
Agile Supply Chain Management Practices and Competitiveness of SMEs: A Conceptualization

Ateke, Brown Walter
Department of Marketing,
Rivers State University, Port Harcourt
ateke5019@gmail.com

Nwiepe, Naata Michael
Department of Marketing,
Ken-Saro wiwa Polytechnic, Bori
nwiepemichael@yahoo.com

Abstract

Agile supply chain management confer competitiveness on firms. However, the potential of agile supply chain management to influence competitiveness of SMEs is understudied. This paper advances a model of agile supply chain management practices and competitiveness of SMEs for validation by the research community.

Keywords: *Agile supply chain management, competitiveness, customer sensitivity, process integration, SMEs, supply chain virtualisation, supply chain networking*

1. Introduction

Small and Medium Scale Enterprises (SMEs) contribute significantly to national and regional development (Keskin, Sentürk, Sungur, & Kiris, 2010). They are fundamental components of the economic fabric of emerging economies. They play vital roles in stimulating economic growth, promoting innovation and enhancing prosperity (European Investment Bank, 2011). SMEs generate employment, increase national output, promote export and foster entrepreneurship (Keskin et al, 2010). Nations therefore needs the contribution of SMEs to revive or strengthen their economies. It is thus imperative that efforts are made to study SMEs, especially the way they source raw materials to feed their production. This will not only reveal better or alternative supply chain management practices that are adaptive and responsive, but will also reinforce such practices that are already in use.

The paradigm shift from mass production to mass customization has reawakened managers' interest in agile supply chain management (ASCM) practices that confer competitiveness (Kisperska-Moron & Swierczek 2009; Christopher, 2000). Such practices that enhance firms' ability to satisfy customers and improve relationships and bottom-line are now actively sought. Despite the benefits of ASCM, lack of enabling technologies and too many small scale firms in industries have contributed to the non-application of agile principles in supply chain management, especially in developing economies. However, industry experts advises managers to closely monitor and optimize the potentials of ASCM practices (Simchi-Levi, Kaminsky, & Simchi-Levi, 2000) so as to improve their bottom-line through smart and seamless supply chain activities (Dubois, Hulthén, & Pedersen, 2004).

ASCM capabilities are important assets SMEs can leverage to enhance their competitiveness; as such capabilities allow SMEs to cut costs while satisfying customers (Ateke & Didia, 2017). However, it seems that most SMEs do not embrace ASCM practices due to their size,

position in the supply chain, type and length of supply chain (Li, Ragu-Nathan, Ragu-Nathan, & Subba-Rao, 2006) and lack of access to required technologies. Yet, ASCM hold great potential for SMEs. The aim of this paper is to conceptualize the influence of ASCM practices on competitiveness of SMEs.

2. Literature Review and Conceptual Framework

2.1 Competitiveness

Competitiveness is a relative construct, and it is multidimensional (Chris, 2007). It is a composite of unique resources and capabilities a firm possess, which enables it to successfully compete in an industry (Akpotu, Asiegbu, & Tamunosiki-Amadi, 2013; O'Sullivan & Abela, 2007); and broadens its ability to maintain and improve on its market position. Competitiveness guarantees renewed or entirely new approaches to achieving set objectives and informs innovation. Competitiveness has been a recurring subject of discourse in business parlance as business environments become increasingly complex and turbulent (Davis & Sumara, 2010; Akpotu et al, 2013). Globalization and advances in information and communication technology which has rendered national boundaries impotent in insulating firms from global competition is a major contributor to the complexity and turbulence of the business-scape. They have transformed the way business is conducted and has brought products within the reach of customers everywhere in the world (Monsaya, 2011) in Ateke and Kalu (2016).

Competitiveness is an abstract concept and is difficult to measure directly. Proxy measures adopted by firms to represent competitiveness include profitability, productivity, cost minimization, increased market share, sales growth, customer satisfaction (Cameron, 1980). Competitiveness is not only about markets or product development and improved ways of doing things, but also includes macroeconomic, strategic, institutional and behavioural factors that complement the potentials of firms (Rao, 2001). In the current study however, competitiveness is taken to mean the performance rating of the firm in terms of operational, financial and market effectiveness within the industry; and may be represented in terms of customer satisfaction, relationship bonding, sales growth, improved market share and profitability.

2.2 ASCM Practices

ASCM is concerned with the ability to read and respond to real market demand (Collin & Lorenzin, 2006). ASCM practices enhance firms' ability to adapt and respond to changes in customer requirements and market conditions (Tan, Lyman, & Wisner, 2002); and also gives firms a competitive edge in the volatile marketplace. It influences the ability of a firm to design, develop and deliver the value requirements of its customers promptly (Tan et al, 2002). ASCM practices are indeed strategic essentials for firms in this era of time-based competition because they influence the whole supply chain, essential parts of it, or key processes in it (Li et al, 2006; Christopher, 2000).

Customer requirement and market conditions are in a perpetual flux. ASCM practices must thus be evolved if firms must respond promptly and appropriately to these changes (Hoek, Harrison, & Christopher, 2001). ASCM practices support prompt and effective response to market dynamics through adaptive and responsive processes and networks (Khan, Bakkappa, Metri, & Sahay 2009; Mohammed, Shankar, & Banwet, 2008; Agarwal, Shankar, & Tiwari, 2007). How, ASCM require firms to nurture close relationship with key upstream suppliers and downstream customers (Ngai, Chau, & Chan, 2012) by coordinating and integrating different entities and functions along the value chain through operational, management and

information technology competences.

ASCM practices rely on “customer/market sensitivity, virtuality, process integration and networking” (Christopher, 2000). This implies that ASCM practices rely on business processes and structures that facilitate speed, adaptation and robustness (Azevedo, Govindan, Carvalho, & Cruz-Machado 2012). The business environment is growing increasingly challenging. The demand on firms to improve their business operations in order to remain competitive is getting stronger. ASCM practices hold the potential to stand firms out of the competition (Lori & Daniel, 2011). This study therefore attempts a conceptualisation of the nexus between ASCM practices and competitiveness of SMEs, adopting the dimensions of ASCM proposed by Christopher (2000).

2.2.1 Customer Sensitivity

Customer sensitivity requires that firms read and respond to customers’ real demand. It calls for firms to be demand-driven rather than forecast-driven; so that instead of relying on past sales to forecasts inventory, firms would rely on direct feed-forward from the marketplace by way of data on actual customer requirements (Christopher, 2000). In view of the need to respond promptly to the challenges and demands of today’s consumers, firms are rapidly transforming their operating strategies and adopting technologies to aid their processes (Gunasekaran, Lai, & Cheng, 2008). Today’s customers demand high quality products at low prices. To be competitive, firms need to be responsive to these unique and dynamic needs of consumers (Gunasekaran & Ngai, 2004). Customer sensitivity is one ASCM practice that enables firms to sense and serve customers promptly and also improve firms’ market growth.

Firms cannot afford to lose track of their customers’ requirements. Any firm that neglect to continue to be abreast with the requirements of its customers’ heads for disaster (Chen & Paulraj, 2004). In realization of this, firms have over the years sought ways of re-engineering their production processes to keep up with customers’ demand for a greater variety of reliable products with short lead times and reduced costs (Chen & Paulraj, 2004; Draaijer, 1992). Customers are inherently fickle; the products that caught their admiration yesterday no longer appeal to them today; and it is very likely that the products they patronize today, tomorrow they will shun (Ateke & Nadube, 2017). Thus, firms need to assess customers’ requirements regularly, and adjust their operations accordingly (Takeuchi & Quelch, 1983). Drucker (1954) aver that marketing is the core of business, and that any business wherein marketing is absent or incidental cannot be termed a business. This management pundit further states that marketing and innovation are the basic functions of business; while the primary responsibility of marketing is to create satisfied customers.

Satisfying customers’ requirements is thus the central purpose of any business (Doyle, 1994) and basic aim of marketing (Dibb, Simkin, Pride, & Ferrell, 1994). Therefore, the more sensitive a firm is to its customers’ needs and preferences, the more rewarding the transaction in the supply chain will be for that firm (Chen & Paulraj, 2004; Carson, Gilmore, & Maclaran, 1998). Delighting the customership is a marked way of outsmarting competitors, since the customer is the pivot of firms’ strategies and processes; and is accorded importance in strategic planning, quality initiatives, product customization, and responsiveness (Tan, Kannan, Handfield, & Ghosh, 1999). Thus, the paper proposes that:

H₁: Customer sensitivity significantly influence competitiveness of SMEs

2.1.2 Supply Chain Virtualisation

The term “virtual” is used to describe things that have effect without a real-life form. That is, things that exist basically in digital forms. Virtualization is thus used in reference to digital representations of real or imaginary objects (Verdouw, Beulens, & van der Vorst, 2013). With virtualization, time, place and human observation constraints are removed (Verdouw, Beulens, Trienkens, & van der Vorst, 2011). In addition to representing actual states, virtualization can reproduce historical states and simulate future states (Verdouw et al, 2013). Research interest in virtualization has been sustained for a long time; and the traditional research streams have focused on virtual machines, virtual reality, virtual organizations, and virtual teams (Meyer, Främpling, Holmström, 2009; Townsend, DeMarie, & Hendrickson, 1998; Steuer, 1992); however, there is now a growing interest in virtual objects (Främpling, Harrison, Brusey, & Petrow, 2007; Kärkkäinen, Ala-Risku, & Främpling, 2003). Advances in ICT are responsible for the interest in this latter perspective of the virtualization discourse. Virtualized centralized planning, orchestration and coordination has the potential to reinvent supply chain management practices; as physical proximity, handling and observation of object are no longer performed by same actors responsible for control and coordination (Lambert & Cooper, 2000).

The concept of virtuality has been applied in several domains with different meanings and foci. In supply chain management, virtuality is used to describe how the physical and information aspects of the supply chain operations are treated independently in such a way that the ownership and control of resources is consummated through internet/intranet (Gunasekaran et al, 2004) applications rather than through physical interactions. The term is an adaptation of the concept of virtual logistics introduced by Clarke (1998). With supply chain virtualization, objects are digitized and shared between partners from upstream suppliers to downstream consumers. Hence, handling every important facet of the supply chain process including stock control and replenishment, production planning and control, product design, transport control, logistic planning and scheduling, quality inspection, asset management and commercial applications (Rana, Osman, Abdul Manaf, Solaiman, & Abdullah, 2016; Verdouw et al, 2013; Chen & Paulraj, 2004). Virtualization is thus considered an important enabler of supply chain agility (Gunasekaran et al, 2004)

The world has experienced a remarkable revolution in computing and telecommunication technologies. This has compelled managers to adopt ICT to enable the establishment of best practices and policies in business management to engender efficiency and effectiveness (Al-Fawaer, Alhunity, & Al-Onizat, 2013). Virtualized supply chains transform traditional supply chain management activities into synchronized information-based operations that include upstream and downstream activities (Zhu, 2004). Operational cost reduction, improved information quality through the elimination of human errors and swift transfer of information between organizations are the major drivers of the adoption of ICT in supply chain management (Auramo, Kauremaa, & Tanskanen, 2005). Information is an essential input in business processes. Accurate and timely information constitutes the life blood of modern day firms that must survive the competitive environment (Beynon-Davies, 2009). The adoption of ICT in supply chain management enhances organizational performance through the accumulation and sharing of information (Fasanghari, Roudsari, & Chaharsooghi, 2008).

Though research on the impact of object virtualization on supply chain control is still in its infancy (Gunasekaran & Ngai, 2004), it can be inferred that virtualization is closely associated with supply chain efficiency as advances in ICT has been observed to impact

almost all areas of business. The use of ICT in supply chain operations enhances firms' competitiveness (Fasanghari et al, 2008). Through ICT, firms expedite the flow of information and other inputs which make for a more robust and resilient supply chain process without compromising efficiency (Lummus, Duclos, & Vokurka, 2003). To achieve competitiveness in the new age, firms must pay close attention to supply chain management issues (Lummus et al, 2003). They must explore ways of improving their flexibility, responsiveness and effectiveness in the market. They must also change or modify their operating strategies, methods, embrace technologies and implement supply chain virtualization (Fasanghari et al, 2008). ICT is deemed a necessity for the effective management of today's complex supply chains. Based on the foregoing, the paper proposes that:

H₂: Supply chain virtualisation significantly influence competitiveness of SMEs

2.1.3 Supply Chain Process Integration

There is revolution in the business environment today. Firms operate in an increasingly volatile environment where pervasive globalization, increasing business and technological complexities, faster flow of information and communication and rampant change are predominant (Iskanius, Haapasalo, & Page, 2006). Companies therefore seek partnerships and more result-oriented information links with suppliers and customers and internal operating processes. Supply chain activities have relied more on information technologies that enables cooperative arrangements (Power, 2005)

Supply chain process integration involves coupling of various nodes in the supply chain to facilitate the flow of resources in the supply chain for effective and efficient operation. Firms have different patterns of supply chain integration, however, short-term provisional alliances, senior-junior long-term relationships with suppliers and customer, and internet-based collaboration are common practices in supply chain process integration (Yusuf, Gunasekaran, Adeleye, & Sivayoganathan, 2004). The fundamental difference between traditional partnerships and supply chain process integration is in "the ease of formation and dissolution, relative status and commitment of members, the degree of data integration through the internet, and goals, which can range from advancement of manufacturing knowledge, outsourcing or marketing" (Yusuf et al, 2004).

Ease of access to data and knowledge, and ease of responding real time to changing market conditions differ across these range of supply chain practices, and these have differing impact on performance outcomes. Traditional alliance, lean supply chain and agile supply chain are three dominant patterns of supply chain process integration (Gunneson, 1997). Unlike the traditional alliance and lean supply chain, the agile supply chain focuses on exchange of resources that drive competitiveness on global dimension. The realisation of the full potential of information sharing among partner-firms in a supply chain is most feasible via process integration (Ateke & Dida, 2017).

Collaboration between sellers and buyers, joint product development, common systems and shared information are the hallmarks of process integration; and have become more prevalent as firms increasingly focus on managing core competencies and outsource all other activities. This new business world view echoes the inevitability of reliance on suppliers and alliance partners (Ateke & Dida, 2017). In supply chain process integration, the boundaries between firms are blurred; while trust and commitment are the prevailing ethos. Process integration also engenders joint strategy determination, seller-buyer teams, transparency of information

and even open-book accounting (Bagheri, Hamid, Shekarchizadeh, Mardani, & Asgari, 2014). The paper therefore proposes that:

H₃: Supply chain process integration significantly influence competitiveness of SMEs

2.1.4 Supply Chain Networking

As the business environment becomes more complex and advanced (Kosmala & Blach, 2013); to remain in business, firms increasingly require resources, most of which are human skills, technical competence and knowledge about customers, competitors and regulatory frameworks (Yildirim & Cakar, 2015). Often, these resources are not within the reach of individual firms. Individually, firms have limited resources and technical capability (Hsu & Tang, 2010) to thrive in the marketplace. Developing collaborative relationships that integrates the skills and capabilities of each firm in order to improve competitiveness is one strategic avenue open for firms to surmount the challenges of the business-scape (Baker, Faircloth, & Simental, 2005).

The frequent introduction of new products, customisation requirement of consumers, complex product design and shifts in consumer preferences have made continuous contact with customers and suppliers through supply chain networks a necessity (Davenport, 1998). In this context, supply chain network integration requires entities in a supply chain to have a common identity, which can range from commitment to agile practices, compatibility of structure, information architecture and tradable competencies (Yusuf et al, 2004). Networking among within and between firms to take advantage of temporal business opportunities; enable firms withstand the vagaries of the business environment in their drive to achieve set goals (Ateke & Kalu, 2016; Walden, 1999) has become a fashion. Such collaborative relationships involve resource sharing and risk sharing arrangements that give firms the advantage of withstanding threats and uncertainties (Walden, 1999). In view of the foregoing, the paper proposes that:

H₀₄: Supply chain networking significantly influence competitiveness of SMEs

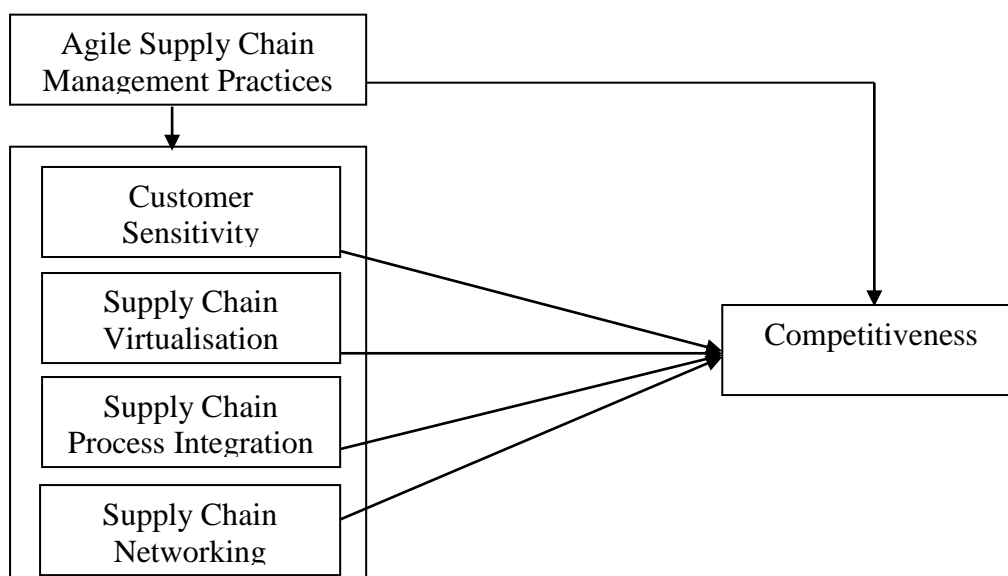


Fig. 1: Conceptual Framework of the Influence of ASCM Practices on Competitiveness of SMEs

Source: Researchers' Conceptualisation from Literature Review (2017)

Conclusion and Direction for Future Studies

As the business-scape gets increasingly convoluted and the competition become feistier, firms' ability to sense market demands (or changes thereof) and speedily respond to same has become a necessary precondition for survival and prosperity. Organisational adaptability in response to dictates of the business environment and fulfilling the changing preferences of consumers has been the stock-in-trade for progressive business praxis. ASCM has therefore become an essential requirement for sustainable competitiveness. Because ASCM practices improve firms' ability to meet changes in customer demand efficiently, without compromising quality. It also equips the firm to respond to competitors' moves timeously. It is thus a needful capability for forward looking firms; and must be enshrined as a culture in their business operations. The business environment will continue to change; and firms are required to continue to be flexible and adaptive to changing conditions.

The fluidity and complexity of business conditions and the drive of firms to thrive has tasked business thinkers to contrive several managerial ideas that could stand firms in good posture to withstand the vagaries of the business-scape. Firm must therefore necessarily embrace principles and practices that promote supply chain agility in order to remain robust and resilient in the business-scape. ASCM practices enable organisational responsiveness. Hence, ASCM practices are needed capabilities for firms that seek to thrive in today's business environment. The statement of Ateke and Didia (2017) that "the supply chain of firms must be sensitive, responsive and adaptive to customers' requirements; and that firms must accord as much importance to the way(s) they source for inputs as they do to the way(s) they deliver value to their customers" is thus very appropriate.

The focus of this paper was to conceptualise the influence of ASCM practices on the competitiveness of SMEs. The paper has proposed a framework which requires validation. Future studies may therefore be conducted to validate the model proposed in the paper, or consider expanding the model to accommodate other ASCM practices that are not covered in the paper.

References

- Agarwal, A., Shankar, R., & Tiwari, M. (2007). Modeling agility of supply chain. *Industrial Marketing Management*, 36(4), 443-457.
- Akpotu, C., Asiegbu, I. F., & Tamunosiki-Amadi, J. (2013). Organizational social asset and firm competitiveness in the Nigerian telecommunication sector. *American International Journal of Contemporary Research*, 3(7), 88-98.
- Al-Fawaer, M., Alhunity, S., & Al-Onizat, H. (2013). The impact of information technology in enhancing supply chain performance: An applied study on the textile companies in Jordan. *Research Journal of Finance and Accounting*, 4(8), 104-111.
- Ateke, B. W., & Nadube, P. M. (2017). Agile marketing for organizational resilience in a dynamic business environment: A theoretical reflection. *Rhema University Journal of Management and Social Sciences*, 5(2), 133-143.
- Ateke, B. W., & Didia, J. U. D. (2017). Agile supply chain management practices for efficient service delivery. *International Journal of Social Policy, Management and Administration*, 5(2), 31-50.
- Ateke, B. W., & Kalu, S. E. (2016). Collaborative marketing and business wellness of Global System of Mobile-communication (GSM) service providers in Nigeria *International Journal of Marketing and Communication Studies*, 1(1), 14-26.
- Auramo, J., Kauremaa, J., & Tanskanen, K. (2005). Benefits of IT in supply chain management: An explorative study of progressive companies. *International Journal*

- of Physical Distribution and Logistics Management*, 35(2), 82-100.
- Azevedo, S. G, Govindan, K., Carvalho, H., & Cruz-Machado, V. (2012). An integrated model to assess the leanness and agility of the automotive industry. *Resource Conservation and Recycling*, doi: 10.1016/j.resconrec.2011.12.013.
- Bagheri, M. M., hamid, A. A., Shekarchizadeh, A., Mardani, A., & Asgari, A. (2014). The mediating effect of supply chain integration on the relationship between information technology, trust and firm performance: A conceptual framework. *Sains Humanika*, 2(3), 85-92.
- Baker, S. M., Faircloth, J. B., & Simental, V. (2005). Perceptions of University-Corporate partnership influences on a brand. *Journal of Marketing Theory and Practice*, 13(2), 32-46.
- Beynon-Davies P. (2009). Formatted technology and informed action: The nature of information technology. *International Journal of Information Management*, 29(4), 3-14.
- Cameron, K. (1980). Critical questions in assessing organisational effectiveness. *Organisational Dynamics*, 66-80.
- Carson, D., Gilmore, A., & Maclaran, P. (1998). Customer or profit focus: An alternative perspective. *Journal of Marketing Practice: Applied Marketing Science*, 4(1), 26-39.
- Chen, I. J., & Paulraj, A. (2004). Towards a theory of supply chain management: The constructs and measurements. *Journal of Operations Management*, 22, 119-150.
- Chris, A. O. (2007). Cultural diversity management and organizational performance: A theoretical paradigm. *West African Journal of Business*, 9(2), 114-141.
- Christopher, M. (2000). The agile supply chain: Competing in volatile markets. *Industrial Marketing Management*, 29(1), 37-44.
- Clarke M. P. (1998). Virtual logistics: An introduction and overview of the concepts. *International Journal of Physical Distribution and Logistics*, 28(7), 486-507.
- Collin, J., & Lorenzin, D. (2006). Plan for supply chain agility at Nokia: lessons from the mobile infrastructure industry. *International Journal of Physical Distribution & Logistics Management*, 36(6), 418-430.
- Davenport, T. H. (1998). Putting the enterprise into the enterprise system. *Harvard Business Review*, 76(4), 121-131.
- Davis, B., & Sumara, D. (2010). If things were simple...: Complexity in education. *Journal of Evaluation in Clinical Practice*, 16(4), 856-860.
- Dibb, S., Simkin, L., Pride, W.M., & Ferrell, O. C. (1994). *Marketing concepts and strategies*. 2nd European Edition. Boston, MA: Houghton Mifflin.
- Doyle, P. (1994). *Marketing management and strategy*. London: Prentice-Hall.
- Draaijer, D. J. (1992). Market orientedness of improvement programmes in manufacturing: Results from field study research. *International Journal of Operations and Production Management* 12(7), 24-40.
- Drucker, P. F. (1954). *The practice of management*. New York: Harper and Row.
- Dubois, A., Hulthén, K., & Pedersen, A. (2004): Supply chains and interdependence: A theoretical analysis. *Journal of Purchasing & Supply Management*, 10, 3-9.
- European Investment Bank (2011). Supporting SMES in developing countries. Retrieved October 2016 from <http://www.eib.org/infocentre/press/news/all/supporting-smes-in-developing-countries.htm>
- Fasanghari, M., Roudsari, F. H., & Chaharsooghi, S. K. (2008). Assessing the impact of information technology on supply chain management. *World Applied Sciences Journal*, 4(1), 87-93.
- Främling, K., Harrison, M., Brusey, J., & Petrow, J. (2007). Requirements on unique identifiers for managing product lifecycle information: Comparison of alternative

- approaches. *International Journal of Computer Integrated Manufacturing*, 20(7), 715-726.
- Gunasekaran, A., & Ngai, E. W. T. (2004). Virtual supply-chain management. *Production Planning and Control*, 15(6), 584-595.
- Gunasekaran, A., Lai, K., & Cheng, T. C. E. (2008). Responsive supply chain: A competitive strategy in a networked economy. *Omega*, 36, 549-564.
- Gunneson, A. O. (1997). *Transitioning to agility: Creating the 21st century enterprise*. New York: Addison Wesley Publishing Company.
- Hoek, R. I., Harrison, A., & Christopher, M. (2001). Measuring agile capabilities in the supply chain. *International Journal of Operations and Production Management*, 21(1/2), 126-148.
- Hsu, H., & Tang, J. (2010). A Model of marketing strategic alliances to develop long-term relationships for retailing. *International Journal of Business and Information*, 5(2), 151-172.
- Iskanius, P., Haapasalo, H., & Page, T. (2006). Requirements for change in a traditional industry to be competitive: transformation towards an agile supply chain. *International Journal of Agile Systems and Management*, 1(3), 258-278.
- Kärkkäinen, M., Ala-Risku, T., & Främling, K. (2003). The product centric approach: A solution to supply network information management problems? *Computers in Industry*, 52(2), 147-159.
- Khan, K., Bakkappa, B., Metri, B., & Sahay, B. (2009). Impact of agile supply chains' delivery practices on firms' performance: Cluster analysis and validation. *Supply Chain Management: An International Journal*, 14(1), 41-48.
- Keskin, H., Sentürk, C., Sungur, O., & Kiris, H. M. (2010). The importance of SMEs in developing economies. Being a paper presented at the 2nd *International Symposium on Sustainable Development*, June 8-9 2010, Sarajevo.
- Kisperska-Moron, D., & Swierczek, A. (2009). The agile capabilities of Polish companies in the supply chain: An empirical study. *International Journal of Production Economics*, 118(1), 217-224.
- Kosmala, M. W., & Blach, J. (2013). The need for insurance education among non-financial companies in Poland: Survey result. *Procedia-Social and Behavioural Sciences*, 106, 2938-2946.
- Lambert, D. M., & Cooper, M. C. (2000). Issues in supply chain management. *Industrial Marketing Management*, 29(1), 65-83.
- Li, S., Ragu-Nathan, B., Ragu-Nathan, T. S. & Subba-Rao, S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *Omega*, 34 (1), 107-124.
- Lori S. C., & Daniel, R. H. (2011). The moderating effect of supply chain role on the relationship between supply chain practices and performance. *International Journal of Physical Distribution & Logistics Management*, 41(2), 104-134.
- Lummus, R. R., Duclos, L. K., & Vokurka, R. J. (2003). Supply chain flexibility: Building a new model. *Global Journal of Flexible Systems Management*, 4(4), 1-13.
- Meyer, G. G., Främling, K., Holmström, J. (2009). Intelligent products: A survey. *Computers in Industry*, 60(3), 137-148.
- Mohammed, I., Shankar, R., & Banwet, D. (2008). Creating flex-lean-agile value chain by outsourcing: An ISM-based interventional roadmap. *Business Process Management Journal*, 14(3), 338-389.
- Ngai, E., Chau, D., & Chan, T. (2012). Information technology, operational, and management competencies for supply chain agility: Findings from case studies. *The Journal of Strategic Information Systems*, (3), 232-249.

- O'Sullivan, D., & Abela, D. (2007). Marketing performance measurement ability and firm performance. *Journal of Marketing*, 71, 79- 93.
- Power, D. (2005). Supply chain management integration and implementation: A literature review. *Supply Chain Management: An International Journal*, 10(4), 252-263.
- Rana, S. M. S., Osman, A., Abdul Manaf, A. H., Solaiman, M., & Abdullah, M. S. (2016). Supply chain strategies and responsiveness: A study on retail chain stores. *International Business Management*, 10(6), 849-857.
- Rao, S. L. (2001). Indian companies in an open economy. *Economic and Political Weekly*, 36 (5/6), 457-461.
- Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2000). *Designing and managing the supply chain: Concepts, strategies and case studies*. New York: McGraw-Hill.
- Takeuchi, H., & Quelch, J. A.(1983). Quality is more than making a good product. *Harvard Business Review*, 61(4), 139-145.
- Tan, K. C., Kannan, V. R., Handfield, R. B., & Ghosh, S. (1999). Supply chain management: An empirical study of its impact on performance. *International Journal of Operations and Production Management*, 19(10), 1034-1052.
- Tan, K. C., Lyman, S. B., & Wisner, J. D. (2002) Supply chain management: A strategic perspective. *International Journal of Operations and Production Management*, 22 (6), 614-633.
- Townsend, A. M., DeMarie, S. M., & Hendrickson, A. R. (1998). Virtual teams: Technology and the workplace of the future. *The Academy of Management Executive*, 12(3), 17-29.
- Verdouw, C. N., Beulens, A. J. M., & van der Vorst, J. G. A. J. (2013). Virtualization of floricultural supply chains: A review from an Internet of Things perspective. *Computers and Electronics in Agriculture*, 99(1), 160-175.
- Verdouw, C. N., Beulens, A. J. M., Trienkens, J. H., & van der Vorst, J. G. A. J. (2011). A framework for modelling business processes in demand-driven supply chains. *Production Planning and Control*, 22(4), 365-388.
- Walden, B. L. (1999). *Resources sharing among North American libraries past, present and future: A model for export?* Retrieved October 2015 from <http://www.Stub.Unifrankfurt.Demesse/Proceeding/Walden>.
- Yildirim, I., & Cakar, L. R. (2015). A study on the collaboration opportunities between Universities and insurance industries in Turkey. *Advances in Social Sciences Research Journal*, 2(9) 163-172.
- Yusuf, Y.Y., Gunasekaran, A., Adeleye, E.O., & Sivayoganathan, K. (2004). Agile supply chain capabilities: Determinants of competitive objectives. *European Journal of Operational Research*, 159, 379-392.
- Zhu, K. (2004). Information transparency of business-to-business electronic markets: A game-theoretic analysis. *Management Science*, 50(5), 670-685.