A Review on the Integration of Supply Chain Management and Industrial Cluster

International Journal of Marketing Studies; Vol. 5, No. 6; 2013
ISSN 1918-719X E-ISSN 1918-7203
Published by Canadian Center of Science and Education

A Review on the Integration of Supply Chain Management and Industrial Cluster

Netsanet Jote Tolossa[1], Birhanu Beshah[1], Daniel Kitaw[1], Giulio Mangano[2] & Alberto De Marco[2]

[1] School of Mechanical and Industrial Engineering, Addis Ababa institute of Technology, Addis Ababa University, Addis Ababa, Ethiopia

[2] Department of Management and Production Engineering , Politecnico di Torino, Turin, Italy

Correspondence: Netsanet Jote Tolossa, School of Mechanical and Industrial Engineering, Addis Ababa institute of Technology, Addis Ababa University, Addis Ababa, Ethiopia. E-mail: netsijote@gmail.com

Received: August 13, 2013 Accepted: September 4, 2013 Online Published: November 7, 2013

doi:10.5539/ijms.v5n6p164 URL: http://dx.doi.org/10.5539/ijms.v5n6p164

Abstract

Although Supply Chain Management (SCM) and Industrial Cluster (IC) are two different fields of study, it has been identified that there is a natural and internal relationship between these two theories. Most of research works depict that, integration of the two concepts is in its infancy. The aim of this research is to review the integration between supply chain management and industrial cluster, at the same time to identify the gap and propose solution. To achieve the research aim, two pairs of keywords namely "supply chain" and "industrial cluster" were used, to track literatures from the online databases. The search initially identified over 46 articles. After further screening, they were reduced to 17. Finally, contents of these articles were analyzed based on their general focus area. From the content analysis, considerable evidences are found in the literature review on the integration of supply chain management with industrial cluster. The entire emphasis of the previous researches was on cluster supply chain (CSC) management, which highly promotes efficient operations of industrial clusters. Most of the CSC articles focused on the importance of cluster supply chain. However, there are few researches in the design, implementation and improvement of cluster supply chain. On the other hand, the role of industrial clusters in a global supply chain management and benchmarking of best practices have not yet been given the attention they deserve in previous studies. This is one of the first studies which critically examine researches that deal about supply chain management and industrial cluster integration theories.

Keywords: supply chain management, industrial cluster, cluster supply chain

1. Introduction

In the agricultural age, individuals were striving to be self-sufficient. Families were producing food, clothing, shelter and other necessities. In the industrial age, however, work division and specialization, among people, industries, regions and countries has become apparent. Nowadays, no organization is self-sufficient; rather they cooperate and depend on each other. Any organization, whether a large corporation, public body, or small business, which aims to meet the needs of customers and stakeholders needs resources including materials, equipment, and supplies from other organizations. For instance, a product as simples as a shoe, constitutes over 100 parts and while a complicated product like an automobile constitutes thousands of parts. According to (Westbrook & New, 2004) the performance of an organization is influenced to a greater or lesser degree by the actions of the organizations that integrate the inputs and the supply chain at large.

Whatever an organization's excellence is, its competitiveness is entirely dependant on the strength of supply chain to meet customers' requirements – high standard of quality, inexpensive prices and fast delivery. Since the strength of a supply chain is measured by the weakest link, all related functions must operate in an integrated manner in which the various partners within the supply chain must be efficiently carried out.

The most important methodologies developed to enhance coordination and cooperation of different organizations towards a common goal are Supply Chain Management (SCM) and Industrial Cluster (IC). The former mainly deals with virtual coordination whereas the latter focuses also on physical coordination. Basically, SCM and IC belong to two different areas of study. Some scholars have shown interest in the integration and maximization of their benefits (DeWitt *et al.,* 2006; Han, 2009; Sureephong *et al*., 2008; Huang & Xue, 2012).

There is no comprehensive review and examination on the articles which discuss about the integration of supply chain and industrial cluster theories. The outcome of this review will have significant contribution to summarize the efforts made up to now and to identify future research directions for the prosperity of the disciplines and raising the performance of firms.

Therefore, this study aims at taking a step forward the effort of examining the combination of supply chain and industrial cluster to identify gaps and to suggest potential possibilities for future research areas. In order to achieve the objective of this paper a systematic review of articles published in international journals has been made using content analysis. This is followed by a brief discussion on the methodology adopted for the study. Within the analysis and discussion section, the integration of supply chain and industrial cluster articles have been reviewed. In the final section of the paper, concluding remarks and opportunities for further research were given.

1.1 Supply Chain Management (SCM)

Supply Chain Management (SCM) aims at the efficient use and operations of supply chain assets, products, information and cash flows (Sunil & Meindl, 2006). According to Lummus and Vokurka, (1999), the Supply Chain Council (1997) defines supply chain management as a system that "encompasses every effort involved in producing and delivering a final product, from the supplier's supplier to the customer's customer". In general, supply chain management includes managing supply and demand, sourcing raw materials and parts, manufacturing and assembly, warehousing and inventory tracking, order entry and order management, distribution across all channels, and delivery to the customers. Figure 1 shows the typical supply chain that involves a variety of stages and costs such as customers, distributors, manufacturer, supplier, material costs, transportation costs, manufacturing costs, inventory costs etc.

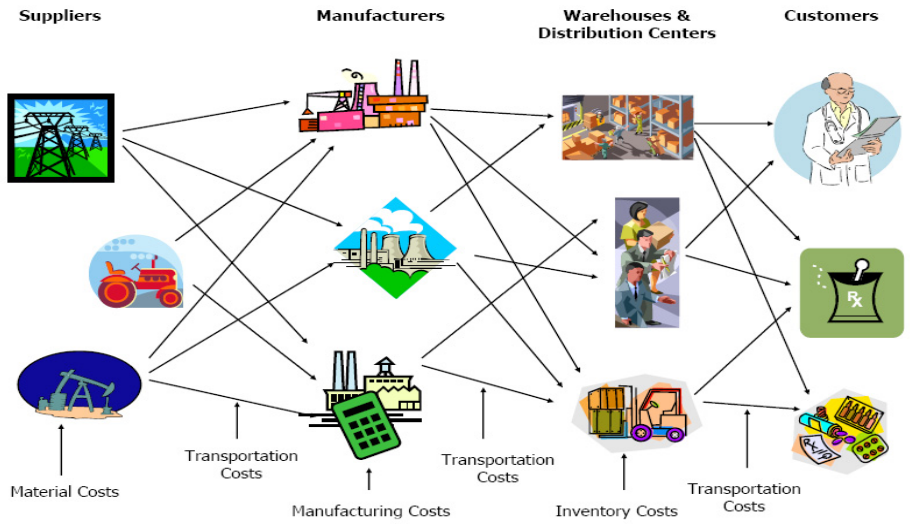

Figure 1. Supply chain

Source: Stevens Institute of Technology.

Application of SCM has also been become a common practice across industries, since they address long-term strategic alliance, supplier-buyer partnerships, cross-organizational logistics management, joint planning and control of inventory, and information sharing. It has been also considered as a major component of competitive strategies as effective SCM leads to lowering of the total amount of resources required to provide the necessary level of customer service to a specific market, and improving customer service through increased product availability and reduced order cycle time (Banomyong & Supatn, 2011).

SCM mainly aims at virtual integration of organizations' product, information and financial flows. Regarding its scope, SCM may encompass the simplest interaction among departments up to the largest global supply chain. For example, Ethiopia industries exports hides and skin to Italy. Thus, industries in Italy use the hides and skin to

produce leather good and shoes usually for European customers. Commonly, the end product manufacturer is responsible to manage a global supply chain. Due to this, manufacturers are focusing more on management of supplies than participating directly in the manufacturing process.

1.2 Industrial Cluster (IC)

Similar to the SCM, one of the aims of an industrial cluster is to join stages of a supply chain for effective flows of material, information and finance. Although the development of information communication technology (ICT) attaches organizations to favor virtual supply chain management, cluster-based supply chain coordination is recognized in the recent times. Cluster-based economic development is about moving from clump and clutter to integrated innovation systems. In fact, IC is not a new phenomenon as Das & Das, (2011) discussed. IC has evolved from Ven Thunen Location Theory (1826), Marshal's Industrial District Theory (1920), Max Weber's Industrial Complex Theory (1950) and Michal Porter Industrial Cluster Theory (1990).

An IC is a concentration of interconnected, geographically close businesses operating together within the same commercial sector and whose activities rely on certain local specificities such as availability of natural resources, centres for technological development (through universities, research centres, technology parks, or a technology-based industry), and a consolidated productive structure for all tiers of the productive chain of the region (Pedro *et a*l., 2011). As shown in figure 2, an industrial cluster is an agglomeration of companies, suppliers, service providers, and associated institutions in a particular field. Often included are financial providers, educational institutions, and various levels of government. These entities are linked by externalities and complementarities of different types and are usually located near each other. Because of their proximity by geography and activities, cluster constituents enjoy the economic benefits of several location-specific externalities and synergies (Shakya, 2009).

In general, concept of cluster suggests connection and association of firms that are linked vertically and horizontally through their commonalities and complementariness in products, services, inputs, technologies, transportations, warehouse and communication (Porter, 1998). Recent research has extended Porter's theory to different types of industries where clusters are viewed as a way to maintain global competitiveness. This feature provides us a new perspective to study cluster in the view of supply chain, which is the expected result of regional collaboration and innovation.

Cluster is not only a weapon for competitiveness, but also an industrial development strategy. This is because the scope of industrial clusters may vary. For example, in the case of vertical cluster, the cluster may constitute stages from raw materials up to supplying a product in the global market, whereas horizontal clusters concentrate in the process, and supplying work-in-process to the global supply chain. In both cases, geographical proximity plays the most critical role in integrating key players of the cluster.

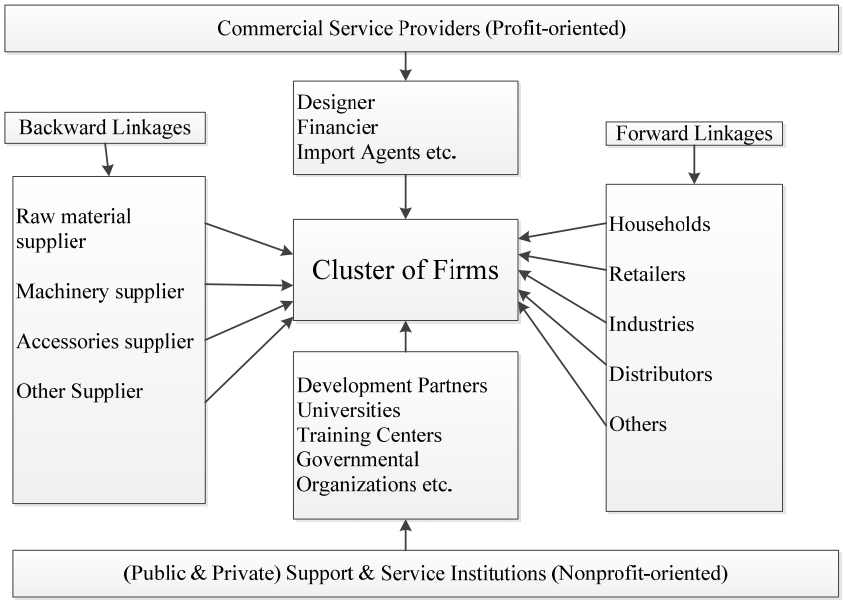

Figure 2. Typical cluster map

1.3 Integration of SCM and IC

Although SCM and IC are two different fields of study, it has been identified that there is a natural and internal relationship between these two theories (Huang & Xue, 2012). Supply Chain Management (SCM) support Industrial Cluster (IC) by integrating processes and building long-term relationships among cluster firms involved in the flow of products and services from the source to end-users (Yan &Wang, 2008). All firms in the supply chain can benefit through achieving lower costs, improved customer value and satisfaction, and greater competitive advantage (Mentzer *et al.,* 2001). Industrial cluster support the supply chain by integrating academic institutions, government agencies, association and supporting industry in order to create the innovation and enhance the knowledge in the supply chain (Sureephong *et al.,* 2008). Integrating supply chain and industry cluster theories are becoming the key components in the survival and development of many economic entities and enterprises (Zhu & Li, 2010).

For example, Han (2009) studied how supply chain and industry cluster increase the competitive advantage of industries. He emphasised that industry cluster is more in the macro-economic level which focuses on collaboration between partners in the same industry, and supply chain is more in micro-economic level which focuses on the information-sharing between companies which are in the same production chain. He also discussed the differences and links between the two fields and recommended the use of the intrinsic relationship between SCM and IC to boost industrial competitiveness, which paves the way for economic development and stepping up of the competitiveness of the regional economy. This point has been proved in depth studies of DeWitt, (2006) and Huang & Xue (2012). DeWitt demonstrated the linkage between Porter's cluster theory and SCM, and provided evidence of their potential joint positive impact on competitiveness and firm performance.

Huang and Xue (2012) named the integration of the two disciplines as cluster supply chain (CSC). As shown in figure 3, in CSC industrial cluster is the super set of supply chain management. This paradigm is largely influenced by Porter's (1990) industrial cluster theory. Huang and Xue (2012) studied the application of CSC strategy for Small and Micro Enterprises (SMEs) to face the global challenges through all means of collaborations. Moreover, the researchers clarified the following questions: When do small firms use CSC to do business? How do small firms use CSC? What effects does the application of CSC have on SMEs' competitive performance? Zhu and Li (2010) also studied modeling of Information System for CSC-based on Unified Modeling Language (UML).

In general, the above articles discuss about a CSC as the integration of SCM and IC. As indicated in Figure 3, SCM is considered as a basic component of the IC. This clearly justifies the fact that the research is not exhaustive, and hence further research has to be conducted to accelerate the development of the discipline.

Moreover, the convergence or merger of these two independent disciplines seems to bring a new theory in the body of knowledge. Due to this reason, it becomes worth undertaking research area both for academia and practitioners. So far, there is no comprehensive review and examination to define the integration/merger between SCM and IC by different researchers. Therefore, this research aims at taking the integration process a step further by reviewing the articles published in international journals dealing with this area.

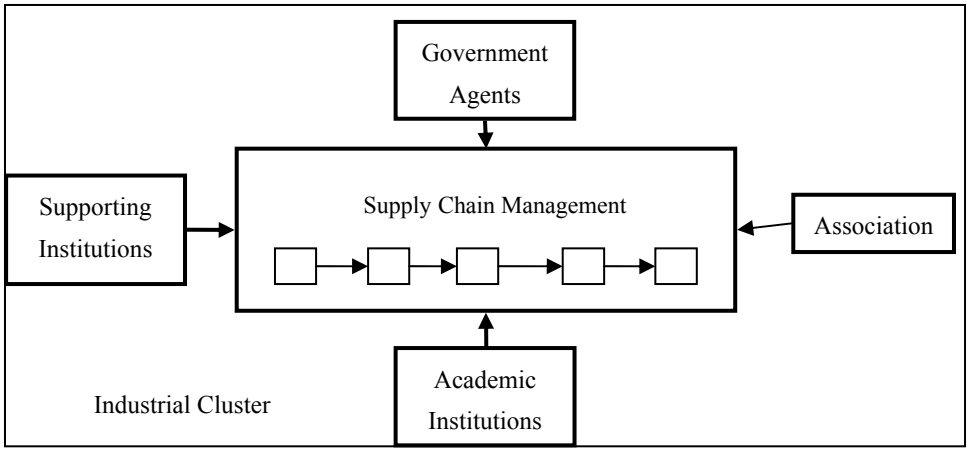

Figure 3. Cluster Supply Chain (CSC)

2. Methodology

The Method section describes in detail how the study was conducted, including conceptual and operational definitions of the variables used in the study, Different types of studies will rely on different methodologies; however, a complete description of the methods used enables the reader to evaluate the appropriateness of your methods and the reliability and the validity of your results, It also permits experienced investigators to replicate the study, If your manuscript is an update of an ongoing or earlier study and the method has been published in detail elsewhere, you may refer the reader to that source and simply give a brief synopsis of the method in this section.

To achieve the paper's objectives, the authors conducted a systematic literature review. Contents of articles published on the international journals discussing about the integration of SCM and IC were identified and analyzed. As emphasized by Seuring and Gold (2012), content analysis is an effective tool for conducting literature reviews in a systematic and transparent way. Accordingly, the methodology used by this study is content analysis.

2.1 Selection of Articles

Our literature sample comprises articles that were published in the international journals particularly focusing on the integration of supply chain and industrial cluster. The authors have designed a structured process for selection of the appropriate articles. The research of the articles was carried out using online databases and library services such as Emerald (www.emeraldinsight.com), Taylor & Francis (www.tandfonline.com), Wiley InterScience (www.interscience.wiley.com), and ELSEVIER (www.elsevier.com). Different refinement processing steps may be needed to ensure that identified articles really deal with the topics addressed. This was done by reading the articles and reflecting upon their appropriateness for the topic studied. In this regard, the authors used a three-stage refinement process using data reduction procedures.

Initially an article search was carried out based on a pair of keywords such as "supply chain" and "industrial cluster" to be jointly found in titles, keywords or abstracts. This yielded 46 articles published between 1996 and 2012. This stage was limited to referee journal articles to ensure the quality of the documents and that they had gone through a strict review process.

Titles and keywords of the identified articles were screened in the second stage. A total of 32 articles (out of the 46) were selected through this process. After a further process of screening 17 articles (out of 32) published between 2006 and 2012 in various online databases (see Figure 4) were identified. This third stage was accomplished after reviewing the abstracts and conclusions of all 32 articles. Stages 1-3 were carried out manually and a spreadsheet database was built with a search and check function to ensure the required criteria.

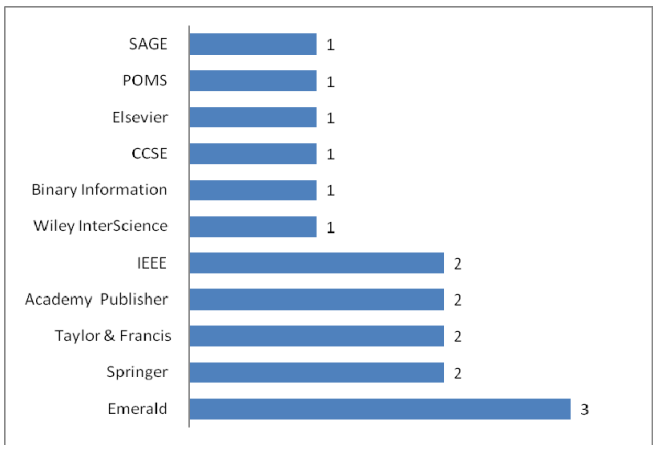

Figure 4. Online databases to integrate SCM and IC

2.2 Review Process

As a means of refining the content analysis, an instrument for collecting the main facts within each of the 17 articles was also designed. These facts included, but were not limited to, titles, authors, objectives, research approaches, industries, and focus areas (see Table 1). This information was then used to identify the integration of supply chain and industrial cluster theories, discuss the findings and finally draw conclusions.

Table 1. Summary of key articles on the integration of supply chain and industrial cluster

No	Title	Author	Research Approach	Industry	Objective	General Focus Area
1	Multi-agent Supply Chain System Architecture of Cluster	Chen, 2006	Literature review	-	To identify and explain the characteristics of enterprise cluster supply chain, and also to discuss the application of multi-agent technology in enterprise cluster supply chain management and with the aim of giving a multi-agent supply chain architecture of enterprise cluster	The application of multi-agent technology in enterprise cluster supply chain
2	Clusters and supply chain management: the Amish experience	DeWitt *et al*., 2006	Case study	Amish furniture industry in Homes Country,USA	To demonstrate the linkage between Porters cluster theory and supply chain management and provide evidence of their potential joint positive on competitiveness and firm performance	Cluster supply chain
3	Economic clusters and the supply chain	Patti, 2006	Case study	US Petrochemical firms	To illustrate the advantages for firms which build local supplier and customer relationships	Cluster supply chain
4	Cluster Cluster Evolution, the Transformation of Old Industrial Regions and the Steel Industry Supply Chain in North East England	Sadler, 2004	Case study	Steel Industry in North East England	This article carried out in the response to the decline of the steel industry in North East England. The changing fortunes of the steel industry supply chain are interpreted in terms of the industrial cluster discourse.	Cluster supply chain
5	Following the Thread: Industry Cluster Theory, the New England Cotton Textiles Industry, and Implications for Future Supply Chain Research	Bozarth *et al*., 2007	Case study	New England Cotton Textile Industry	To introduce supply chain management research to industry cluster theory within the context of supply chain management decisions.	Cluster supply chain
6	Cluster Development and Knowledge Exchange in Supply Chain	Sureephong *et al*., 2008	Case study	French Tool Producer	To improve knowledge exchange in the supply chain	Cluster supply chain
7	Coordination game model of co-opetition relationship on cluster supply chains	Min *et al.,* 2008	Research paper	-	Application of game theory in Cluster supply chain	Application of game theory in Cluster supply chain
8	Research on the Relevance of Supply Chain and Industry Cluster	Han, 2009	Literature review	-	To identify the linkage and difference of supply chain and industrial cluster	Cluster supply chain
9	Design and Optimization of Cluster Supply Chain Based on Genetic Algorithm	Liu *et al.,* 2009	Research paper	-	To develop frame work and approach to design with a cross-chain horizontal cooperation and to present a hybrid method to find solution	Designing cluster supply chain framework
10	Modeling of Information System for Cluster Supply Chain Based on UML	Zhu & Li, 2010	Research paper	-	To analyze systematically the essential structure of information system for cluster supply chain based on unified modeling language (UML).	Designing information system for cluster supply chain
11	Integrating Project Activities: the Theory and Practice of Managing the Supply Chain through Clusters	Nicolini *et al*., 2010	Case study	UK construction industry	To demonstrate the use of cluster as an organizational approach to supply chain integration using UK construction industry	Cluster supply chain

12	Comparative Supply Chain Performance: Measuring Cross-Cultural Effects. The Example of the Bratislava Regional Automotive	Bardy, 2010	Case study	Bratislava automotive cluster	To examine how performance in a supply chain network is biased through cultural differences using Bratislava Regional Automotive	Cluster supply chain
13	Cluster Building and Logistics Network Integration of Local Food Supply Chain	T.G.Bosona & G.Gebresenbet, 2011	Case study	Food supply chain	To investigate local food supply chain characteristics and develop a coordinated distribution system to improve logistics efficiency, reduce environmental impact, increase potential market for local food producers and improve traceability of food origin for consumers	Cluster supply chain
14	An Application Analysis of Cluster Supply Chain: A Case Study of JCH	Huang & Xue, 2012	Case study	JingCheng Mechanical and Electrical Holding co.,Ltd.(JCH	To give some theoretical suggestions and practical approaches in support of the implementation of "cluster supply chain" (CSC)	Implementing CSC in SMEs
15	The Impact of Service System on the Implementation of Cluster Supply Chain	Xue *et al*., 2012	Case study	JingCheng Mechanical and Electrical Holding co.,Ltd.(JCH)	To fill the gap between the related theories and practices in CSC.	Implementing CSC in SMEs
16	Intelligent Model Design of Cluster Supply Chain with Horizontal Cooperation	Li *et al*., 2012	Research paper	-	To provide a novel framework and approach to design cluster supply chain without across-chain horizontal cooperation, then by introducing item allocation proportion of vertical and horizontal cooperation	Designing cluster supply chain framework
17	Framework of Analyzing Service-Centric cluster Supply Chain: A Case Study of Collaborative Procurement	Xue *et al*., 2012	Case study	(Textile and garment industry cluster)	To demonstrate the construction and development of cluster supply chain, in which the role of service system is described in detail Based a case study of collaborative procurement in a textile & garment industry cluster	Implementation of cluster supply chain in SMEs

3. Analysis and Discussion

Content analysis is summarized in Table 1 giving particulars concerning author's name, title, industrial category, type of paper, objective and general focus area of study. The researches are categorized into literature review, research paper and case study as shown in Figure 5. Most of research works were case studies, which depict that, on the one hand integration of the two concepts is in its infancy and, on the other hand, that less attention had been given to research paper, literature review and other approaches. Case studies focused on different industries including construction, manufacturing, textile, furniture, and small and medium enterprises (SMEs). The industrial categories also revealed that more research could be done by taking various cases.

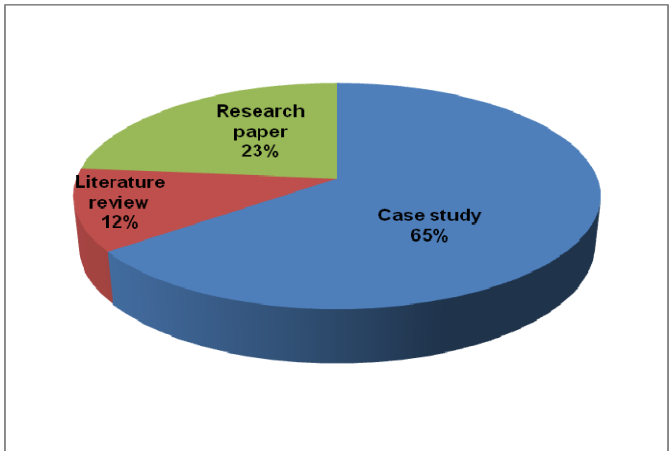

Figure 5. Approach wise representation of articles

What is evident from Table 1 is that, all of the reviewed articles were written on the new management field integrating SCM and IC called cluster supply chain (CSC). In addition, the authors of this research paper further analyzed the CSC articles to identify any possible gaps that could exist. Analyses of the articles related with CSC were scrutinized based on the general focus area of the articles. The articles fall in the following four categories.

- **Importance of CSC**: To demonstrate the linkage between supply chain and industrial cluster theories. Some articles provide evidence on the integration of these two independent disciplines increase the competitive advantage of industries and firm performance (for example, DeWitt *et al*., 2006; Patti, 2006; Sadler, 2007; Bozarth *et al.,* 2007; Sureephong *et al.,* 2008; Han, 2009; Nicolini *et al*., 2010; Bardy, 2010; T.G.Bosona & G. Gebresenbet,2011).
- **Implementing CSC**: To fill the gap between the related theories and practices in CSC, some articles used, case study to explain the key problems in the practice of cluster supply chain (for example Huang & Xue, 2012 and Xue *et al.,* 2012).
- **Improving CSC**: Application of other theories in cluster supply chain (CSC) disciplines to maximize its benefit (for example, Chen, 2006 and Min *et al*., 2008).
- **Designing CSC**: To develop frame work and approach for cluster supply chain using different tools and software (for example, Liu *et al.,* 2009; Zhu & Li, 2010 and Li *et al*., 2012).

As seen from the above, over 50% of the studies mainly focused on the importance of CSC. This clearly shows the research in the area of designing, implementing and improving CSC are limited and requires further study. The importance of CSC has been further examined and evaluated based on the following seven criteria.

- Geographical proximity
- Market potential
- Specialization
- Support services
- Information flow
- Cooperation and integration
- Trust

Each article has been evaluated based on the above criteria. One article may fulfill more than one criterion, and based on this a tally sheet has been developed and the result is summarized in Figure 6. Based on such analysis, most of the selected articles discussed about how the three criteria i.e. geographical proximity, cooperation and integration, and trust improve the performance of the supply chain. Two articles that discussed about information flow, market potential and specialization characteristics of cluster provide SCM researches with a rich set of well-tested concepts. None of the articles discussed about the most important criteria, i.e. support services.

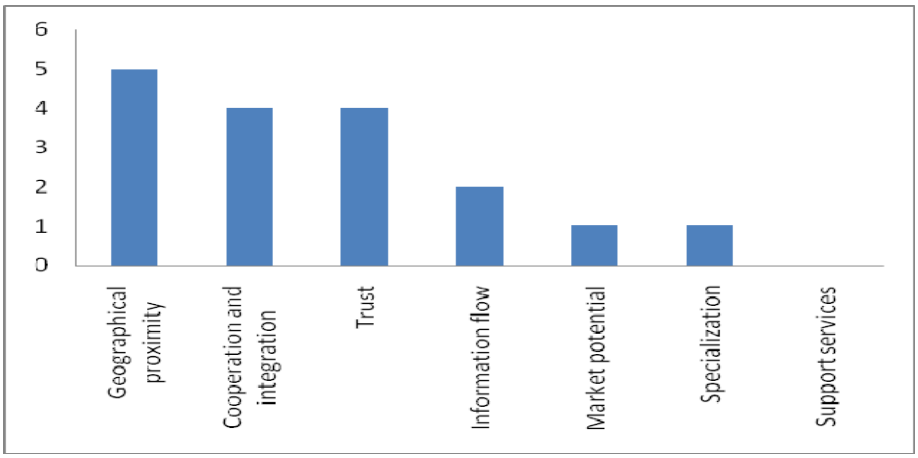

Figure 6. Specific focus areas of the selected articles

In addition to the findings obtained through the analysis, the existing body of knowledge has been used to augment, support and critique the integration between the two fields. SCM and IC integration can definitely increase to the competitive advantage of a firm, and they are the key to survival and development of many economic entities and enterprises. However, related research on the merger of SCM and IC is still in its infancy, and it is difficult to put theoretical results into practice (Xue *et al.,* 2012). To fill this gap, three areas of studies are proposed to address fully the integration of these two fields. These are cluster supply chain, industrial cluster in the global supply chain management, and benchmarking of best practices.

- **Cluster supply chain**: as discussed above, the literature in the integration of SCM and IC are basically tilted towards one direction that is CSC management. According to Porter's argument, this is because the SCM theory is considered at a micro-economic level and that of IC at macro-economic level theories. However, there are still areas for further study on the design, implementation and improvement of CSC. Moreover, the effect of supporting services and specialization on cluster supply chain also require further study.
- **Industrial cluster in the global supply chain management**: Contrary to CSC theory, global supply chain is the super set of industrial clusters. Owing to this, the role of industrial clusters in the global supply chain management should be further examined.
- **Benchmarking of best practices**: The two theories could continuously exchange best practices. Hence, SCM and IC can exist independently, and through intensive exchange and/or flow of information, knowledge and technology from one to the other leads into a perfect combination of these theories. Therefore, future research could focus on merger of these theories for effective exchange of best practices.

4. Conclusion

The aim of this paper is to clarify and define the integration between industrial cluster and supply chain management theories and at the same time to identify the gap. Content analysis of recent articles published in the international journals is used as a methodology. In general, the research in this area is at its infancy. The researches conducted so far are entirely focused on the importance of cluster supply chain. Further studies in the design, implementation and improvement of cluster supply chain have to be carried out. Moreover, we recommended that cluster in the global supply chain and benchmarking of best practices among these two disciplines should be studied further for effective exchange of know-how and technology.

References

Banomyong, R., & Supatn, N. (2011). Developing a Supply Chain Performance Tool for SMEs in Thailand. *Supply Chain Management: An International Journal*, *16*(1), 20–31. http://dx.doi.org/10.1108/13598541111103476

Bardy, R. (2010). Comparative Supply Chain performance: Measuring cross-Cultural Effects. The Example of thye Bratislava Regional Automotive Manufacturing Cluster. *Knowledge and Process Management*, *17*(2), 95–110. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/kpm.345/pdf

Bosona, T. G., & Gebresenbet, G. (2011). Cluster Building and Logistics Network Integration of Local Food Supply Chain. *Biosystems Engineering*, *108*(4), 293–302. http://dx.doi.org/10.1016

Bozarth, C., Blackhurst, J., & Handfield, R. B. (2007). Following the Thread: Industry Cluster Theory, the new England Cotton Textiles Industry, and Implications for Future Supply Chain Research. *Production and Operations Management*, *16*(1), 154–15. http://dx.doi.org/10.1111/j.1937-5956.2007.tb00172.x

Chen, Y. (2006). Multi-agent Supply Chain System Architecture of Cluster. *Enginnering Managemnt IEEE International Conference* (pp. 238–242). http://dx.doi.org/10.1109/IEMC.2006.4279856

Das, R., & Das, A. K. (2011). Industrial Cluster: An Approach for Rural Development in North East India. *International Journal of Trade, Economics and Finance*, *2*(2), 161–165. Retrieved from http://www.ijtef.org/papers/96-F514.pdf

DeWitt, T., Giunipero, L. C., & Melton, H. L. (2006). Clusters and supply chain management: the Amish experience. *International Journal of Physical Distribution and Logistics Mangement*, *36*(4), 289–308. http://dx.doi.org/10.1108/09600030610672055

Han, X. (2009). Research on the Relevance of Supply Chain and Industry Cluster. *International Journal of Marketing Studies*, *1*(2), 127–130. http://www.ccsenet.org/journal/index.php/ijms/article/view/4237

Huang, B., & Xue, X. (2012). An application analysis of cluster supply chain: a case study of JCH. *Kybernetes*, *41*(1), 254–280. http://dx.doi.org/10.1108/03684921211213070

Li, J., Xiong, N., Park, J. H., Liu, C., MA, S., & Cho, S. (2012). Intelligent model design of cluster supply chain with horizontal cooperation. *Journal of Intelligent Manufacturing, 23*(4), 917–93. http://dx.doi.org/10.1007/s10845-009-0359-6

Liu, C., Chen, J., & Yuan, A. (2009). Design and Optimization of Cluster Supply Chain Based on Genetic Algorithm. *Proceedings of the Second Symposium International Computer Science and Computational Technology* (pp. 423–426). Retrieved from http://www.academypublisher.com/proc/iscsct09/papers/iscsct09p423.pdf

Lummus, R. R., & Vokurka, R. J. (1999). Defining supply chain management: a historical perspective and practical guidelines. *Industrial Management & Data Systems*, *99*(1), 11–17. http://dx.doi.org/10.1108/02635579910243851

Mentzer, J. T., DeWitt, W., Keebler, J. S., Nix, N. W., Smith, C. D., & Zacharia, Z. G. (2001). Defining supply chain management. *Journal of Business Logistics*, *22*(2), 1–25. http://dx.doi.org/10.1002/j.2158-1592.2001.tb00001.x

Min, Z., Feiqi, D., & Sai, W. (2008), Coordination game model of co-opetition relationship on cluster supply chains. *Journal of Systems Engineering and Electronics*, *19*(3), 499–506. http://dx.doi.org/10.1016/S1004-4132(08)60113-9

Nicolini, D., Holti, R., & Smalley, M. (2010). Integrating project activities: the theory and practice of managing the supply chain through clusters. *Construction Management and Economics*, *19*(1), 37–47. http://dx.doi.org/10.1080/014461901452067

Patti, A. L. (2006). Economic clusters and the supply chain: a case study. *Supply Chain Management: An International Journal*, *11*(3), 266–270. http://dx.doi.org/10.1108/13598540610662176

Pedro C. O., Hélcio M. T., & Márcio L. P. (2011). Relationships, cooperation and development in a Brazilian industrial cluster. *International Journal of Productivity and Performance Management*, *60*(2), 115–131. http://dx.doi.org/10.1108/17410401111101467

Porter, M. (1990). *The competitive advantage of nations*. New York: The Free Press.

Porter, M. E. (1998). Clusters and the new economics of competition. *Harvard Business Review*, *76*(6), 77–90. Retrieved from http://www.rimisp.org/wp-content/uploads/2012/07/31_rimisp_Cardumen.pdf

Sadler, D. (2004). Cluster Evolution, the Transformation of Old Industrial Regions and the Steel Industry Supply Chain in North East England. *Regional Studies*, *38*(1), 55–66. http://dx.doi.org/10.1080/0034340031000163225 3

Seuring, S., & Gold, S. (2012). Conducting content-analysis based literature reviews in supply chain management. *Supply Chain Management: An International Journal*, *17*(5), 544–555. http://dx.doi.org/10.1108/13598541211258609

Shakya, M. (2009). *Clusters for competitiveness:A Practical Guide &Policy Implications for Developing Cluster Initiatives*. Socoal Science Resrarch Network. http://dx.doi.org/10.2139/ssrn.1392479

Sunil, C., & Meindl, P. (2006). *Supply Chain Management.* New Dehli : Prentice Hall of India Private Limited.

Sureephong, P., Chakpitak, N. Buzon, L., & Bouras, A. (2008). Cluster Development and Knowledge Exchange in Supply chain. *International conference on Software Knowledge Information Management and Applications* (pp. 1–6). http://arxiv.org/abs/0806.0519

Westbrook, R., & New, S. J. (2004). *Understanding Supply Chains: Concepts, Critiques and Futures*. Oxford: Oxford University Press.

Xue, X., Wei, Z., & Liu, Z. (2012). The impact of service system on the implementation of cluster supply chain. *Service Oriented Computing and applications*, *6*(3), 215–230. http://dx.doi.org/10.1007/s11761-012-0104-4

Xue, X., Wei, Z., & Zeng, Z. (2012). Framework of Analyzing Service-Centric Cluster Supply Chain: A Case Study of Collaborative Procurement. *Journal of Software*, *7*(4), 733–740. http://dx.doi.org/10.4304/jsw.7.4.733-740

Yan, B., & Wang, L. (2008). Supply Chain Management and Clusters—A Case Study on Guangdong Automobile Clusters. *International Seminar on Business and Information Management: IEEE*, 364–367. http://dx.doi.org/10.1109/ISBIM.2008.164

Zhu, H., & Li, X. (2010). Modeling of Information System for Cluster Supply Chain Based on UML. *Journal of Computational Information Systems,* *6*(9), 2849–2857. Retrieved from http://www.jofcis.com/publishedpapers/2010_6_9_2849_2857.pdf