS** (Student Placement for Entrepreneurs in Education Development Plus) which is a programme you must apply to get onto and it runs three or four times a year and we have 15 places on that you get up to £15,000 worth cash plus business advice and support and it runs within 12 to 13 weeks' programmes and we may suggest that you applied to that. Or we may suggest that you speak to the IP people if there is any intellectual property out of the business" (P9/L27-36/2015).

To be eligible for SPEED Plus, applicants must not have already started trading and must have the intention of setting up their businesses in the West Midlands region. However, this provision excludes foreign students based on their VISA status which disqualify them from establishing a business in the UK. Successful applicant benefits from the following: grants, practical training, business address on U11's Technology Park, six

680

months' hot desks, mentoring, networking opportunities, and signposting to other funding sources and advice.

University 12
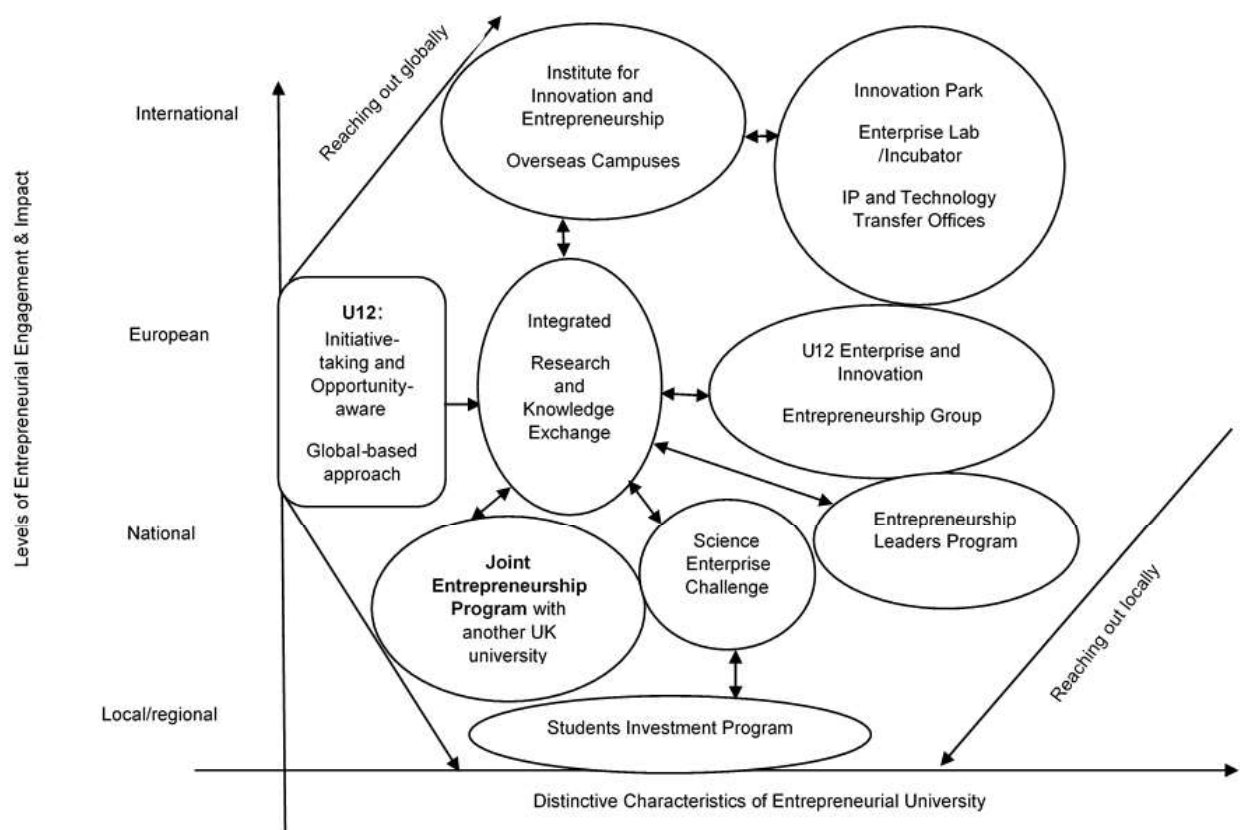
Figure 40: Entrepreneurial characteristics model of U12

With a strong connection to the VC willingness to take the risk, the international outlook of U12 regarding overseas campuses proves its diversity inclination to ensuring university entrepreneurship is all-reaching. P15 explains the extent to which internationalisation is an outward-facing entrepreneurial practice for U12:

"He spotted the opportunity for opening a **campus in China** and he also spotted the opportunity for opening a **campus in Malaysia**. So, unlike any other universities in the world, we are the first University to go out and establish a massive campus in China and it is huge and a big building same in Malaysia. That was a very entrepreneurial thing to do. It

681

was a huge risk to take and it was incredibly expensive, and he went for it and we were setting up at the same time" (P15/L133-140/2016).

This growing diversity enables U12 to learn and share entrepreneurial practices among its varied campuses as well as drawing lessons from other universities in other different countries. For example, P15 expounded further:

"Apart from all these is what other countries are doing. For example, one of the ways I managed to persuade people to do things here was by comparing them to what is happening in the U.S because I in the early 1990s taught entrepreneurship modules in the MBA and in a place called the Klamath College which is a good University in California. So, we used to go there for the whole summer and I used to work there six weeks and three days a week, which was delightful, but I can then come and talk about the experience saying do you realise what is going on at Harvard, at MIT, at Stanford and some of the other big universities in the States. They got medium and large but also all sort of things which we have not get anywhere close to them, but we could be the leader in Europe because the European universities are even further behind where we are" (P15/L376-386/2016).

Apart from the international diversity of the U12 entrepreneurial aspect, through its innovation park, it has been taking knowledge discovery through to application. P15 provides an overview:

"…There is a great focus on technology transfer. So, that is totally research discoveries and commercialising them or putting them into the community and that transfer process is something universities did not use to do at all. It was just the occasional situation of setting up a business based on what they discovered. We are the first to try and engrossed that capability. For example, if you go across there you will find a new building going up and you will be in the middle of our **Innovation Park**" (P15/L141-148/2015).

Besides, the University is one of the four **University Enterprise Zones** across England aim to encourage universities to strengthen their roles as strategic partners in local

682

growth and encourage the development of incubator space for small business organisations. P16's expression reveals:

"In the Lab, we have space where people come and have a place to work and everything is there; they have a desk. We also have corporate partnerships with law firms and accountants, they provide monthly surgery and we also have specialists in different sectors; in Sports sector, in Computer Science, and in Marketing. We also have a whole range of mentors who are our alumni which kind of provide us with fast-track companies" (P16/L16-22/2016).

To wrap up the discussion on the dominant initiatives defining U12 entrepreneurialism, P15 remarks:

"U12 is at the forefront of developments and its entrepreneurship education, technology transfer, the commercialisation of research and all of those things are also wrapped together. So, as the Entrepreneurial University of the Year, that is where that awareness comes about. It is not just an awareness of how things are changing out there but an awareness of how things are changing in your University, which have commercial implications and possibilities out there. So, it is engaging with university research and teaching and learning and more engaging in much more in terms of the community; the local community, the national community and the international community" (P15/L160-168/2016).
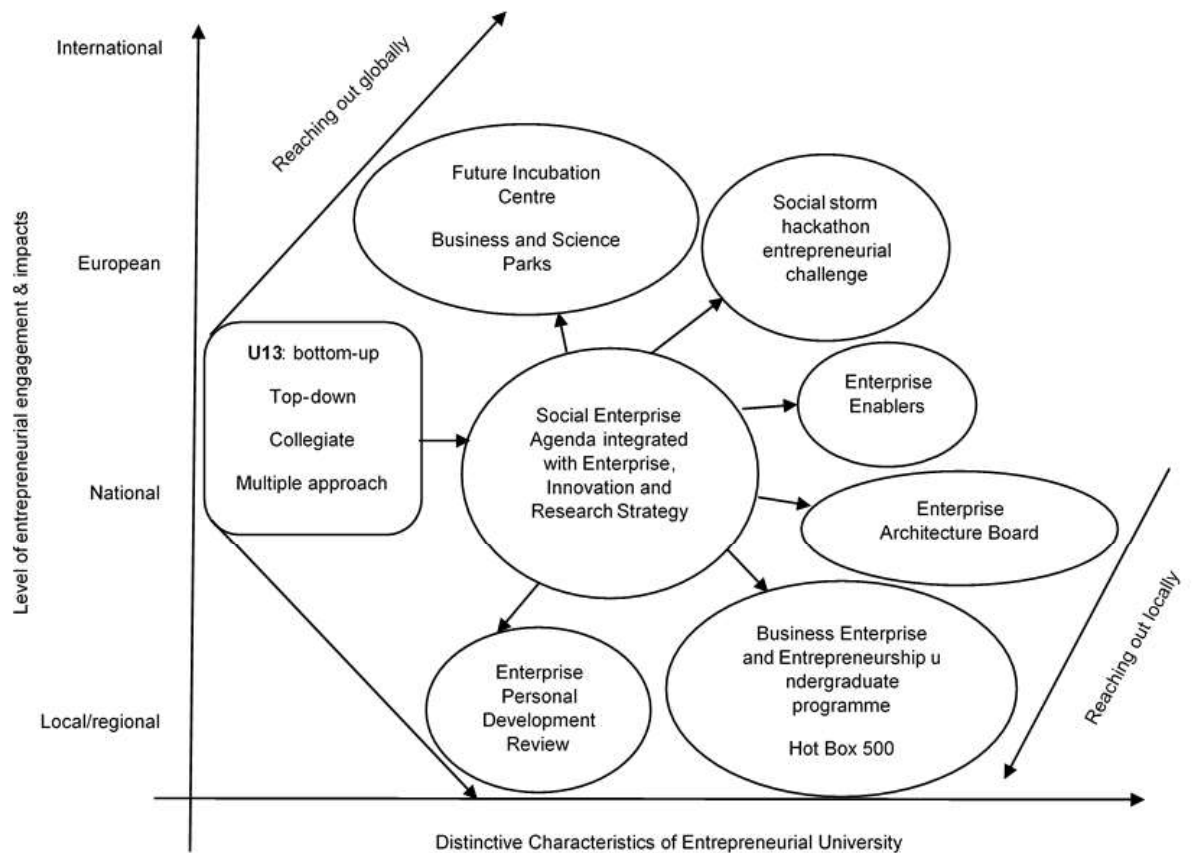
Figure 41: Entrepreneurial characteristics model of U13

With the strong backup of the **Enterprise Architecture Board** which constitutes the VC and the strategic board, the entrepreneurial endeavour of U13 becomes more superb. This newly developed top-down initiative aims to align the University's commercial strategies rather than devising a strategy for commercial activities. In the form of a steering group, enterprise architecture board is knowledgeable to make business decisions associated with the creation of IT commercial values. As shown in Figure 41, to express the approach underpinning U13's enterprise endeavour, participants used different terms such as top-down and bottom-up approach, collegiate and multiple approaches.

684

In response to the expectation that universities must switch role from teaching and research to engaging more with industry, U13 has been outward-facing by working with business and non-business organisations. P30 describes:

"There are numerous initiatives. First, we work closely with City Council and Local Enterprise Partnerships (LEPs) to help win allocations from central government funding pots like regional growth fund and the ERDF for example. We as a University help to get the allocation of that funding. So, our role as a University is to help to attract and act as an allocator. Also, we act the role of disseminating that funding to businesses across the region" (P30/L186-191/2016).

To reach out to the local and regional community, U13's incubation and one-stop shop support were put in place. P29 and P30 describe:

"We also have start-up incubation type offers to provide **incubation space** and support which covers the entrepreneurship side of the enterprise agenda" (P29/L91-95/2016).

"We have a one-stop shop portal for businesses and offer support where they can access facilities, laboratories, academics, consultancy, funding or whatever that might be" (P30/L199-202/2016).

In keeping track of knowledge exchange activities and maintaining industry partnership relationship, P29 talks about Research Park and innovation centre:

"The Directorate of Enterprise and Innovation is part of the academic structure. Underneath this, we run the **Science Park and Innovation Centres**, industry engagement and knowledge transfer partnerships. So, that kind of thing lives within that directorate and strategically, its role is to develop the overall roles, aim, and objectives for the enterprise activities" (P29/L98-103/2016).

Further to this, P30 describes how the University facilitates the relationship between academics and commercialisation organisations:

"Second, we establish relationships with commercialisation companies to identify areas of research that are commercialisable with what the academics are doing, protect that

685

intellectual property and then to commercialise it in whatever way. So, in a way, the commercialisation of research speaks to impact" (P30/L193-196/2016).

Regarding the Future Centre, P29 and P31 describe how students explore practical business issues which are of benefit to developing their entrepreneurial skills and talent as well as reducing the cost for the organisation that assigned the task:

"More recently, we have developed an entrepreneurship centre which is called the Futures Centre and has been around for two to three years with more focus on certain activities around the enterprise agenda" (P29/L93-95/2016).

"We have **Inspiring Futures** which is about local businesses coming to us for advice with problems that they have our students in small groups to work on that problem for a month and give a presentation back to the client and that forms part of their assessment but also gives them that real-world experience. Then the client chooses whether to act on the results after the students gave their presentations." (P31/L135-140/2016).

While rounding up the discussion on the dominant characteristics at U13, P31 remarks on the role of curricular and co-curricular programmes in inspiring students' entrepreneurship and nurturing students' entrepreneurial mindsets:

"We also have the modules themselves within the curriculum where students undertake the assessment. For example, **hot box 500**, where students are given 500 waste units from a business and they must redesign the units for community social and environmental benefits and they are assessed on the presentation on how they give answers to that brief and that is great because we get to work with a local company and they get to see whether they have the landscape to change their businesses to something different and something better for social good. So, these are a range of examples that we do on our programme which combined to give that entrepreneurial edge" (P31/L149-156/2016).

University 14

Increasingly, U14 has been developing capacity through providing support on an ongoing basis coupled with a broad range of programmes at graduate, undergraduate and postgraduate level. The wide range dominant activities defining U14 as entrepreneurial are mapped in Figure 42 and explained underneath.
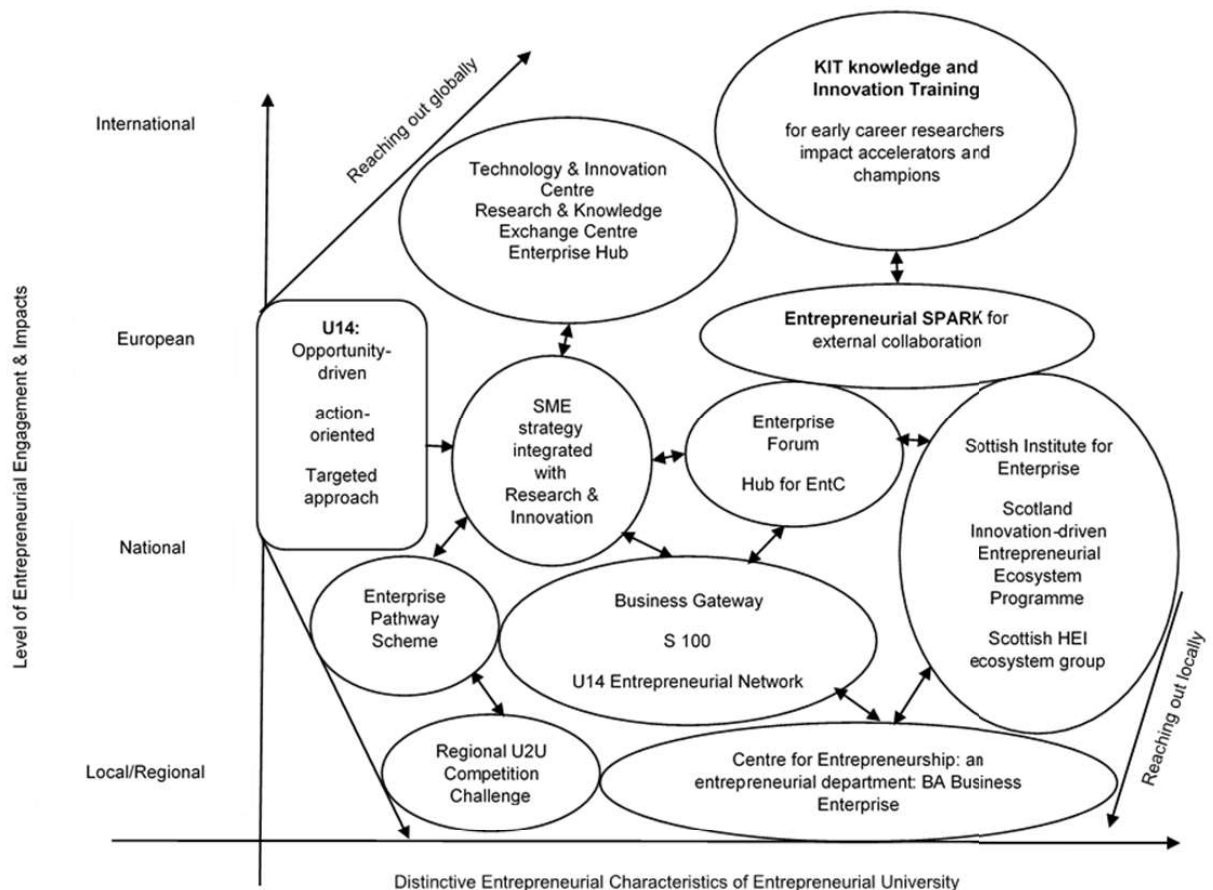
Figure 42: Entrepreneurial characteristics model of U14

U14's entrepreneurial activities target support for academic, business and the wider community in local and regional areas as well as beyond the Scotland region through the Enterprise Hub. P20 shed light:

"…The **Enterprise Hub** where we are not taking any sort of active stake in these businesses. With our support, guidance, resource and some small amount of funding that

will allow organisations and innovative entrepreneurs to take steps to develop their businesses and we ask nothing in return" (P20/L225-229/2016).

Opened in 2014, the **Technology and Innovation Centre** (TIC) is a catalyst for transforming the partnership approach between academic, business, industry and public sector. The Centre works with different stakeholders to solve economic issues. TIC accelerates the way researchers in academia and industry collaborate and innovate together on projects that can span the future of the society. In addition, TIC is the backbone of Scotland's International Technology and Renewable Energy Zone (ITREZ), a global research and development hub that link university staff with industrial staff to work together for the development of the offshore renewable sector. In recognition of the University effort in transforming research ideas to commercialise activities, between the periods 2003 to 2012, U14 was ranked 2nd in Scotland and 5th in the UK for spin-out formation.

P26 comments on the number of people that TIC can accommodate and how TIC has been enhancing the University entrepreneurial ecosystem, stating that:

"With that new building at the bottom of the hill when you go out of this building, the **Technology and Innovation Centre** within which we have over 500 researchers working in there very closely with some industry researchers. So, we have academics researchers working closely with industry researchers. The first two floors are used for the conference centre. So, there is a lot of potential for the exchange of information and new things developing" (P26/L196-201/2016).

These academic-industry facing activities were complemented by alumni-student engagement, that is, past students working informally and closely with current students. P20 provides some examples:

"We have a very strong **alumni engagement** and Enterprise Partner Programmes where successful entrepreneurs who happen to be Strathclyde's alumni give us their time freely. We have currently run series of activities through the **Enterprise Partner Programme** where they give a considerable amount of support to entrepreneurial students, they help to sharpen up the quality of our programmes, and they help to identify

688

opportunities and commercial viability. They also provide in-class or in programme support to a variety of programmes across the University our Design, Manufacturing, and Management Courses as well as help students to develop their products. We have these entrepreneurs-alumni also as key mentors coming in and engaged in a lot of decision-making" (P20/L241-250/2016).

In comparison with teaching-oriented universities, the entrepreneurial aspiration of U14 as a technological-based institution primarily focuses on spin-out rather than the start-up activities of student enterprise that characterised the entrepreneurial aspirations of the majority of the teaching-focused.

University 15
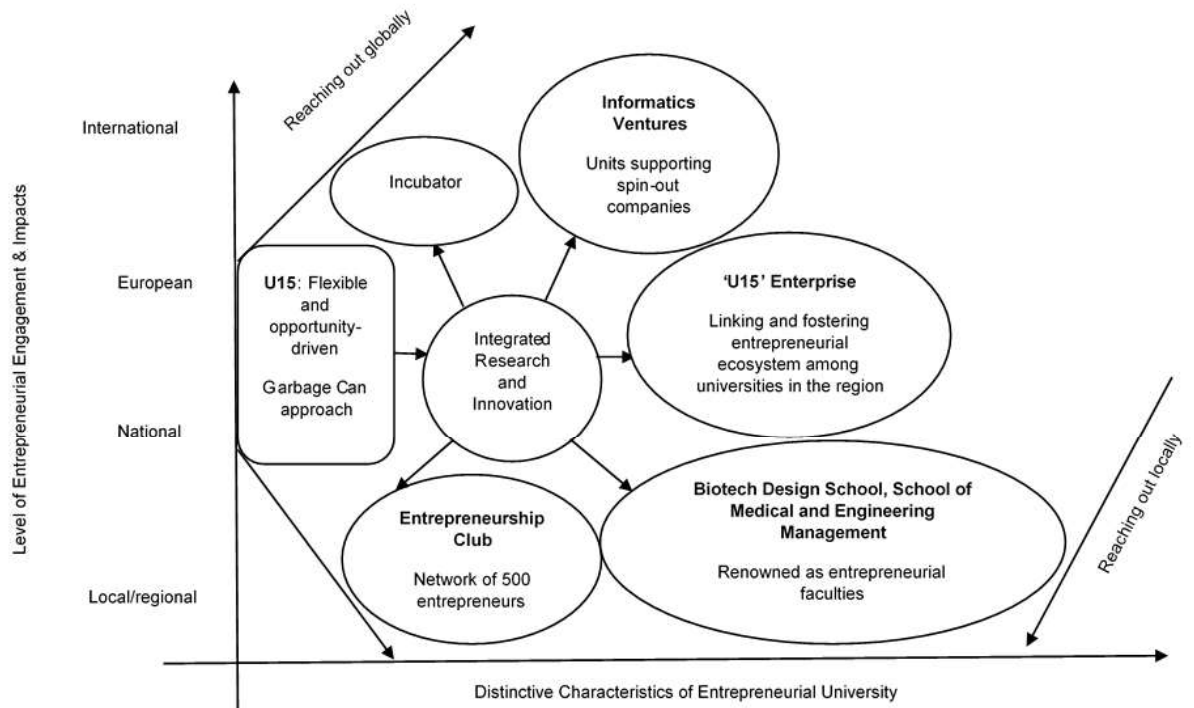
Figure 43: Entrepreneurial characteristics model of U15

In explaining how universities differ in their entrepreneurial transformation, P28 compares U15 with other similar peers in the HE sectors and what it means for the University to be flexible as a pre-1992 research-intensive institution that is often rooted in traditions and routines. He describes:

"Also, the support and flexibility of the university to pursue entrepreneurial activities are important. Then the university must incentivize that type of activities. I think part of the advantage that U15 has is that it is a University with entrepreneurial momentum. So, for me, these things do not happen overnight it takes a long time to put the system you need in place and have the support you need to realise them. In addition to that, U15 is a research-intensive University, for example, if you look at Stanford University which is also research-intensive, they both have different entrepreneurial responses to these different opportunities. So, I think it is the combination of both being a research-intensive university

690

and having research being incentivize for commercial potential in the private or public sector or where ever. So, for all those types of things to take place effectively, there must be that history; that is, it must have that type of institutionalise culture within it" (P28/L73-87/2016).

Apart from being flexible, the statements above suggest that to become more entrepreneurial, it requires adequate planning coupled with putting a support system in place to ease activities. Further to this, P28 describes how the University has managed to respond to changes in the sector, stating that: "I think U15 approach can be described as the Garbage Can Model, a decision-making process of organisational choice. The model was proposed by March and his colleagues. So, our University used the garbage can approach" (P28/L90-92/2016).

According to Cohen et al. (1972, p. 1), garbage can model is the way an organisation makes choices and operates based on "inconsistent shared goals". This implies that U15's entrepreneurial response is learning through action, operating based on experimentation. The University managed to survive entrepreneurial transformation based on a set of loosely collected ideas rather than working on consistent and standard procedures. This could be one of the reasons that the University integrates research with innovation strategy, as depicted in Figure 43. As such, the University's entrepreneurial activities evolve continuously and the boundary between the strategic group and other organisational members are not based on a coherent structure.

Nevertheless, participants describe how the University has been encouraging the development of entrepreneurial capacity. For example, P28 draws on his own personal experience:

"…Within the University itself, it has a lot of mechanisms to support entrepreneurial activities. For example, for me personally, there was tremendous support provided for me to be able to undertake those industry projects I mentioned earlier. Also, we do have various support for academics who want to be entrepreneurial by undertaking entrepreneurial activities but at the same time, they do not value industry relations in the

691

same way that they probably should do. So, we have the split personality within U15 to be able to measure where you are and what you are doing as an academic in terms of entrepreneurial activities" (P28/L111-119/2016).

The above extract suggests that one thing is for U15 to put in place initiatives that foster academic entrepreneurship another thing is the willingness and interest of the academics themselves to get involved.

On the basis that U15 entrepreneurial activities lean more toward spin-out, **research** was identified as a dominant entrepreneurial initiative. P28 shed light: "I kind of see research as one aspect of that because a lot of things happening at U15 are kind of organic. Therefore, different schools will have all kind of different relations with the local community and industry and so on. [] as I said they are not all well-coordinated but just happening organically" (P28/L187-190/2016).

Further to this, pharmaceutical and medical discoveries are noted as the types of research that generate spin-out formation:

"I would say at U15; the **College of Medicine** is the most entrepreneurial part of the University because their research is based on developing new soft. So, we do a lot of research with Pharma and medical companies that are commercial/industry-related. In fact, they take research as a great deal because they are interested in developing new treatments and new medicine. So, immediately that creates the ecosystem that exists between industry, government, and the university. So, for us, that is the most entrepreneurial part of the University because they have a lot of academics who work there and are very entrepreneurial" (P28/L124-132/2016).

Besides, by comparing between departments, P28 identifies further that research from engineering and science are the main entrepreneurial departments within U15:

"Also, in **Engineering and Science,** there tends to be a bit more balanced in terms of their teaching, research and entrepreneurial activities. For example, informatics has a huge amount of entrepreneurial success in spinning out companies but there is a focus on basic research with the industry. But in Humanities, they are less interested in

entrepreneurial activities. So, it depends on the type of research and type of faculty" (P28/L133-137/2016).

Having presented the case-by-case models, it is important for university leaders, managers, and governors to strategise beyond the internal environment to be responsive to the complex context where internationalisation is not isolated.

Appendix 21: Identifying and defining the typologies

Table 61: Representative sample of cases identifying the three typologies

Case	Determinants				Characteristics				Typologies
	Internal			External	Strategic	Intra-facing	Inter-facing	Outward-facing	
	LMG	FC	OCA	CBA	OS	EE	PSUs	CEE	
U1	They still must *convince the* University *Council* to spend £30 million here. and £50 million there. So, it is the right thing to	The money comes from the HEIF which is *running out now* (P21/L112/2016) . Knowledge exchange funding allocation for	Academics, in general, *do not think* entrepreneurial; they think research funding and I think younger academic think more	The University is happy when *we can show that* mentor 100 *students* in a year that we have done this	We do quite a lot, but it is not coordinated in terms of doing it but with no overriding strategy or policy in the University.	There are entrepreneurship courses in the Arts, Business School, and Engineering School. In the Engineering School, it is *a bit of an add-on*	We work with students and a local business at the scene for three days. The students pitch their business to	In terms of companies, we are *not supported by many companies at all* at the student enterprise to level	Fledgling: highest funding allocation, inadequate, uncoordinated activities and shortlisted.

	Quotation data
	...have a *Commercial Director with vision and* not just a money person... (P21/L130-153/2016).
	2016/17 is £2,850,000 (HEFCE, 2016).
	...entrepreneurial (P21/L272-277/2016).
	Other than *that, there are little* actions (P21/L169-179/2016).
	Without any policies to do stuff (P21/L249-252/2016).
	...and that.
	...because there used to be entrepreneurship in their courses (P21/L113-116/2016).
	...up to 50 people in the public to get feedback... (P21/L18-28/2016).
	(P21/L237-238/2016).
U2	*At this* University, VC *and senior* management *set a* *target around* engagement from around 16 to 20 percent of all two million plus
	So, because we do not get that vast amount of income compared to a lot of other universities such as Leeds that receive about *investments to*
	The culture of this University generally is of *thinking about* *our* *how to do some* *research work* *and how you will* *then bring that* *back as investments to*
	We are not as good as shouting about our successes as we should be. So, we need to improve better on
	The biggest one for me is that a lot of things are not actually linked together (P24/L129/201 6). Our strategic plan for the next five years
	We have an enterprise manager who has helped to set a broad range of *enterprise and entrepreneurship education* and engagement across the
	We run an incubation and business growth unit *for students* *and* businesses to get their business ideas off the City
	We are very lucky to be in lowest funding an entrepreneur-ial place because *we have a relationship and work with* the City
	Fledged: ... allocation, adequate, partially coordinated activities and shortlisted.

income to 25 percent which is quite significant (P24/L285-288/2016).	of the HEIF and we get about £800,000 or something less than two million then we use ours quite consecutively on projects that generate other income anyway (P24/L260-264/2016). 2016/17 knowledge exchange funding allocation is	the University. That is apparently entrepreneurial I believe (P24/L384-389/2016).	explaining to people what we have done well. We probably need to push forward some projects and their outcomes because we are not very good at shouting about it (P24/L491-496/2016).	there is this *specific strand of what we called research and innovation as* engagement *to act as a driver* for the local economy... (P24/L273-276/2016).	University so that *all courses have entrepreneurial units* in them (P24/L442-445/2015). We have some courses where they embedded enterprise... (P25/L81-82/2016).	ground (P24/L3-4/2016).	*Council* (P24/L218-219/2016).

U14	
	£1,550,358 (HEFCE, 2016).
	Fully-fledged: lowest funding and allocation, adequate, well-coordinated activities and shortlisted.
	The technology and innovation centre within a team of which we have over *500 researchers working in there very closely with some industry researchers.* So, we have academics researchers
	It is very much about a team here and not just a team within the entrepreneur-ship department but also a whole set of the team across the University. For example, I *interact*
	The technology and entrepreneurship program for postgraduates, a new program that they started. Quite active by trying to increase the entrepreneurial capacity of all people at Strathclyde, not just our own business
	We feed into this team called the *enterprise forum which is a meeting* that we hold once in a month during term-time and it gathers us as representatives from different departments and units across the University. So,
	If *we promote these* successes th e people can see that things are working (P26/L253-254/2016).
	I think another thing is about *openness.* So, encouraging *openness* is another very important thing (P26/L156-159/2016). The positive culture is *influencing my personal drive and interest* (P26/L340-341/2016).
	If the person at the top beliefs in this a lot will flow from the top. So, this becomes very important. For example, our Principal said in my present that: "don't wait for me to give you permission" (P26/L100-
	Knowledge exchange funding allocation 2016/17 is £1,124,000 (SFC, 2016).

		quite a lot working	
		with the closely with	
		enterprise industry	
		team which researchers	
		is based on (P26/L196-	
		the research 199/2016).	
	students	and	
	(P26/L8-	knowledge	
	40/2016).	exchange	
		services in	
we are more		the TTO	
organised and		(P26/L16-	
joined up now		216/2016).	
(P26/L20-			
28/2016).			
194/2016).			

Appendix 22: The EU framework

Table 62: Summary of key facts of the EU framework

Author	Purpose	Method	Participating organisations	Key findings	Calls for future research
The European Commission's Directorate-General for Education and Culture in association with OECD Local Economic and Employment Development in 2012.	The framework is targeted at universities as guidance and an inspirational tool. To assist universities in the examination of their present situation to be able to take necessary actions. To provide a baseline for further developments.	A panel discussion with six independent specialists at the 2011 University Business Forum.	137 institutions from 17 countries (five UK based including Coventry, Queen's University Belfast, Nottingham, Cambridge, and University College London).	The final report produced in 2012 was organised around seven components: Leadership & Governance (Pillar One). Organisational Capacity, People, & Incentives (Pillar Two). Entrepreneurship Development in Teaching & Learning (Pillar Three). Pathways for Entrepreneurs (Pillar Four). University-Business Relationships for Knowledge Exchange (Pillar Five). The Entrepreneurial University as an International Institution (Pillar Six). Impact (Pillar Seven).	The framework "integrates existing literature and models and does not introduce new models and factors" (p.1). "It is not yet a comprehensive analysis. It remains a work in progress" (p.2).

Note: The Directorate-General formulates and implements the EU Commission's policies. The LEED offers best practice on how to create quality jobs.

Having presented the above facts by clearly outlining the gaps, it is explicit that the EC and OECD (2012) have called for a validation work to be done on the outcome from the panel discussion forum. In this thesis, I utilised a valuable plurality of methods to modify the framework. My modification takes into consideration the UK universities' educational status, local and national contexts. This is essential because the EC and OECD (2012, pp. 1-2) have suggested that there is a need to consider both "local and national environments of the universities to produce a comprehensive and practical model".