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Mitigating Risk Propensity in Healthcare Service Supply Chain: A Theoretical Background

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Abstract
Comparatively both traditional manufacturing supply chain networks and service supply chain network faces multiple uncertainties that affects the growth, sustainability and performance of each particular network. Despite the significant hurdles that risk posses to business entities and its activities there have been relatively larger amount of studies considering this phenomenon in traditional manufacturing supply chain network as compared with service supply chain network. Due to this limitation or gap in the body of literature the study examines this phenomenon from a theoretical approach to outline relevant prepositions that can be tested empirical in further research. The theoretical preposition stated provides a clear direction to guide further research into risk management in healthcare service supply chain network.
Keywords: risk propensity, risk mitigation, competitive advantage, collective risk management

Introduction

The complex nature of performing business activities in recent business environment has prompted organization to identify new innovative ways of design, development in cost effective manner whiles delivering to its customer in efficient modes. A well-coordinated supply chain network is the heartbeat in order to achieve effective delivery of service and goods, coordination and cooperation between suppliers, competitors and customers alike. Supply chain management turns to link customers, competitors, logistics, warehousing and distribution networks and suppliers. It happens to be an interconnected approach between all essential actors within the supply chain network of a particular organization (Handfield & Nicholas, 2002). In addition supply chain management thrive on information and knowledge sharing among actors within a particular network. It aids eliminate waste and improves both production and delivery times. Further the integral nature of supply chain networks enhances the overall organizational performance of a firm (Campbell, 2002; Bakker et al., 2012; Vilasini et al, 2012). Supply chain management models, practices and concepts have gain recognition among various actors in recent times.

Despite the significances strives supply chain management models and concepts have achieved in traditional manufacturing supply chain networks recent studies turns to provides certain insights that suggests that these methods are not applicable in service supply chain networks (Baltacioglu et al., 2007; Miah et al., 2004). For instance healthcare service supply chain networks differs from traditional production factories that comprises of specific suppliers and competitors. Service supply chain networks is multi-complex network comprising of diverse actors that plays an independent and an inter-independent activities. Therefore presenting organisations with new challenging in the management of these networks with several affiliates (Granvotter, 1972; Borgatti, 2012).

Although the merits of an effective logistics system in an organization cannot be underestimated, it does not really guarantee an undisrupted supply chain network especially in the service delivery sector. To ensure a less potentiality of risk within an organizations logistics management system, this is the need to place information and knowledge management in the center of affairs (Shankar, 2001). This enable firms to proactively identify and assess risk within the entire network rather than focusing on specific actors (Msimangira, 2010; Juttner et al., 2003). Further having a positive impact on supply chain decision making. Since data backed decision in every aspect of the organization improves departmental functionality and operational activities (Waters, 2007).

Healthcare service supply chain system is a dynamic and evolving complex system encompassing various actors as opposed to only suppliers and customers in traditional supply chain system. Therefore it is critical to ensure a robust system divulge of disruptions so as to ensure smooth interactive activities between actors. These new service supply chain networks needs to adopt an integrated approach in order to enhance its value delivery (Cook et al., 2002). An approach that encompasses all actors in this social network both upstream and downstream parties through coordinated knowledge and information sharing will result in obtain set targets. The merits of this system cannot be overlooked in healthcare supply chain management system. And this further influences the entire risk management process.

Insofar the significances of risk mitigation in a service supply chain so as to facilitate the smooth running of operations. Especially in healthcare supply chain where the delay in any activity relating to service delivery will result in dire consequences for the end user and firm alike. Despite this essential factors affecting this domain there has been limited research or body of knowledge in relation to mitigating risk in service supply

network (Sampson & Spring, 2012; Sengupta et al., 2006). There is motivated by the fact that current mitigation strategies and application in traditional supply chain networks does not help in service supply network (Miah et al., 2013; Ellram et al, 2004; Arlbjorn et al, 2011). In view of this the central theme of this study is to provide a theoretical background and prepositions that can aid firms within the service sector mitigate risk propensities. This study contributes to the growing body of knowledge in service supply chain network whiles provide a perculiar background for further empirical study in relation to risk aversion and mitigation within healthcare supply chain networks. The remainder of the study is arrange as follows, section 2 focus on literature review on supply chain and service supply chain networks respectively, section 3 presents the theoretical background that forms the bases for the prepositions formulated, section 4 discusses the contribution of this study and section 5, presents conclusion.

Literature Review

Supply Chain Network Vs. Service Supply Chain Network

An effective supply chain network is the backbone of manufacturing, distribution and implementation of business strategies and activities. Therefore supply chain management has become an integral aspect of management and business activities. It has an influence on business strategy formation and implementation. Firms with an enhanced supply chain network gains higher competitive advantage over its competitors (Min et al., 2004; Das & Teng, 2002). The merits of competitive supply chain network is essential for the performance of any firm in turn of product and service design and delivery. The supply chain system is characterized by supplier push factors, large scale of production due to economies of scale, based on hierarchy governance and market controls and limited relation with customers or end users (Drzymalki, 2012).

Service supply chain management is defined as the management of information, processes, coordination and cooperation activities from supplier to end customer (Ellram et al., 2004). Furthermore, needs to perform demand and order management, supplier and customer management, information and technology management in a coherent approach so as to obtain optimal utility from available resources in its environment to improve its business performance (Baltacioglu et al., 2007). Optimal utilization is essential if firms would be able to explore and exploit all needed resources in terms of knowledge and information and human expertise to enhance its internal supply chain process innovation. The rapid growth and usage of technology when adopted can enable firms tap into relevant information at a relatively cost-effective manner to improve its supply chain network performance. This is due to the fact that service supply chain networks moves beyond the implementation of effective logistics system. For example healthcare service supply chain network.

In addition, the implementation of an intelligent supply chain and logistics system in the healthcare service sector is essential for effective delivery of essential both consumable and non-consumable medicine suppliers to end user (either health facilities or patients). For instance if health goals set out by the millennium development authority such as MDGs 4. 5 and 6 is to be achieved there is the need for a well structure service supply chain network backed with an interactive information and knowledge flows. This would improve interaction and communication among the diverse actors involved (Manso et al., 2013). An optimized information flow is critical to the success of a service supply chain network both in the short and long run (Hai & Yirong, 2002). This would facilitate the procurement and delivery of essential drugs to needed facilities therefore contributing to quality of healthcare service delivery and eliminating wastes associated with loss of lives that could have being prevented with the availability of prescribe medicines (Silve, 2009). Therefore a proper layout supply chain management system cannot be overlooked.

Figure 1: Difference between manufacturing and service supply chain system

Area	Manufacturing supply chain system	Service Supply chain system
Production System	Supplier Push	Customer Pull
Logistics System	Uniform, large scale production	Customized to customer needs
Supplier	Less interaction	High interaction
Customer Relations	Low	Critical to overall success

Source: Drzymalski, 2012

Theoretical Background and Prepositions

The complex nature of service supply chain network presents it with a peculiar challenge in relation to its survival. This include how firms or actors would coordinate interactive cooperation. The feedback loop associated with the interactive process enables actors insight into the minds of each other. Therefore providing a platform to share contributions and shortcomings. Communication is a critical factor if a particular service supply network will be sustainable. It further improves coordination and cooperation activities (Hanf, 2000; Ackah et al, 2015).

Inherently risk is associated with every business organization in the discharge of its duties and supply chain network does not differ. Service supply network is characterized by several actor that perform an

interdependent set of activities therefore presenting management with a managing problem. When this networks are not managed well it widens the structural hole associated with large disjoint networks (Burts, 1992; Granovettor, 1992). The interaction build trust and information sharing therefore promoting grounds to averse risk from the initial stage. In addition is facilitate coordination and cooperation among actors and bridges the gap among actors with the network whiles building collective competence to ward off potential risk. Within this theoritical base the preposition 1 is formulated;

P1: When there exist interactive relationship among actors of a particular service supply chain network it has a positive influence on the implementation of actors risk mitigation strategies and vice versa.

The acknowledgement of risk as part of any business activities is a critical step in its management. Risk management strategies can only be formulated and implemented when potential risk is identified and assessed. This provides background as to the direction of risk management processes (Anderson, 2006). In order to formulate risk mitigation strategies and policies there is the critical need to identify and assess the impact of risk on its service design and delivery process. In addition firms or networks that has a high propensity of managing risk turns to gain competitive advantage over other. Furthermore they are able to satisfy it end user or potential customers (Eduardo et al, 2011; Kerzner, 2009).

In performing this activity thus risk identification and analysis should not be performed among few actors but rather the entire network. Mostly firms perform risk identification and analysis as separate activities and this has proven not to be very efficient. Since uncertainties evolve over time and also performing these activities as separate activities cost much time and resources. Therefore in view of this a study conducted Ackah et al (2016) to examine how risk can be managed in a service industry such as the electronic payment and ecommerce in emerging market suggested that when risk evaluation is conducted it happens to be more efficient for risk mitigation. Risk evaluation according to the study indicates that is a synergy between risk identification and analysis in a single coherent manner. This reduces waste in relation to time and resources spent on separate stage of the entire process. Risk evaluation step as emphasized should adopt a network approach if an significant result can be attained (Burt, 1990; Borgatti, 2012; Marlyin et al, 2012). An interaction consultation between all actors within the service network it enables each actor to provide significant contribution in relation to the potential uncertainties affecting the network in achieving it goals. Therefore service networks to deal with both the technical and qualitative aspects of the risk evaluation process (e.g. Reith, 2004). Based on this the preposition 2 is stated;

P2: the ability of network to involve each actor in the risk evaluation process reduces the propensity of risk associated with healthcare service supply chain networks.

One critical stage of the mitigation process is the implementation of formulated policies and strategies. The collective evaluation process facilitates knowledge and information sharing and diffusion. Since strategies and policies are formulated with a network focus, all actors contributes to the effective dissemination of such information (Rogers, 1956; Burt, 1990; Borgatti, 2012, Ackah et al, 2016). Is critical to integrate communication channels that is devour of complicities that distort information and knowledge sharing. Furthermore coordinating and cooperation activities needs to be conducted in a proactive manner so as to ensure smooth transmission of relevant information to relevant actors. Due to the interaction nature of communication actors are able keep track of progress of specific mitigation strategies and policies especially in a health service supply chain network (WHO, 1998; Ackah et al., 2015; Heilbrun, 1997). The communication promotes knowledge spillover that impacts both long run and short run implementation of mitigation strategies. Whiles improving monitoring of mitigation efficacy among other within network.

P3: the collective practice and implementation of risk mitigation strategies by network actors reduces risk propensity in healthcare service supply chain network.

Contribution of this Study

Risk evidently is a phenomenon that affects every business organization and its activities. In supply chain network an un-interruptive network is essential to foster continuous production, inventory and distribution of goods and services to end users or customers. Despite this fact, uncertainties affects the smooth transition of this system in order to attain the needed result. Therefore both academic and practitioners have work on providing methodologies that can be implemented to mitigate risks in traditional supply chain networks which is mostly concern with the production and distribution of product whiles optimizing lead time among others.

With the growth in emerging service sector and the demand of customers for an improved service delivery process presents firm with new peculiar challenges that needs to be addressed. As elaborated service supply chain network such as healthcare service network poses dynamic characteristics as compared with traditional manufacturing supply chain systems. Therefore the risk and uncertainties that affect each particular network is unique and requires a different innovative approach to mitigate them. Insofar this goes a significant way to reduce risk propensity associated with the design and delivery of service.

According to literature and theoretical review conducted in the service supply chain network proves that

there happens to be limited number of study in service supply chain network. Among the limited studies in this domain, risk mitigation within service supply chain network turns to be marginal as compared to studies examine this phenomenon in traditional supply chain network. Based on this the central theme of this study is to provide a theoretical background and preposition as a base for further research. The contributes to this field of study by providing a clear direction towards risk management studies in healthcare service supply networks. The preposition stated would enable researchers to conduct quantitative analysis into this domain without going through the hassle of combing the entire literature that happens to be limited. This enables researcher to place much focus on the needed empirical analysis to support the proposed preposition.

Conclusion

Healthcare service supply chain networks over the years has evolve to incorporate diverse actors and members resulting in a complex network. The complexity of this network presents management with a specific problem in relation to how risk is identify, assessed and managed in order to reduce its impact on firms or network activities. In furtherance another factor that affects the managing of uncertainties of this network is the dynamic tangible and intangible resource that actor posses individually and collectively. To enable firms tap into the social capital available it is essential to mitigate these uncertainties.

In view of this the study conducted a theoretical research into a field that has limited studies to ascertain how the propensity of risk can be mitigated. Therefore forming the central theme of this study. The study adopted a theoretical approach where literature in this field is survey and prepositions formulated to aid in the mitigation process. Three distinct preposition is formulated to aid in the development of strategies and policies to reduce risk propensity in healthcare service supply chain network.

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