Journal of Procurement & Supply Chain

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ISSN: 2617-3581

Stratford Peer Reviewed Journals and Book Publishing
Journal of Procurement & Supply Chain
Volume 6||Issue 1||Page 76-82||July||2022|
Email: info@stratfordjournals.org ISSN: 2617-3581

Supply Chain Innovation and Sustainability: Literature Review

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***How to cite this article*: Akintokunbo, O. O. & Chileobu, A. (2022). Supply Chain Innovation and Sustainability: Literature Review, *Journal of Procurement & Supply Chain, Vol* 6(1), 76-82.** https://doi.org/10.53819/81018102t4058

Abstract

This paper examined supply chain innovation and sustainability in the oil and gas sector in Rivers State. The study used literature review as method of gathering opinions of several scholars. The study explored views of scholars on the meaning and definitions of supply chain innovation and sustainability. The study defined supply chain innovation as improvements in the way that supply chains operate, and more specifically, in the way that products, information, work, and funds flow throughout supply chains. Sustainability was viewed as that which was materialized from concerns regarding the running down of natural resources for imminent generations. Based on the various scholars view, this study concluded that supply chain innovation is very significant in enhancing the sustainability; supply chain innovation is critical to achieving sustainability in any sector. The study therefore, recommended that oil and gas companies should employ the optimum supply chain innovative practices to enhance sustainability.

Keywords: *Supply Chain Innovation, Sustainability, Oil and Gas Sector.*

1.0 Introduction

Businesses are constantly experiencing flux in their everyday struggle for growth and survival. This flux is due to changing business environment which is also caused by such factors as globalization, technological advancement, competition etc (Zailani, Jeyaraman, Vengadasan & Premkumar, 2012). The above-mentioned factors have opened businesses up to much vulnerability, some of which are the multiple choice nature of today's customers and price sensitivity in the market place (Paulraj, 2011). Amid the constant change within the business environment, companies have been determined to improve their competitive priorities. In this context according to Grawe (2009), the success of performing companies relies on their ability to

be the first on the market in providing high-quality products and services at affordable prices that satisfy the consumers' needs.

The competitive priorities of companies are equally important to the success of a firm's sustainability and they can only be achieved through innovation (Deshpandé & Farley, 2004). Innovation implies acting systemically and includes all companies' activities (Bigliardi, Bottani, Galati, 2010). Lately, organizations managers are beginning to understand that when the importance of innovation in the supply chain management process (Grawe, 2009). There are strong evidences in the literature that suggest that developing innovative steps in supply chain relationships influences the companies' survival chances (Miles & Snow; Storer & Hyland, 2009). Some research reveals that innovative coordination, cooperation, partnering and collaborating within supply chain and developing supply chain relationships are critical to the evolution of a company (Miles & Snow, 2007) among the results of other researches (Storer & Hyland, 2009).

Akintokunbo and Adim (2020) argued that the COVID-19 pandemic has severely impacted the businesses all over the world necessitating supply chain innovation. Supply chain relationships may be sustained by innovative approaches, such as costdriven pricing. If the partners of the supply chain are truly innovative, and their actions are effectively coordinated in order to change the product characteristics, design or the production process, each of the partners will gain personal benefit (Trent & Monczka, 2003). As Adelman, Aydin & Parker (2012) stated in their study, the relationships between partners are the core of innovation in the supply chain leading to sustainability. This connotes the importance and applicability of innovation within supply chain perspective in organizations. Nonetheless reflected as an essential part, greater part of the investigations on innovation import within supply chains assumed the empirical outlook with other parameters (Flint *et al.*, 2005, Grawe, 2009). There has been a deficiency of enquiry on supply chain innovation as a competency sideways with its backgrounds on sustainability. In this esteem, the current theoretical research seeks to study the influence of supply chain innovation on sustainability.

2.0 Literature Review

2.1 Conceptual Review

Supply Chain Innovation

Supply chain innovation has been delineated from manifold perspectives. For example, Flint *et al.* (2005) paid attention to innovation that is extra supportive to customers for a improved and superior service that is innovative. Chesbrough (2003) draw attention to the significance of innovation philosophy in accessing innovation; yet the associated writings on innovation itself highlights the magnitude of procedures and technology in originating flourishing innovations (Kahn, 2001; Christiansen, 2000,). There are also references on how the innovation occurs in businesses and markets (Chesbrough, 2003; Rogers, 1995). Businesses are persistently blossoming to build up and investigate fresh ideas, products and services. Drucker (1985) point toward innovation as a contrivance heading explicitly for entrepreneurs. Afuah (1998) delineated innovation as: "a procedure of spinning prospect into novel ideas and situating these into broadly utilized practice. Innovation make possible create original technical skills and knowledge that can assist build up latest products and/or services to match customers' requirements. For service organizations, supply chain innovation is a necessity for guaranteeing valuable service delivery (Chapman *et al.*, 2003). Despite the fact that innovation gives emphasis to idea generation, however it's not valuable or supposed imperative in a supply chain angle but for it outcomes in a

thing priceless to the customers. Supply chain innovation is therefore, an initiative, performance, or entity that is professed as up-to-the-minute by human being or supplementary entity of espousal. Supply chain innovation could do without being new to humankind; however it possibly will upshot in making available a new service to its customers.

A supply chain stands for a network of business that associated to transform basic materials right into finished goods and services and to supply them to end customers (Johnson, 2010). Literally it must be managed in the most streamlined and cost-effective way possible. Competitive pressures as well as rough business scenario thrust companies towards innovation. Innovation is essential for firms to react to fast changes in products and services along with customer's demand and issues (Kim et al., 2015). Likewise, innovation is enhancements within the way that products and services, information and relationships flow within the network that should be done by companies for they to survive (Osterwalder & Pigneur, 2010). For the most part, innovation happens within processes, technologies, services, strategies and organisational structures (Rogers, 2003). The efficient functioning of SC is especially basic to those companies which endeavoured to progress their SC systems' viability (Azevedo, 2013). Thus, SCI triggers time and expenses decrease, creating unique functional methods and dependable conveyance framework for adapting with developing adjustments in the business (Lee et al., 2011). Chapman et al. (2003), suggest that service sectors ought to centre on SCI for compelling conveyance service.

Researchers agree that supply chain innovation aids companies to support their competitive position and move forward supply chain performance (Flint, Larsson, Gammelgaard, & Mentzer, 2005; Franks, 2000; Krabbe, 2007; Lee et al., 2011). On top of that, innovation in supply chain is accepted to make strides operational effectiveness and upgrade service viability (Arlbjørn, 2011). Specifically, SC innovation includes technology-improved processes and strategies within the outbound SC as well as changes in product, process or service that either upgrades productivity or move forward final customer's satisfaction (Seo et al., 2014). The advancement of worldwide supply chain management within logistic networks is fundamental because suppliers, leaders, managers, and team members need to create persistent strategies to mitigate supply chain disruptions (Varzandeh et al., 2016).

Concept of Sustainability

Numerous definitions exist in scholastic Journals, signifying that sustainability ought to be integrated an enduring vision and uphold a broad tenacity (Bateh, *et al.*, 2015), Sustainability has materialized from concerns regarding the running down of natural resources for imminent generations (Mani *et al.*, 2016). This definition of sustainability from the Brundtland Commission shapes the prominence of future generations, in such a manner that it spotlights long-term plans (Carter & Rogers, 2008). Sustainability is the stability amid "economic development, caring for the environment and social equity" (Zailani, Jeyaraman, Vengadasan & Premkumar, 2012). Regardless of the diverse definitions, the utmost perceptible and unswerving impression is the insertion of the three dimensions and the assurance of future progression (Seuring & Miller, 2008). These definitions assist in appreciating the notion, which takes account of environmental features and economic and social features.

The concept of sustainability was originally coined in forestry, where it means never harvesting more than what the forest yields in new growth (Gopal, 2016). Etymologically, the word 'sustainability' is derived from a German terminology 'Nachhaltigkeit' and was first used with this meaning in 1713 (Carter & Rogers, 2008). The concern with preserving natural resources for

the future is perennial. Undoubtedly, our Palaeolithic ancestors worried about their prey becoming extinct, and early farmers must have been apprehensive about maintaining soil fertility. Traditional beliefs enjoined thinking in terms of stewardship and concern for future generations, as expressed in the oft-quoted words of a Nigerian tribal chief who saw the community as consisting of "many dead, few living and countless others unborn" (Ahi & Searcy, 2013). Perhaps there have always been two opposing views of the relation between humankind and nature: one which stresses adaptation and harmony, and another which sees nature as something to be conquered. While this latter view may have been rather dominant in Western civilization at least in recent centuries, its counterpoint has never been absent.

Sustainability (without necessarily using the word) is a natural topic of study for economists: after all, the scarcity of resources is of central concern to the dismal science. A famous example is the work of Thomas Malthus, who published his theory about looming mass starvation (due to the inability of available agricultural land to feed an expanding population) in 1798. A theory on the optimal rate of exploitation of non-renewable resource which is still relevant today was formulated by Harold Hotelling, an American economist, in 1931 (Bateh, Heaton, Arbogast & Broadbent, 2013). We shall have more to say about his views later. A milestone in capturing the attention of global public policy was the report of the Club of Rome (Ahi & Searcy, 2013), which predicted that many natural resources crucial to our survival would be exhausted within one or two generations. Such pessimism is unbecoming in public policy which is, after all, supposed to be about improving things. Therefore, the report of the UN World Commission on Environment and Development, better known as the Brundtland Report after its chairperson, was welcomed for showing a way out of impending doom. It was this report which adopted the concept of sustainability and gave it the widespread recognition it enjoys today.

2.2 Empirical Review

Supply chain innovation underlines the request of the market industry which can result in an improvement of proposals for downstream consumers (Flint et al., 2008). Innovation in supply chain describe to a company's penchant to lock in and sustain originalities, testing and inventive forms which will lead to brand-new technical procedures aimed at achieving sustainability (DeTienne *et al.*, 2015; Shan *et al.*, 2016). A study earlier conducted by Chapman, Soosay and Kandampully (2003) showed that supply chain innovation represents a vital capacity that can offer assistance to a company to outperform the expectations of customers. Deshpandé and Farley (2004) explained that innovativeness can bring endeavours superior execution, and offer assistance in creating products, strategies and management systems that are set apart, profitable, uncommon, separated and troublesome to mimic leading to profitability.

Study from Chen (2018) indicated that supply chain innovation is positively related to competitive advantage. Innovation is very essential to a firm's business supply chain and without knowledge, companies might be incapable to change sources right into outcomes (Hult *et al.*, 2004). Hult *et al.* (2004) specified that managers can discover practical options to issues and obstacles via innovativeness, which assist business to sustain a competitive advantage and also aids prevent decreases. A lot more innovativeness can be a substantial enabler to produce worth and will certainly assist to react to customers' demands, in creating modern abilities that permit to attain and maintain much better efficiency or remarkable success within progressively complicated, competitive and promptly altering setting (Calantone *et al.*, 2002; Wang & Wang, 2012).

The empirical findings of various studies confirmed that higher supply chain innovation applicability lead to a higher level of sustainability. This study is expected to deepen the understanding of supply chain innovation application through collective opinions of oil and gas companies' managers.

3.0 Conclusion and Recommendation

This paper examined supply chain innovation and sustainability. The study reviewed opinions of several scholars' views on the meaning and definitions of supply chain innovation and sustainability. Based on the views of various scholars, this study concludes that supply chain innovation is very significant in enhancing the sustainability; supply chain innovation is critical to achieving sustainability in any sector. The study therefore, recommends that oil and gas companies should employ the optimum supply chain innovative practices to enhance sustainability.

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