

The Impact of Supply Chain Integration on Supply Chain Performance (Case study: National Company of Oil Products Distribution of Kermanshah Province)

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ABSTRACT

Organization are seeking ways to improve their supply chain performance to provide the highest value to customers and maintain their competitive advantage against competitors, because in today's competitive world the competitions among the supply chains of organization. Therefore, supply chain integration has been studied extensively by researchers in this field in the last decade as one of the critical factors that has a broad impact on supply chain performance. The results of the studies conducted in this field indicate that supply chain integration is considered as one of the factors that improves supply chain performance. In this paper, the impact of supply chain integration on supply chain performance has been studied by mediating variables of Information sharing, Partner relationship management and Business benefits. The statistic population of this study is National Company of oil Products Distribution of Kermanshah Province. Data from 118 members of the supply chain of this organization were collected on June 2013 to study the hypotheses presented in this article. The results showed that supply chain integration facilitates information sharing among the members of the supply chain which will cause the supply chain partners coordination and solidarity. Consequently, the partners can manage their relationships better and information sharing among the members of the supply chain will also provide business benefits for them. These factors, in turn, will lead to better performance of the supply chain.

KEYWORDS: Supply chain integration, Information sharing, Partner relationship management, Business benefits, Supply chain performance.

1-INTRODUCTION

Researchers agreed on the developing importance of the integration between supply chain partners (Lummus, R.R., Krumwiede, D., Vokurka, R.J., 2001). Supply chain integration and its effect on supply chain performance have been studied extensively by researchers of this field. The results show that supply chain integration is considered as one of the critical factors which improves supply chain performance (Frohlich, M.T., Westbrook, R., 2001). However, researchers have studied supply chain integration from different aspects, for example, Pamela Danese, Pietro Romano, Marco Formentini (2011) and Christina W.Y. Wong, Chee Yew Wong, Sakun Boon-itt (2012) studied integration from internal and external dimension. Yuanqiong He, Kin Keung Lai (2011) studied both operational integrity and strategic integrity of the supply chain. But they all agreed that supply chain integration has a positive impact on supply chain performance. Many of the studies done in this field were to understand the fact that how the positive impact of supply chain integration could be increased. For example, Marcos André Mendes Primo (2010) studied the mechanisms of supply chain integration in order to overcome the supply problems in the manufacturing companies. However, in the study of the relationship between supply chain integration and supply chain performance, the mediating factors through which supply chain integration affects supply chain performance, should not be ignored. One of these factor is information sharing. Many researchers agree about significant benefits of information sharing among supply chain partners (Bowersox DJ, Closs D J & Keller S B., 2000). Flynn BB, Huo B & Zhao X (2010) also stated that supply chain integration has a positive impact on the efficient flow of information. Information sharing in the supply chain has many benefits, such as: increasing customer satisfaction (Li S & Lin B, 2006), increasing the ability of organizations in faster delivery of goods to customers (Zhou H & Benton WC, 2007), facilitating the organization's achievement to competitive advantage (Chandra C, Grabis J & Tumanyan A, 2007), increasing material flow and circulation (Lee HL, So KC & Tang CS, 2000) and a significant reduction of supply chain costs (Barrett S & Konsynski B, 1982). Lee HL, Padmanabhan V & Whang S (1997) also stated that such information sharing can reduce the bullwhip effect. Many researchers consider trust, commitment and long-term trends as important prerequisites to have effective relationships between buyers and sellers (Griffith et al., 2006; Johnston et al., 2004; Trautmann et al., 2009). The

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results of studies done by Daniel Prajogo & Jan Olhager (2011) showed that long-term relationships of supplier have significant direct and indirect impacts on supply chain performance that its indirect impact is through data and logistics integration. In this paper the impact of supply chain integration on supply chain performance has been studied by mediating variables of information sharing, partner relationship management and business benefits. First supply chain integration, information sharing, partner relationship management, business benefits and supply chain performance are explained, then based on them, hypotheses related to the impact of supply chain integration on information sharing, the impact of information sharing on partner relationship management and business benefits on supply chain performance are presented.

According to the hypotheses, conceptual model of research is presented. Afterwards, the hypotheses are tested by using the data collected from 118 members of the studied organization (supply chain). Collected data and analysis method are described in detail in the next sections. The research results are finally provided.

2- Theoretical background and literature reviews

2-1- Supply chain integration and information sharing

Supply chain integration should include both information and materials and cannot be limited to one of them. Higher levels of integration will be determined by increasing logistics communication, more coordination of companies logistics activities with customer and their suppliers and eliminating organizational obstacles among logistics activities of companies and customers and their suppliers (Stock *et al.*, 2000). Vijayarathy (2010) considered supply chain integration and its complex nature as adaptability and the use of cooperation-coordinated structures, processes, technologies, and the use of mentioned items amongst supply chain partners to create and maintain an integrated channel for accurate and timely flow of information, materials and manufactured goods. Some of the benefits that can be obtained by information sharing in the supply chain are: reducing the bullwhip effect (Lee HL *et al.*, 1997), better conflict solution and decision-making (Li S & Lin B., 2006), an increase in the coordination of physical movements (Arshinder KA & Deshmukh SG., 2008), and improving accountability and planning (Yu M-M *et al.*, 2010). The results of many studies show that sharing information between supply chain partners and inside organization has a significant impact on supply chains effectiveness (Li S & Lin B., 2006). As studies have shown supply chain integration leads to a better flow of information needed to share properly among supply chain members.

2-2- Information sharing and partner relationship management

Information sharing is a scope that vital and proprietary information runs among supply chain members (Monczka *et al.*, 1998). Information sharing between supply chain partners has been detected as the central component of effective supply chain management. Organization should create external relations to coordinate the flow of information and materials across a set of business activities which enable supply chain partners to obtain information supply chain regarding the activities and high and low levels performances (Fiala.; 2005). Daugherty *et al.* (2006) found that firms engaged in collaborative relationships achieved improved visibility, higher service level, increased flexibility, greater end-customer satisfaction, and reduced cycle times. Leo R. Vijayarathy (2010) considered the quality of the partnership as the result of trust, reliability and commitment of partners and finally showed that the quality of the partnership of supply chain partners has a positive and direct effect on supply chain performance. Any attempt to manage the flow of information or material across the supply chain is most likely met with no success without organizational effective relationships (Croomet *et al.*, 2000). Thus, it can be said that proper and timely information sharing among supply chain members causes partner to be able to manage their relationships with each other much better.

2-3- Information sharing and business benefits

Nowadays business are aware of the potential benefits which are related to their memberships in the networks of economic organizations. However, different purpose can be follow the advantages of cost reduction and market penetration as the main objectives of joining these networks (Gruber *et al.*, 2005; Warner & Witzel., 2004). That is why Sezen (2008) believed that increasing the integration level and information sharing in supply chains are necessary in order to increase sensitivity to customer needs and expressed that it would lead to the greater value presentation and an access to internal and external information in real time and competition through the rapid responses and accountability. Also Flynn BB, Huo B & Zhao X (2010) stated that information sharing is an efficient and effective key stimulus of supply chain thereby speeding up the information flow, reducing response time to customer needs, and increasing firms coordination and partnership in the risks and benefits. The information exchange is a common way to manage the supply chains that are going to improve their performances through effective use of their resources and capabilities (Ding H, Guo B & Liu Z., 2005). To achieved coordinated performance and units collaboration, companies can obtain benefits via internal and intra-agency integration and information sharing across the supply

chain(Yu M-M, Ting S-C& Chen M-C, 2010). So according to the previous researchers it can be said that accurate and timely information sharing among supply chain members has significant business benefits for chain members.

2-4-Partner relationship management and supply chain performance

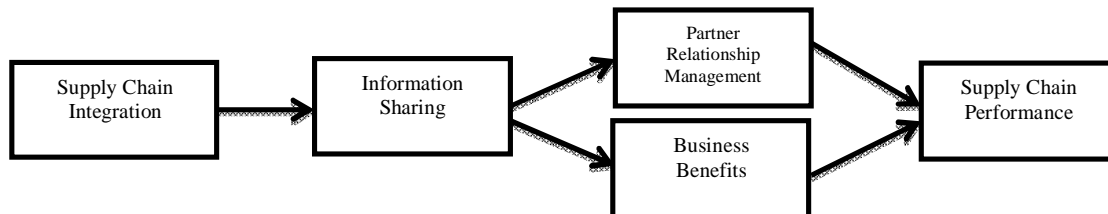
The results of many studies showed that collaborative relationships among partner would improve performance (Dwyer et al, 1987). Many researchers believe that trust and reliability in business relationships reduce partnerships risks(Das &Teng, 2001). Expressed that activities for creating collaboration and cooperation in the supply chain lead to trust and commitment of the supply chain members to each other which will ultimately lead to more significant of the members and undoubtedly improve supply chain performance. The consistency between customer and suppliers, information sharing in all levels of the supply chain, collaboration and coordination in the whole supply chain, clear goals and realistic expectations for all parts of the supply chain, integration of the existed activities in the processes of supply chain, creating collaboration and partnership based on mutual trust and confidence, equal profit or loss for both sides, response time decrease in the whole supply chain, the use of different suppliers(outsourcing), providing high-quality goods or services, providing the goods or services within the stipulated time, the flexibility of taking changes in supply and demand for goods or services, the effective use of information systems in transferring information, and knowledge and technology sharing have been mentioned among the effective factors in the success of supply chain(Hendricks, 2006).According to the material presented above it can be said that proper management of relationships between supply chain partners will improve and increase supply chain performance.

2-5-Business benefits and supply chain performance

Business benefits are the degree of operational(e.g., more efficient planning and replenishment and increased availability of material resource), financial(e.g., reduced supply chain and inventory costs), and other advantages that companies realize through improved information sharing and business system leveraging. Operational financial benefits arise from a company's ability to share information and leverage business systems, both within the company and across multiple companies. Companies that share information have increased visibility of their activities and thus are able to coordinate replenishment more effectively and streamline the flow of goods and services(Hult et al, 2004). The purpose of every supply chain is to improve and maximize the total created value and its profitability, and its success is formed by the profitability of the entire body of the supply chain. So in a supply chain, instead of transferring costs to upstream and downstream sectors, companies are encouraged to improve the flow in the whole chain considering collaborative thinking. Although coordination of actions between parts of a supply chain is difficult, long-term relationships of the chain components are always important. To maintain and strengthen this relationship, cooperation should lead to increased profitability for producers, suppliers and distributors(Kim, 2000). So we can say that the business benefits of the supply chain operations increased supply chain performance.

3-conceptual model and research hypotheses

Model1 represents the conceptual model of the research which is based on five hypotheses stated in the previous section. This model varies from previous studies regarding different aspects. IpekKocoglu et al(2011) model include three variables of supply chain integration, information sharing and supply chain performance. The results of their study indicated that supply chain integration increase supply chain performance. Also the result of a study carried out by InduShobhaChengalur-SmithPeterDuchessiJ. Ramon Gil-Garcia(2011) showed that sharing information and implementing business systems have important business benefits for supply chain members. This study may differ from their study in terms of dealing with the impact of business benefits on supply chain performance. In another study in 2011 by Mei Ying Wu et al, it was expressed that electronic processing and information sharing have positive impact on partner relationship management and supply chain performance, our study differs from that research in terms of studying the variables of supply chain integration and business benefits. Finally, this model represents the relationship between supply chain integration and supply chain performance through the mediating variables of information sharing, partner relationship management and business benefits.



Model1- conceptual model of research

The hypotheses of this study are:

- H1: Supply chain integration has a positive impact on information sharing.
 H2: Information sharing had a positive impact on partner relationship management.
 H3: Information sharing has a positive impact on business benefits.
 H4: Partner relationship management has a positive impact on supply chain performance.
 H5: Business benefits has a positive impact on supply chain performance.

4-METHODOLOGY

This research is an applied study due to the nature of subject and its results, because any organization having the ultimate goals of customer satisfaction and competitive advantage can apply the results of this research. In terms of purpose this research can be categorized as a descriptive study, because the research variables have been studied without any change. This research is also a case study due to the conduct manner, because the overall goal of this study is a detailed view of the dimensions of the studied "case" and to analyze the observation totally. All manufacturing organizations that are going to enhance supply chain performance and customer satisfaction can apply the results of this research. Statistical population has been selected using random sampling method. Among 300 members of this organization a sample of 30 members were selected and then the mean and variance of this initial sample were calculated. At last using Cochran formula a sample to the volume of 118 was studied. Both descriptive and inferential statistics have been used to analyze the collected data. Using descriptive statistics, tables have been represented and the hypotheses test has been carried out by using inferential statistics. Spss software and multiple regression are used for data analyze and Amos software is used for structural equations analysis in this research.

5-Data analyze and results

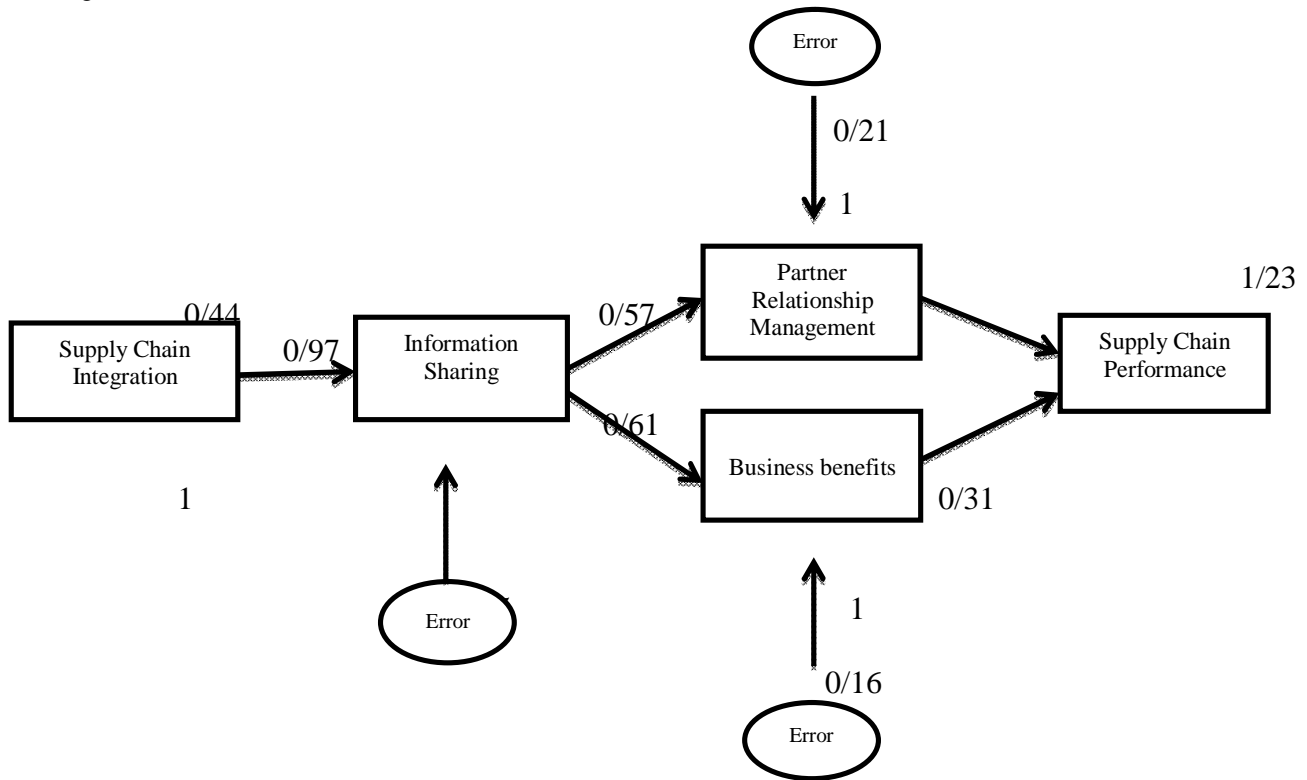
Spearman's correlation coefficient has been used to examine the relationship between research variables because a part the supply chain variables, the rest of variables have abnormal distribution. If the two variables significant level(significant variables) is less than 0/05, it is concluded that there is a significant relationship between variables statistically. If the correlation coefficient rate is between zero and one, there is a positive relationship between the two variables, i.e. increasing or decreasing of one variable will result in increasing or decreasing of another variable. As the following table shows the correlation coefficient between the two variables of supply chain integration and information sharing is 0/795 and the significant level is 0/000, which shows that supply chain integration has a positive impact on information sharing. In other words, by increasing the level of integration in supply chain, information sharing rate will increase and vice versa. So the first hypothesis is accepted. The correlation coefficient between the variables of information sharing and partner relationship management is 0/637 and the significant level is 0/000, we conclude that information sharing has a positive impact on partner relationship management. So the second hypothesis is accepted. The correlation coefficient between the variables of information sharing and business benefits is 0/645 and the significant level is 0/000, so we conclude that information sharing have a positive impact on business benefits in the supply chain. In other words, by increasing information sharing in the supply chain, business benefits will also increase and vice versa. So, the third hypothesis is accepted, too. The correlation coefficient between the variables of partner relationship management and supply chain performance is 0/936 and the significant level is 0/000, one can conclude that partner relationship management has a positive impact on supply chain performance. In other words, by increasing the amount of partner relationship management, the supply chain performance will improve and vice versa. Therefore, the fourth hypothesis is accepted. Also based on the correlation coefficient of 0/795 between the variables of business benefits and supply chain performance and the significant level of 0/000 we conclude that business benefits has a positive impact on supply chain performance. In other words, by increasing business benefits in the supply chain, supply chain performance will improve and vice versa. So the fifth hypothesis is accepted.

Table2- Spearman's correlation coefficient results

| Variables | Information sharing | Supply chain performance |
|---------------------------------|---------------------|--------------------------|
| Supply chain integration | 0/795 (0/000) | |
| Partner relationship management | 0/637 (0/000) | |
| Business benefits | 0/645 (0/000) | |
| | | 0/936 (0/000) |
| Partner relationship management | | 0/795 (0/000) |
| Business benefits | | 0/795 (0/000) |

() :Significant variables

Our general model is as follows:



In this model the relationship between supply chain integration, information sharing, partner relationship management, business benefits and supply chain performance has been studied simultaneously. In this model, information sharing, partner relationship management and business benefits are dependent and independent variables. Therefore, we are unable to fit this model using spss software. Amose software has been used to fit this model. Regression coefficients between variables and the dependent variables of general model were summarized in the following table:

Table3-Regression coefficients of general model

| Independent variable | | Dependent variable | Regression coefficient |
|---------------------------------|------|---------------------------------|------------------------|
| Supply chain integration | ---> | Information sharing | 0/974 |
| Information sharing | ---> | Partner relationship management | 0/567 |
| Information sharing | ---> | Business benefits | 0/610 |
| Partner relationship management | ---> | Supply chain performance | 1/228 |
| Business benefits | ---> | Supply chain performance | 0/315 |

For our general model, the statistic rate of chi-square is $\chi^2=9/12$ and the degrees of freedom is 5.

We can use the possible values of NFI, RFI, IFI and CFI to show the fitness or the appropriateness of the model. The NFI is an index that compares the independent model, i.e. the model in which there is no relationship between variables, with our proposed model. RFI is relative fit index that evaluates the model fitness. IFI is incremental fit index and CFI is comparative fit index. If this values are closer to number 1, the model will be more appropriate, if the RMSEA value which represents the mean square root of the approximate error squares, is less than 0/05, it is concluded that the model is very suitable. If its value is between 0/05 to 0/08, the model is fitted properly and if it is more than 0/1, we can conclude that the fitted model is poor. As shown in table 4, we see values indicating that the model is quite appropriate.

Table4- Fit standards of general model

| NFI | RFI | IFI | CFI | RMSEA |
|-------|-------|-------|-------|-------|
| 0/914 | 0/828 | 0/920 | 0/919 | 0/056 |

6-DISCUSSION AND CONCLUSION

Today the inevitable and rapid changes in the organizations competitive approaches due to globalization have caused many progresses in economic, social and industrial fields as well as great changes in the fields of information and communication. Speed and acceleration of this changes have caused supply chain activities to exceed the organizational boundaries which have separated the organization from its surrounding environment to some extent. It also directs organizations towards integration, collaboration and coordination to satisfy their needs and gain benefits. Accordingly, the organizations have found out that supplying the highest value to their customers does not necessary limit to inter-organizational activities. They should pay much attention to the whole activities of the supply chain. The cooperation and collaboration of the supply chain members are considered to be a key factor in forming the integrated supply chains. The integrated supply chains can enable various organizations to transfer much value to their customers through increasing collaborative attempts among supply chain members.

The results of this study show that by increasing integration in the supply chain, the organizations cooperation and collaboration with suppliers and customers and their awareness will also increase. This often leads to greater information sharing with suppliers and customers and it also causes rapid information flow in the supply chain sectors. The process of sharing information among supply chain members enables the partners of the chain to manage their relationships better by enhancing trust and commitment in their relationships. On the other hand, shared information among members of the supply chain increases the efficiency and reduces the costs of stock maintaining and coordination. All mentioned factors have ultimately a positive impact on supply chain performance and enhance the performance of final products, increase customer satisfaction, speed up the delivering of final products to customers and the supply chain flexibility, and also production costs and supply chain waste greatly decrease.

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REFERENCES

- Arshinder KA, Deshmukh SG.(2008). Supply chain coordination: Perspectives, empirical studies and research directions. *International Journal of Production Economics*;115:316-35.
- Barrett S. Konsynski B. (1982). Inter-Organization Information Sharing Systems. *MIS Quarterly*; 6: 93-105.
- Barratt, M.(2004). Understanding the meaning of collaboration in the supply chain. *Supply Chain Management: An International Journal* 9 (1), 30–42.
- Bowersox D, Closs D & Stank T. (2000). Ten mega-trends that will revolutionize supply chain logistics. *Journal of Business Logistics* 21(2): 1–16.
- Cannon, J.P., Perreault, W.D. (1999). Buyer–seller relationships in business markets. *Journal of Marketing Research* 36 (4), 439–460.
- Chandra C, Grabis J, Tumanyan A. (2007). Problem taxonomy: a step towards effective information sharing in supply chain management. *International Journal of Production Research*; 45(11):2507-44.
- Christina W.Y.Wong, CheeYewWong, SakunBoon-itt. (2013). The combined effects of internal and external supply chain integration on product innovation. . *International Journal of Production Economics*.
- Croom, S., Romano, P., Giannakis, M. (2000). Supply chain management: An analytical framework for critical literature review. *European Journal of Purchasing and Supply Management* 6 (1), 67–83.
- Daniel Prajogo, Jan Olhager. (2012). Supply chain integration and performance: The effects of long-term relationships, information technology and sharing, and logistics integration. *International Journal of Production Economics*; 135: 514–522.
- Das, T. K., &Teng, B. (2001). Trust, control, and risk in strategic alliances: An integrated framework. *Organization Studies*, 22, 251–283.
- Daugherty, P.J., Richey, R.G., Roath, A.S., Min, S., Chen, H., Arndt, A.D., Genchev, S.E.(2006). Is collaboration paying off for firms? *Business Horizons* 49, 61–70.

- Ding H, Guo B, Liu Z. (2005). Information sharing and profit allotment based on supply chain cooperation. *International Journal of Production Economics* forthcoming.
- Dwyer, F. R., Schurr, P. H., & Oh, S. (1987).Developing buyer-seller relationships. *Journal of Marketing*, 51(1), 11-27.
- Doney, P.M., Cannon, J.P. (1997).An examination of the nature of trust in buyer–seller relationships. *Journal of Marketing* 61 (2), 35–61.
- Feldmann M,Müller S. (2003). An incentive scheme for true information providing in supply chains. *Omega*; 31(2):63–73.
- Fiala, P.(2005). Information sharing in supply chains. *Omega* 33 (5), 419–423.
- Flynn BB, Huo B, Zhao X.(2010). The impact of supply chain integration on performance: a contingency and configuration approach. *Journal of Operations Management*;28:58–71.
- Frohlich, M.T., Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of Operations Management* 19 (2), 185–200.
- Ganesan, S. (1994).Determinants of long-term orientation in buyer–seller relationships. *Journal of Marketing* 58 (2), 1–19.
- Gilbert N. Nyaga a, Judith M. Whipple, Daniel F. Lynch c. (2010). Examining supply chain relationships: Do buyer and supplier perspectives on collaborative relationships differ?. *Journal of Operations Management*; 28: 101-114.
- Griffith, D.A., Harvey, M.G., Lusch, R.F. (2006). Social exchange in supply chain relationships: the resulting benefits of procedural and distributive justice. *Journal of Operations Management* 24 (2), 85–98.
- Gruber, M., Koeszegi, S., &Nöster, M. (2005). Initiated networks—a strategic alternative for SMEs. The 21st EGOS-colloquium, 30th of June–2nd of July, Berlin.
- Hendricks, Kevin B .(2006). The impact of enterprise systems on corporate performance: A study of ERP, and CRM system implementation”. *Journal of operations Management* ,xxx, pp.142-180.
- Heide, J.B., John, G. (1990). Alliances in industrial purchasing: the determinants of joint action in buyer–supplier relationships. *Journal of Marketing Research* 27 (1), 24–36.
- Huang GQ, Lau JSK, Mak KL. (2003). The Impacts Of Sharing Production Information On Supply Chain Dynamics. *International Journal of Production Research*; 41(7):1483-517.
- Hult G.T., Ketchen D.J, Slater S.F. (2004). Information processing, knowledge development, and strategic supply chain performance, *Academy of Management Journal* 47 (2.), pp. 243–253.
- InduShobhaChengalur-Smith, Peter Duchessi, J. Ramon Gil-Garcia. (2012). Information sharing and business systems leveraging in supply chains: An empirical investigation of one web-based application. *Journal of Information & management*; 49: 58–67.
- IpekKocoglu,SalihZekiImamoglu, HuseyinInce, HalitKeskin. (2011). The effect of supply chain integration on information sharing: Enhancing the supply chain performance. *International Strategic Management Conference*.
- Johnston, D.A., McCutcheon, D.M., Stuart, F.I., Kerwood, H. (2004). Effects of suppliertrust on performance of cooperative supplier relationships. *Journal of OperationsManagement*, pp. 23.
- Kalwani, M.U., Narayandas, N. (1995). Long-term manufacturer-supplier relationships: do they pay off for supplier firms? *Journal of Marketing* 59 (1), 1–16.
- Kim, B. (2000). Coordinating an Innovation in Supply Chain Management. *European Journal Of Operation Research*, 123, pp. 568-584.
- Lambert DM. (2008). *Supply Chain Management Processes, Partnerships, Performance*. 3rd Edition.
- Lee HL, Padmanabhan V, Whang S. (1997). Information distortion in a supply chain: The bullwhip effect. *Management Science*; 43(4):546–58.

- Lee, H.L., Padmenabhan, V. and Whang, S. (1997). The Bullwhip Effect in Supply chains. Sloan Management review, 38(3), pp.93-102.
- Lee HL, So KC, Tang CS. (2000). The value of information sharing in a two-level supply chain. Management Science; 46(5): 626–43.
- Li J, Sikora R, Shaw MJ, Woo TG. (2006). A strategic analysis of inter organizational information sharing. Decision Support Systems; 42:251-66.
- Li S, Lin B. (2006). Accessing information sharing and information quality in supply chain management. Decision Support Systems; 42:1641-56.
- Lin H-F. (2007). Knowledge sharing and firm innovation capability: an empirical study. International Journal of Manpower, 28(3/4): 315 – 32.
- Lummus, R.R., Krumwiede, D., Vokurka, R.J.(2001). The relationship of logistics to supply chain management: developing a common industry definition. Industrial Management & Data Systems 101 (8), 426–432.
- Mabert, V.A., Venkataramanan, M.A. (1998). Special research focus on supply chain linkages: Challenges for design and management in 21st century. Decision Sciences 29(3), 537-552.
- Madlberger M. (2009). What Drives Firms to Engage in Interorganizational Information Sharing In Supply Chain Management. International Journal of e-Collaboration; 5(2):18-42.
- Marcos André Mendes Primo.(2010). Supply chain integration mechanisms for alleviating supply problems in manufacturing firms. Journal of operation management research; 3:43–59.
- Mei-Ying Wu, Han-Ping Chou, Ya-Yueh Shih, Jui-Hsuan Wang. (2011). Supply chain performance improvement through partner relationship management in the high tech industry. International Journal of Management Science, 6(3): 210-218.
- Monczka RM., Petersen KJ.,Handfield RB., Ragatz GL. (1998). Success factors in strategic supplier alliances: the buying company perspective", Decision Sciences 29 (3) 5553-5577.
- Narasimhan,R.,Kim,S.W. (2002). Effect of supply chain integration on the relation- ship between diversification and performance :evidence from Japanese and Korean firms. JournalofOperationsManagement20,303–323.
- Nooteboom, B., Noorderhaven, N. G., & Berger, H. (1997).Effects of trust and governanceon relational risk. The Academy of Management Journal, 40, 308–338.
- Olhager, J., Selldin, E.(2004). Supply chain management survey of Swedish manufacturing firms. International Journal of Production Economics 89 (3), 353–361.
- Pamela Danese, Pietro Romano, Marco Formentini. (2013). The impact of supply chain integration on responsiveness: The moderating effect of using an international supplier network. Transportation Research Part E 49 , 125–140.
- Ring, P., & Van de Ven, A. (1992). Structuring cooperative relationships between organization. Strategic Management Journal, 13, 483–498.
- Rokkan, A.I., Heidi, J.B., Wathne, K.H. (2003). Specific investments in marketing relationships: expropriation and bonding effects. Journal of Marketing Research40 (2), 210–224.
- Stank,T.P.,Scott,B.K.,Daugherty,P.J. (2001). Supply chain collaboration and logistics service performance.JournalofBusinessLogistics22(1),29–48.
- Sezen, B.(2008). Relative effects of design, integration and information sharing on supply chain performance. Supply Chain Management: An International Journal 13 (3), 233–240.
- Stock, G.N., Greis, N.P., Kasarda, J.D. (2000). Enterprise logistics and supply chain structure: the role of fit. Journal of Operations Management 18 (5), 531–547.
- Trautmann, G., Turkulainen, V., Hartmann, E., Bals, L. (2009). Integration in the globalsourcing organization: an information processing perspective. Journal of SupplyChain Management: A Global Review of Purchasing & Supply 45 (2), 57–74.

- Van der Vaart, T., van Donk, D.P. (2004). Buyer focus: evaluation of a new concept for supply chain integration. *International Journal of Production Economics* 92 (1), 21–30.
- Van der Vaart, T., van Donk, D.P.(2008). A critical review of survey-based research in supply chain integration. *International Journal of Production Economics* 111 (1), 42–55.
- Van Hoek, R.I., Harrison, A., Christopher, M. (2001). Measuring agile capabilities in the supply chain. *International Journal of Operations & Production Management* 21 (1/2), 126–148.
- Vijayasarathy LR. (2010). Supply integration: An investigation of its multi dimensionality and relational antecedents. *International Journal of Production Economics*; 124: 489-505.
- Warner, M., &Witzel, M. (2004).Managing in virtual organizations. London: Thomson Learning.
- Wong, C.Y., Boon-itt, S. (2008). The influence of institutional norms and environ- mental uncertainty on supply chain integration in the Thai automotive industry. *International Journal of Production Economics* 115 (2), 400–410.
- Yuanqiong He, KinKeungLai. (2012). Supply chain integration and service oriented transformation: Evidence from Chinese equipment manufacturers. *International Journal of Production Economics*; 791–799.
- Yu M-M, Ting S-C, Chen M-C. (2010). Evaluating the cross-efficiency of information sharing in supply chains . *Expert Systems with Applications*; 37: 2891-7.
- Zhou H, Benton WC.(2007). Supply Chain Practice and Information Sharing. *Journal of Operations Managements*; 25:1348-65.
- Zhu W, Gavirneni S, Kapuscinski R. (2010). Periodic flexibility, information sharing, and supply chain performance, *IIE Transactions*; 42(3):173- 87.