5th World Production and Operations Management Conference
P&OM Havana 2016

The Impact of Supply Chain characteristics on the adoption of innovation

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Summary Abstract

Healthcare organisations have important roles in society in terms of safeguarding and promoting public health. Considering the healthcare organisations' crucial role and the fact that they face the challenge of minimising the cost of healthcare services while enhancing service quality, healthcare organisations tend to adopt various improvement approaches and innovative interventions to enhance their efficiency and effectiveness. This research evaluates the implementation of innovative programmes within Pharmaceutical Supply Chains (PSC). It aims to assess the current medicine delivery process and identify the factors that affect the perceived innovation level within the PSC in two diverse European contexts.

Keywords: Innovation, Supply Chain, Healthcare Sector

Purpose

Healthcare organisations have important roles, in society, in promoting public health. Particularly, hospital and community pharmacies are considered as the link between healthcare services and patients because they are responsible for dispensing pharmaceuticals in order to prolong healthy life (Westrick and Mount, 2009). Considering the healthcare organisations' crucial role and the fact that they face the challenge of minimising the cost of healthcare services, whilst enhancing service quality, healthcare organisations tend to adopt multiple improvement approaches and innovative interventions to increase their efficiency and effectiveness (Brandao de Souza, 2009). They implement innovative programmes in order to be able to provide high quality services whilst using the same or similar level of resources (Cheng *et al.*, 2015). Specifically, they focus on improving their Supply Chain Management (SCM) in order to reduce any type of waste and in particular their drugs spending to provide better services (Kearney, 2009). However, Bamford *et al.*, (2015) found that these approaches remain patchy and methodologically limited in this sector.

The reform agenda in healthcare refers to innovation as a source of concern (Williams, 2011). Innovation is identified as the intentional introduction of new or significantly improved services, processes or products within the organisation in order to benefit it and the wider society (Omachonu and Einspruch, 2010). Literature indicates that innovation in the healthcare sector is considered to lag behind those in non-healthcare sectors (Liddell *et al.*, 2008). This might be due to successful implementation of innovative programmes depending upon the organisational context. In particular, healthcare organisations are generally characterised as centralised organisations (Bamford, 2011) which could explain the slow uptake of innovation (Grol and Wensing, 2004), fragmentation in commissioning and procurement practices (Williams, 2011) and the sub-optional use of guidance (Liddell *et al.*, 2008).

This research identifies the factors that support or prevent innovation within this complex environment. In particular, the factors under consideration reflect the time to respond to customers/suppliers, staff communication, staff/patients satisfaction, economic risk, cost of innovation, lack of finance, access to information and external/internal collaboration. The innovation level is approached by means of new/improved products/services introduction. To test the relationship between the study variables, the following hypotheses were established:

H1: Time to respond to customers/suppliers (a), staff communication (b) and staff/patients satisfaction (c) are positively related to the innovation level when considering the introduction of new/improved products/services.

H2: Economic risk (a), cost of innovation (b) and lack of finance (c) are negatively related to the innovation level when considering introduction of new/improved products/services.

H3: Access to information (a) and external/internal collaboration (b) are positively related to the innovation level when considering the introduction of new/improved products/services.

Design/methodology/approach

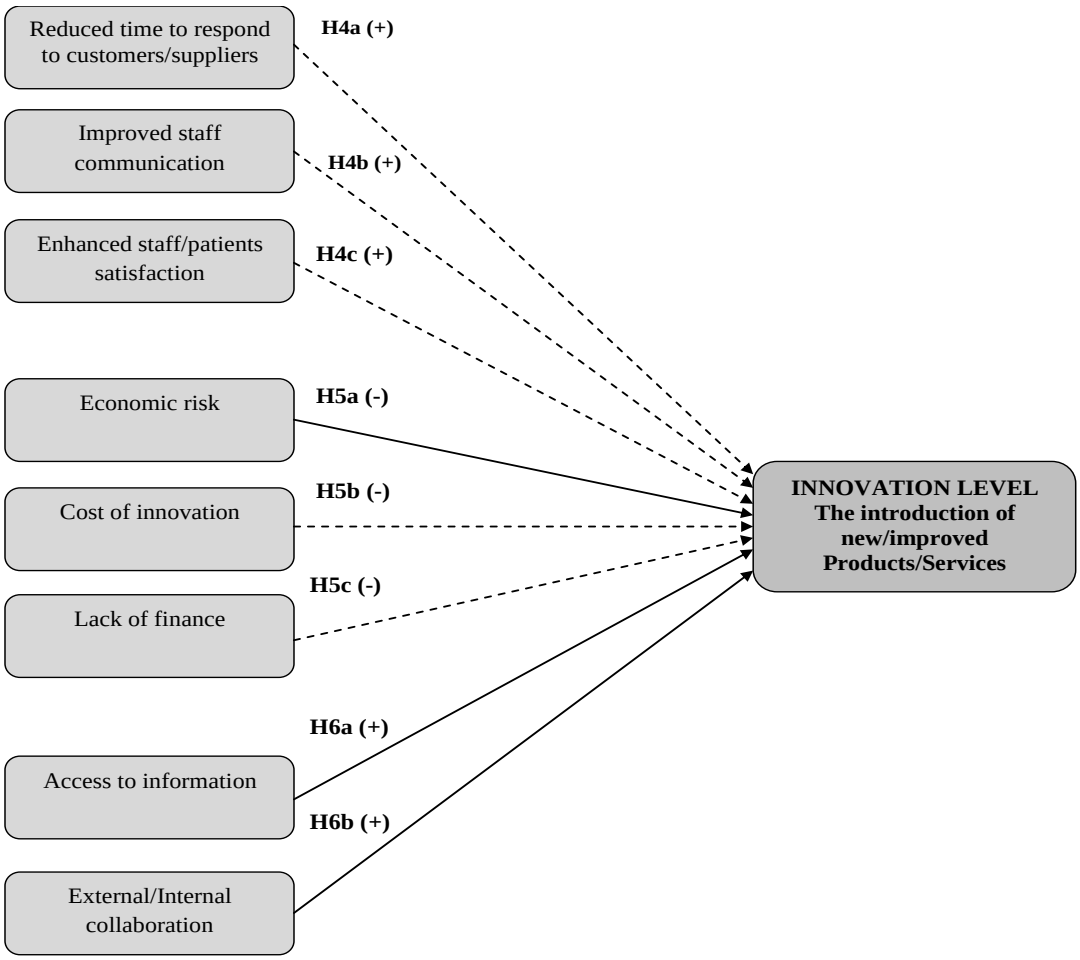
A quantitative approach was adopted to identify the factors that affect the innovation level in the PSC. Particularly, the research emphasises on investigating the current pharmaceutical delivery practices adopted and implemented in two specific European contexts: the UK and Greece. Although these two countries are member of the European Union (EU) and, thus, have to follow the same large body of legislation related to the delivery of medicines, there are some significant differences between these two

locations that might influence pharmacies decision to innovate. These differences are related to the countries' size; the available financial resources; the healthcare systems applied and the impact of the on-going economic recession. We, therefore, were interested in exploring the complex delivery system into these diverse contexts.

The analysis of the collected quantitative data enabled the researcher to identify the factors that affect the pharmacies' innovativeness in the two selected geographical areas and perhaps in the wider Europe. The sample (N=130) consisted of 81 specialists working within the PSC in Greece while the remaining (38%) were located in the UK. An online survey was used to collect the required data. The questionnaire included 13 items rated on a 5-point Likert scale.

Findings

Figure 1 illustrates the output of the quantitative analysis, using SPSS version 20.0.



Note. Dashed arrows represent non-significant relationships

Figure 1 - Results - Innovation Level

It can be summarised from Figure 1 that three factors appear to affect the level of innovation: economic risk, access to information and external/internal collaboration. In particular, H1 has been rejected as none of the aforementioned variables was significantly related to the innovation level; H2b and H2c has been rejected as well but H2a has been accepted indicating that economic risk (β = -.258, $p < .05$) was significantly and negatively related to the innovation level; and finally, both variables:

economic risk ($\beta = .215$, $p < .05$) and cost of innovation ($\beta = .221$, $p < .05$) were significantly and positively related to the innovation level, therefore, H3 has been accepted.

Relevance/contribution

The Regression Analysis of the total sample indicates that pharmacies tend to introduce new or improved drug delivery services when they have enough information and the support of external/internal collaboration. They are very sceptical in implementing new or improved services when they have to invest a particular amount of money; their concern is related to the potential economic risk associated with such strategies.

The identification of the factors that influence hospital and community pharmacies' innovativeness can contribute to the better understanding of the current delivery process practices applied within the PSC. This might enable any improvements and changes to be recommended in order for effective and efficient delivery system to be implemented.

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