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SUPPLY CHAIN RISK AND RESILIENCE: THE PAST DECADE AND FUTURE DIRECTIONS

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ABSTRACT

The past decade has been an extremely important phase in which supply chains have rapidly developed to counter unprecedented uncertainties and risks. Terrorist attacks, closing of national borders, social unrests, and environmental disasters have brought business continuity planning, enterprise and operational risk management and resilience at the forefront of supply chain management. The past decade has also seen a proliferation of research and research publications in the field of supply chain risk management and resilience. The theory and concepts that have been developed over the past decade have provided further directions for academic research and have influenced industry. This paper presents an overview of the most important papers in this area which have created an impact in the last decade and considers future directions with reference to developments in the industrial sector with regards to supply chain risk management.

INTRODUCTION

Supply chain risk management is suggested to be in an emerging stage by researchers (Sodhi et.al, 2011). The topic has been researched deeply in the last decade however it still clearly has undefined boundaries in its scope of research. Literature reviews on SCRM have been carried out in past by Juttner et. al. (2003); Carter (2008), Gunasekaran and Kobu (2007), Tang (2006), Stevenson and Spring (2007). These literature reviews provide a good platform for beginners as well practitioners in making sense of the ongoing research and identifying the state-of-art within the field.

The following paper will briefly cover the background and current advances in SCRM for the last decade. The past decade has also seen a proliferation of research and research publications in the field of supply chain risk management and resilience. The theory and concepts that have been developed over the past decade have provided further directions for academic research and have influenced industry. This paper studies the most important papers on the basis of citation analysis and creates an overview of the important aspects of supply chain risks.

SUPPLY CHAIN RISK MANAGEMENT

Risk management is becoming an integral part of a holistic SCM design (Christopher and Lee, 2004). There are various schools of thought that differentiate between uncertainties, risks, disruption, vulnerability and disaster in field of supply chain risk management. Supply chain risk can be broadly defined as an exposure to serious disturbance arising within a supply chain. This exposure will affect the capability of a supply chain to deliver the product/ service as per the requirements set by the customer. The literature identifies that the supply chain risk management approach will add value to industry by providing a methodology for identifying risks, assessing them and suggesting strategies to mitigate these risks. The method will provide a greater influence and control over suppliers, increased quality and reliability of products with increased efficiency and reduced operational costs by having systems in place to handle uncertainties and disruptions. There are various papers written on the subject of risk identification (for e.g. Peck (2005)) and identifying sources of risks.

RESEARCH METHODOLOGY

The aim of this research is to study the contribution and impact that has been generated by the most important journal papers in the last ten years on the subject of supply chain risks. Towards the end of the last decade the academic community has seen a

proliferation in the papers on the subject of supply chain risks, resilience and disruptions. The discussion point here is whether all this global research has produced any novel contributions or theories which have the potential to influence the next decade with regards to supply chain management. The most difficult part of this process was to create a filtering methodology to select the most impactful papers. The research is conducted in two stages. The first stage was desk research which comprised of an extensive literature review using journal publications and professional magazine articles. The second stage consisted of analysing industrial case studies which depict instances of supply chain disruption and failure. The information on the cases was derived from secondary data. The cases were analysed to identify themes and concepts that have been utilised within the industrial setting to overcome the disruption. A comparison between the results of the literature analysis and the case analysis will be done to identify whether there is a commonality between the academic output and industrial implementation.

'Publish or Perish' was used for searching the papers. Various keywords were used to generate lists. 'Supply chain risk' and 'supply risk' generated >600 publications, whereas 'supply chain uncertainty' generated >450 and 'supply chain disruption' generated >330 publications. These publications were combined and only journal papers were considered followed by removing the duplicates, the final list consisted of >210 papers. Using the Association of Business School's journal quality guide only those journals that were listed under 'operations management' were considered and the list was narrowed down to 74. The next filter to consider the most impactful papers was the number of citations per year. This was chosen to remove the bias involved in selecting only those papers with the highest cumulative citation score which may tend to favour the oldest papers from the cohort. Hence, even if a paper was relatively new but had a good citation /year score the paper was considered for the final list. The minimum level or the cut-off point for the lists was a citation /year score of 20. This could mean that the paper could be 12 years old with a citation score of 240, or a 2010 paper with a citation score of 40. Applying this condition of a citation score/year of 20, the final list of the most impactful papers consisted of 43 papers. These papers were analysed to find the relevant theories from the papers.

As shown in table 1, the list consists of 22 papers under the keyword of 'supply chain risk' and 'supply resilience (SCR, SR). 11 papers represent 'supply chain disruption' (SCD, SD) and 10 papers represent the keyword 'supply chain uncertainty' (SCU, SU). All 74 papers could have been considered however it was decided to restrict numbers on the basis of the citation/year measure. Also, the decision to take into consideration a cumulative list involving the three keywords may bring in a limitation. However, it was also necessary to perceive whether supply chain - 'disruption', 'uncertainty', 'resilience' come under the umbrella of supply chain risk or are these completely separate academic areas. The papers are depicted in table1.

