EFFECT OF SUPPLY CHAIN INTEGRATION STRATEGIES ON PERFORMANCE OF PORK PROCESSING INDUSTRY IN RWANDA

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ABSTRACT: *Supply chain integration (SCI) is a useful approach to improve various measures of firm performance. The aim of this study is to evaluate the impact of supply chain integration strategies on performance of pork processing industry in Rwanda. The study employed a quantitative research design in order to address to the research objective. The target population was the 52 employees of German butchery in Kigali. Due to the small size of the population, there was no need of sampling. Therefore all the 52 employees were obtained through census method and were recruited to the study. Questionnaires were used to collect information regarding internal integration, supplier integration, customer integration and performance of the firms. Questionnaires were distributed through drop and pick method to avoid inconveniencing the respondents during working hours. Data collected was edited and analysed using SPSS. The results indicated that there was a positive and significant correlation between internal integration, supplier integration, customer integration and performance of the firm. The study was about the impact of customer integration, supplier integration and internal integration on pork industry. The study recommended that the industry managers should ensure that the extents of integration of the three variables are enhanced. The study further recommended that a study that will assess the challenges affecting supply chain integration in the pork industry should be conducted in the future. Future study that will assess the barriers of implementation of supply chain integration strategies in pork industry was also recommended.*

KEYWORDS: Supply Chain Integration, Pork Processing, Strategies, Industry, Rwanda

INTRODUCTION

Background of Study

Supply-chain integration has become a prominent issue during the last decade. In recent years, there has been a great deal of empirical evidence to show that successful supply-chain integration can improve a firm's performance and competitive advantage (Wiengarten et al. 2010). Supply chain management (SCM) seeks to enhance competitive performance by closely integrating the internal cross-functions within a company and effectively linking them with the external operations of suppliers, customers, and other channel members to be successful (Kim, 2006). This means that a firm that is pursuing SCM practices needs to pay attention to supply chain integration (SCI) and its implementation (Hussein & Nassar, 2010).

Although pork is not consumed by certain populations or in certain regions, it is one of the preferred meats in the world. For instance, China is the largest world producer about 51.4% and total consumption of 52.0% while European Union produces 20.1% with total consumption of 18.4%. United States is the third largest producer in the world with 9.3% and total consumption of 7.7%. World total production has reached 110 million tons (USDA, Foreign

Agricultural services, 2014). Pork consumption accounts for 40% of daily meat protein intake in United States (USDA, Foreign Agricultural services, 2014).

In Kenya, Pork accounts for about 9% of the red meat consumed, in Uganda Pork Consumption accounts for about 12% of red meat consumed. (FAOSTAT Data, 2012). In Rwanda, Pork consumption is fourth and accounts for 10% of red meat consumed (RAB, Animal Resource extension, 2012). Pork Consumption in East African region is way below developed markets.

Rwanda's economy is highly dependent on agriculture which includes highly growing livestock sector. Pork processing firms in Rwanda are on small scale and therefore, creating a competitive advantage will be the main objective in pork industry performance within the region. Whereas population have increased, from an annual of 586,621 in 2008, to 989,316 heads in 2012 (NISR, 2012). Pork produced in Rwanda is about 8,000 tons per year which accounts for about 10% of the total meat consumed (RAB, Animal Resource extension, (NISR, 2012)). 4% of pork produced yearly is exported to DRC and there remains large market opportunity for export to DRC market (MINAGR, 2014). The main challenges that have majorly constraints within the pig industry include lack of modern abattoir for pigs, a limited number of pork processors and pig breeders, and weak pig farmer's organization in cooperatives. Pork is the fastest growing sector in animal meat with an increase of 40% between 2011 and 2012 (RAB/ Animal resources, 2012). Thus the focus on pork industry in Rwanda is key in order to create sustainable industry that will be competitive in the region. Pigs multiply in a faster rate than any other domesticated animals. The cost of keeping pigs is lower since pigs can eat anything as long as it is fresh. Whereas, the investment cost vary depending on the income levels and the production process. Pigs can give birth 2 times a year and can give between 6-12 piglets per breeding. This is very profitable looking at the number of piglets that can be reared per year. Pigs are normally sold per kilo gram and thus the amount put in is eventually the output that can be attained.

The agricultural sector remains the economic backbone of the country. It employs about 87% of the working population and contributes about 32% of GDP and generates about 80% of the total export revenues (Ministry of Finance). The Government of Rwanda has recently revised the agricultural policy and strategies, in order to better achieve the objectives, as formulated in the Vision2020 outlined in the EDPRS. The ultimate objective of the agricultural policy is to contribute to the national economic growth, to achieve improved food security and the nutritional status of the population and increase the incomes of the rural households (Ministry of Agriculture and Animal resources, 2012).

Developing countries enjoy comparative advantage in the abundance of raw materials and inexpensive labour, it is important to note that all these factors are easily imitated and therefore impossible to sustain in a competitive environment, especially as technological advances. Reliance on natural resources alone cannot create competitiveness. Orienting production, marketing and distribution towards the consumer remains the only means by which firms can become competitive.

One of the most critical issues that are expected to increase performance in pork processing industry in Rwanda is orienting production and marketing to the consumer, both internally and externally. Consumers demand a diverse range of high quality safe products. Product diversification through food processing, improved quality and safety supported by market studies is one of the ways through to create and expand market opportunities.

Statement of problem

Despite the fact that pork is a cheap source of proteins, pork processing industry is yet to be fully exploited in Rwanda and there remain many opportunities for pork processing in Rwanda. According to RAB, Animal Resources Extension (2012), currently 10% of pork is consumed in Rwanda while in developed markets (USA) consumption rate is 40% (USDA, Foreign Agricultural services, April 2014). Strategies related to pork processing from source to the consumer need to be developed in order to increase firm performance in pork processing industry. Supply chain integration is one of the key elements in improving firm performance. It is important for the stake holders to understand the impact of supply chain integration on firm performance in order to understand level of integration that will create firm competitiveness.

Objectives of the study

General objective

The aim of the research was to determine the effect of supply chain integration strategies on performance of pork industry in Rwanda.

Specific objectives

The study sought to address the following specific objectives:

1. To establish the effect of customer integration strategies on performance of Rwanda pork industry.

2. To determine the effect of supplier integration strategies on performance of Rwanda pork industry.

3. To establish the effect of internal integration strategies on performance of Rwandan pork industry.

RESEARCH METHODOLOGY

Introduction

The chapter presents the research methods that were employed in this study. Such include information gathering and data presentation. The research design, sampling procedure, data collection methods, validity and reliability and data analysis procedures are also highlighted.

Research design

The study was a quantitative descriptive case study utilizing primary data collection. Orodho (2003), describe a descriptive case study as a method of collecting information by administering a questionnaire to a sample of individuals. Descriptive research determines and reports the way things are and helps researcher to describe a phenomenon in terms of attitude, values and characteristics (Mugenda and Mugenda, 2003). The selected samples for this study was administered with questionnaires to facilitate data collection

Target Population

Mugenda and Mugenda (2003) define a population as a complete set of individuals, with common characteristics. It is the total collection of elements about which the study wishes to make some inferences (Cooper& Schindler, 2008). A total of 52 employees of German butchery formed the target population of this study

Study participants

Sample size refers to the number of units or people that are chosen from which the researcher wish to gather information or data (Evans et al., 2000). The study population for this study was small in size (52); therefore the entire population was treated as the 'sample' in order to achieve accuracy and reliability of data.

Sampling Technique

Census method of sampling was used because the population is small and the data can be collected from the entire population. According to Pratt et al., (1995) Census method is a type of purposive sampling technique that involves examining the entire population that have a particular set of characteristics involves collecting data from the entire population. The method has an advantage over sample in that the data obtained is more reliable and accurate. Total population sampling has a wide coverage of the population of interest reducing risk of missing potential insights from members that are not included (Pratt et al., 1995)

Data collection instrument

Primary data provided by the respondents was the focus of this study. Nachmias and Nachmias (2008) argues that questionnaires are more efficient in that, they require less time to prepare; they are less expensive and permits collection of data from a wide population.   In this regard, this study used structured questionnaires to correct data related to supply chain integration strategies and performance.

Data collection procedure

Primary data was collected using close- ended questionnaires. The researcher administers the questionnaires himself during working hours to ensure that all respondents are available. The respondents were left with the questionnaires to avoid inconveniencing the employees during working hours.

RELIABILITY AND VALIDITY FOR THE RESEARCH INSTRUMENT

Reliability

Golafshani (2003) defines reliability as the extent to which results of a study are consistent over time and there is an accurate representation of the total population under study. According to Toke et al., (2012), the aim of reliability analysis is to find the extent to which a measurement procedure produced the same result if the process is repeated over and over again under the same conditions. In this study Cronbach alpha coefficient generated by the use ofSPSSwas used to ascertain reliability of the questionnaire. The value generated was compared with the

threshold of 0.7 to confirm reliability. Cronbach alpha value above 0.7 indicates reliability of the measurement procedure as recorded by Toke et al., (2012).

Validity

According to Mugenda and Mugenda (1999), validity of research tool has three components. The first is construct validity which deals with the consistency of the questions with the responses intended by the researcher. This validity was assured by structuring the questionnaire according to the specific objectives. The second form of validity is content validity, i.e. the ability of an instrument to gather the data required for the analytical techniques suggested (Peil 1996). This was assured by using close ended questions which avoided irrelevant answers. To ensure internal validity of the questionnaire, the researcher gave the draft questionnaire to the supervisors for review and recommendations made were included in the final questionnaire.

Data analysis and Presentation

Before processing the responses, the completed questionnaires were edited for completeness and consistency. Data editing was done in order to determine inaccurate, incomplete, or unreasonable data and then improve the quality through correction of detected errors. After data cleaning, the data was coded and analyzed using Statistical Package for Social Sciences (SPSS). Data was analyzed using descriptive statistics such as frequency, and inferential statistics specifically Pearson correlation analysis to determine the relationship between the variables. The results of data were presented using frequency distribution tables.

Ethical considerations

The researcher proceeded with data collection after obtaining authorizations from Jomo Kenyatta University and the pork processing firm from which data collected. The researcher's ensured that participants completely understand the purpose and methods to be used in the study. The participants were made to understand that they have the right to withdraw from the study at any time. A consent form was availed to the participants to sign whether to participate in the study or not. Aassurance that all the information provided by the respondents'wastreated with utmost confidentially wasalso be ensured.

RESEARCH FINDINGS AND DISCUSSION

Introduction

This chapter presents analysis of the data on the study conducted to determine the impact of supply chain integration on performance of pork industry in Rwanda. The study target population comprised of all the 52 members of the pork processing firm. Census method was used to obtain the study respondents. Close ended questionnaires were administered to a sample of 52 respondents out of which 48 were correctly filled and returned. The response rate of this study was 92.3% which was considered excellent. According to Baruch, (1999) a response rate of 70% and above is excellent and can be used to draw conclusions for a study.

Demographic characteristics of the participants

Table 4.2.1 Participants Gender distribution

	Frequency	Percent (%)
Gender		
Male	32	67
Female	16	33
Total	48	100

Gender Distribution among the respondent

The study sought to determine the gender and position held by the respondents. Table 4.1 indicates that 67% of the respondents were male while 33% were female. This indicates that both male and female participate in the projects. Majority of the respondents 75% held a non-managerial position while 25% held a managerial position

Position held by respondents

The study sought to determine the job position held by the respondents. Table 4.2.2 indicates that the study sample included samples from managerial positions as well as from non-managerial positions. Majority of the respondents however held non-managerial positions (75%) while 25% held a managerial position

Table 4.2.2 Position held by respondents

Position Held	Frequency	Percentage (%)
Managerial	12	25
Non-managerial	36	75
Total	48	100

Distribution of responses requiring "lesser" or "greater extent" as the response

Majority of the respondents 67% felt that information exchange with major supplier through information networks was done to a greater extent, while 33% said it was done to a lesser extent. Most of the respondents 60% stated that suppliers shared their production capacity with the pork industry to a greater extent while 40% of them indicated that such sharing was being done to a lesser extent. Likewise a larger percentage of the respondents 63% indicated that supplier shared their production schedule to a greater extent while 37% indicated to lesser extent. The industry shared their production plan with the supplier to a greater extent as indicated by 79% of the study participants. 21% of them however felt that the extent of sharing was to a lesser extent. Majority 77% stated that level of strategic partnership with the industry supplier was done to a lesser extent while 23% felt that the strategic partnership was done to a greater extent. The level of linkage with industry's customer through information networks was considered by 52% to be at a greater extent while 48% felt that it was done to a lesser extent. Computerization for ease of customer ordering was being done at greater extent as indicated by79% of the respondents. Minority of the respondents 21% however felt the extent was lesser. Communication with major customers was done at greater extent as indicated by

62 % of the respondents. A fair percentage however indicated that communication was being done to a lesser extent.

Quick ordering systems were being established with major customers to a greater extent as indicted by 65% of the respondents. Available inventory is shared with major customers at a greater extent as pointed out by 54% of the respondents. 46% felt that the extent of the sharing of the available inventory was done to a lesser extent. Market information from the major customer was shared to a greater extent as indicated by 58% of the respondents. Most of the respondents 58% indicated that the extent to which the industry ensured that data integration among internal functions was great while 42% felt it was lesser.

Table 4.3 Distribution of responses requiring "lesser" or "greater extent" as the response

Statement	Less extent (%)	Great extent (%)
The level of information exchange with your major supplier through information networks	33	67
The level at which your supplier share their production capacity with you	40	60
The level at which your supplier share their production schedule with your industry	37	63
Sharing your production plan with your supplier	21	79
The level of strategic partnership with your supplier	77	23
The level of linkage with your customer through information networks	48	52
The level of computerization for ease of customer ordering	21	79
The level of communication with major customers	38	62
The establishment of quick ordering systems with your major customers	35	65
The level of sharing of available inventory with the major customers	46	54
The level of sharing of market information from the major customer	42	58
Ensuring data integration among internal functions	42	58
Enterprise application integration among internal functions	15	85
The level of utilization of periodic interdepartmental meetings among internal functions	17	83
The use of cross functional teams in process improvement	31	69
Integrative inventory management	67	33

The extent to which the industry ensured enterprise application integration among internal functions was greater according to 85% of the respondents. Periodic interdepartmental meetings among internal functions was being level of utilized to a greater extent as indicated by 83% of the respondents. 69% of the respondents felt that the use of cross functional teams in process improvement was being done to a greater extent. Likewise 67% of the respondents indicated that the industry ensured and integrative inventory management to a greater extent.

Responses requiring the respondent to agree or disagree

Majority of the respondents 46% of the respondents agreed that the pork firm could quickly modify products to meet major customer's requirement, 25% strongly agreed while 29% disagreed with the statement. Regarding introducing new product in the market, 50 % of the respondents strongly agreed that the pork industry could quickly introduce new product in the market. 23% just agreed while 27 % of the respondents disagreed with the statement. While 44 % of the respondents just agreed with the statement that the pork industry could quickly respond to changes in market demand, 29% strongly agreed and 27% disagreed. A fair percentage 33% strongly agreed with a statement that the pork firm has an outstanding on-time delivery record to its customer, 31% just agreed while 36% disagreed. Most of the respondents 40% strongly agreed with the statement that the firm provided a high level of customer service to its major customer, 42% just agree while 18% disagreed with the statement

Table 4.3 Distribution of responses requiring the respondent to agree or disagree

Statements	Strongly Agree (%)	Agree (%)	Disagree (%)
Our firm can quickly modify products to meet our major customer's requirement	25	46	29
Our firm can quickly introduce new product in the market	50	23	27
Our firm can quickly respond to changes in market demand	29	44	27
Our firm has an outstanding on-time delivery record tour customer	33	31	36
Our firm provides a high level of customer service to our major customer	40	42	18

Correlation Analysis

The correlation table revealed that there was a positive significant relationship between customer integration, supplier integration, internal integration and firm performance (.808[**], p<0.001) (.784[**]p<0.001), (.822[**,] p<0.001). This implies that the three independent variables have the potential to influence the performance of pork firm in Rwanda.

Table 4.5Correlation Analysis between the independent and dependent variables

		Firm performance	Customer integration	Supplier integration	Internal integration
Firm performance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	48			
Customer integration	Pearson Correlation	.808**	1		
	Sig. (2-tailed)	.000			
	N	48	48		
Supplier integration	Pearson Correlation	.784**	.331*	1	
	Sig. (2-tailed)	.000	.021		
	N	48	48	48	
Internal integration	Pearson Correlation	.822**	.433**	.355*	1
	Sig. (2-tailed)	.000	.002	.013	
	N	48	48	48	48

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Customer integration and performance of pork processing industry

The results indicated that customer integration and performance of pork industry are positively related (.808**, p<.01). This means that improving the extent to which the industry ensures customer integration has a great potential to improve the industry's performance. Elements of customer integration dealt with in this study such as computerization for ease of customer ordering and establishment of quick ordering system should be ensured for improved performance.

Supplier integration and performance of pork processing industry

The results indicated that supplier integration and performance of pork industry are positively and significantly related (.784**, p<.01). This is an indication that enhancing supplier integration within the pork industry will lead to increased performance. Likewise ignoring supplier integration can affect the productivity of the industry

Internal integration and performance of pork processing industry

Table 4.5 indicate that internal integration and performance of pork industry are positively and significantly related (.822**, p<.01). This means that enhancing internal integration within the pork industry has the potential to increase performance of the pork industry.

Discussion of the findings

This study contributes to the research stream on supply chain integration by investigating the relationships between information integration, customer integration, supplier and performance. It demonstrates that the integration of material flow needs to be underpinned by information integration. In this way, the supply chain (material flows from suppliers) will be neatly guided by the demand chain (information flows from customers). This study demonstrates that supply

chain relationships help foster collaborative behaviors which are translated into various forms, including information integration.

According to first objective i.e. to determine the effect of customer integration strategies on performance of Rwanda pork industry, there is a positive and direct relationship between customer integration and performance of Rwanda pork industry. These findings are aligning with findings recorded by Frohlich and Westbrook (2001).

According to second objective i.e. to determine the impact of supplier integration strategies on performance of Rwanda pork industry, there is a positive and direct relationship between supplier integration and performance of Rwanda pork industry. These findings are in agreement with findings of the study by Sheu et al (2006)

Iinformation integration strategies was found to positively and significantly associated with performance of Rwandan pork industry. The ffindings of this study are in agreement with findings by Flynn et al (2010

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

The study focused on the impact of supply chain integration strategies on the performance of pork industry in Rwanda. The study was carried out to find out whether performance of pork industry can be attributed to customer integration, supplier integration and internal integration. This chapter is divided into three sections, summary of the findings, conclusions and recommendations including areas for further study.

Summary of the findings

To achieve the objectives, the study collected primary data from a total of 52 individuals out of whom 48 questionnaires were filed and returned. Census method of obtaining the study participants was used because the target population was too small. Data collected was cleaned coded and analyzed using SPSS to generate meaningful information. The study revealed that that 67% of the respondents were male while 33% were female indicating that both male and female participated in the pork industry. Majority of the respondents 75% held a non-managerial position while 25% held a managerial position.

The results indicated that customer integration and performance of pork industrywere positively related (.808**, $p<.01$). The level of linkage with industry's customer through information networks was considered to be at a greater extent by 52% of the respondents. Computerization of services for ease of customer ordering was being done at greater extent as indicated by79% of the respondents. Communication with major customers was done at greater extent as indicated by 62 % of the respondents. Quick ordering systems were being established with major customers to a greater extent as indicted by 65% of the respondents. Available inventory was being shared with major customers at a greater extent as pointed out by 54% of the respondents. Market information from the major customer was shared to a greater extent as indicated by 58% of the respondents. Most of the respondents 58% indicated that the extent to which the industry ensured that data integration among internal functions was great.

The results indicated that supplier integration and performance of pork industry are positively and significantly related (.784**, p<.01). Information exchange with major supplier through information networks was done to a greater extent as indicated by 67% of the respondents. Most of the respondents 60% stated that suppliers shared their production capacity with the pork industry to a greater extent while 40% of them indicated that such sharing was being done to a lesser extent. A large percentage of the respondents 63% indicated that supplier shared their production schedule to a greater extent. The industry shared their production plan with the supplier to a greater extent as indicated by 79% of the study participants. Majority 77% stated that level of strategic partnership with the industry supplier was done to a lesser extent.

Internal integration and performance of pork industrywere positively and significantly related (.822**, p<.01). The extent to which the industry ensured enterprise application integration among internal functions was greater according to 85% of the respondents. Periodic interdepartmental meetings among internal functions were being utilized to a greater extent as indicated by 83% of the respondents. 69% of the respondents felt that the use of cross functional teams in process improvement was being done to a greater extent. Likewise 67% of the respondents indicated that the industry ensured and integrative inventory management to a greater extent.

Conclusion

It was established from the study that there was a significant positive relationship between customer integration and performance of pork industry. Improving the extent to which the industry ensures customer integration has a great potential to improve the industry's performance. The level of linkage with industry's customer through information networks was to a greater extent. Computerization of services for ease of customer ordering and communication with major customers was being done at greater extent. The industry had quick ordering systems which were being established with major customers to a greater extent. Available inventory within the industry was being shared with major customers to a greater extent. To a greater extent the industry ensured that data integration among internal functions was great.

Supplier integration and performance of pork industry are positively and significantly related. Information exchange with major supplier through information networks is done to a greater extent in the industry. Suppliers shared their production capacity with the pork industry to a greater extent. Supplier production schedule was being shared to a greater extent. The industry shared their production plan with the supplier to a greater extent. Strategic partnership with the industry supplier was done to a lesser extent.

Internal integration and performance of pork industry were positively and significantly related. The extent to which the industry ensured enterprise application integration among internal functions was greater. Periodic interdepartmental meetings among internal functions were being utilized to a greater extent. Cross functional teams were being used within the industry to a greater extent. The industry ensured integrative inventory management to a greater extent.

Recommendation

The study was about the impact of customer integration, supplier integration and internal integration on pork industry. Since there was a positive and significant relationship between customer integration, supplier integration, internal integration and performance of pork

industry, there industry managers should ensure that the extent of integration of the three variables are enhanced.

Areas of Further Study

The study recommended the following areas of further study;

i. A study that will assess the challenges affecting supply chain integration in the pork industry. This study will expose the challenges that need to be addressed for improved performance.

ii. Future researches should also conduct a study that will assess the barriers of implementation of supply chain integration strategies inpork industry. This study will be important in that it will help the industry managers to identify areas within the industry that require to be polished in order to increase the performance

iii. A study that will focus on the regression analysis to explain how much of the pork industry performance can be explained by the independent variables

REFERENCES

Abdullah A., Hamdan B., Maryam, A. and Abu D. (2011) Impact of Supply Chain Integration on Business Performance and Its Challenges. *International Business & Economics Research Journal* –Volume 10 (12)

Alan W., Jessica L., Ednilson B., and Scott W. (2014). The Relationship Between Strategic Supply Chain Integration and Performance: A Meta-Analytic Evaluation and Implications for Supply Chain Management Research. *Journal of Business Logistics*, 35(1): 71–96

Bernard, H. (2012) *Research Methods in Anthropology: Qualitative and quantitative methods*. California: Alta Mira Press

Baruch, Y. 1999. Response rates in academic studies: a comparative analysis. Human Relations 52: 421–434

Carr, A. and Pearson, J. (2002), "The impact of purchasing and supplier involvement on strategic purchasing and its impact on a firm's performance", *International Journal of Operations & Production Management*, Vol. 22 pp. 1032-53.

Croom, S. (2001), "Restructuring supply chains through information channel innovation", *International Journal of Operations & Production Management*, Vol. 21 No. 4, pp. 504-15.

Devaraj Sarv , Lee Krajewski, Jerry C. Wei.(2007). Impact of e-Business technologies on operational performance: The role of production information integration in the supply chain, *Journal of Operations Management* 25, 1199–1216

Eisenhardt, K. and Martin, J. (2000),"Dynamic capabilities: what are they?", *Strategic Management Journal,* Vol. 21, pp. 1105-21.

Flynn, B., Huo, B., Zhao, X., (2010). The impact of supply chain integration on performance: a contingency and configuration approach. *Journal of Operations Management*, Vol 28, 58-71.

Frohlich, M. and Westbrook, R. (2001). Arcs of integration: an international study of supply chain strategies. *Journal of Operations Management*. 19, 185-200.

Gimenez, C., Ventura, E., (2005). Logistics-production, logistics-marketing and external integration: their impact on performance. *International Journal of Operations & Production Management*, 25(1), 20-38.

Grean M. and Michael J. (2000) Supply-Chain Integration through Information Sharing: Channel Partnership between Wal-Mart and Procter & Gamble.

Haakansson, H. and Ford, D. (2002), "How companies interact in business networks?",*Journal of Business Research*, Vol. 55, pp. 133-9.

Haakansson, H., Havila, V. and Pedersen, A.C. (1999), "Learning in networks", Industrial Marketing Management, Vol. 28, pp. 443-52.

Halldorsson, A. (2002), "Third party logistics: a means to configure logistics resources and competencies" *Journal of Business Research*, Vol. 55

Harland, C.M. and Knight, L.A. (2001), "Supply network strategy: role and competence requirements", *International Journal of Operations & Production Management*, Vol. 21No. 4, pp. 476-89

Horvath, L. (2001), "Collaboration: the key to value creation in supply chain management", Supply Chain Management: *An international Journal*, Vol. 6 No. 5, pp. 205-207

Jap, S.D. (2001), "Perspectives on joint competitive advantages in buyer-supplier relationships", *International Journal of Research in Marketing*, Vol. 18, pp. 19-35.

Jayaram J. and Keah-Choon T.(2010). Supply chain integration with third-party logistics providers, *International Journal Production Economics* 125 , 262–271

Lambert, D., Cooper, M., Pagh, J., (1998). Supply Chain Management: Implementation Issues and Research Opportunities. *The International Journal of Logistics Management*, 9(2)

Logan, M.S. (2000), "Using agency theory to design successful outsourcing relationships", *International Journal of Logistics Management*, Vol. 11 No. 2, pp. 21-32.

Marzang E. (2010) *The role of information technology in supply chain management*. Retrieved on may, 2015 from www.modir.ir/Articles/2953.aspx

Miller, S. and Ross, A. (2003), "An exploratory analysis of resource utilization across organizational units: understanding the resource-based view", *International Journal of Operations &Production Management*, Vol. 23 No. 9, pp. 1062-83.

Mugenda, M.& Mugenda, G. (2003).*Research Methods: Quantitative and Qualitative Approaches*. Nairobi University Press

Narayanan, V. and Raman, A. (2004), "Aligning incentives in supply chains", *Harvard Business Review*, Vol. 82 No. 11, pp. 94-102.

Orodho, J. (2003). *Elements of Education and Social Science Research Methods* (2nd ed.). Maseno: Kanezja Publisher

Pagell, M., (2004). Understanding the factors that enable and inhibit the integration of operations, purchasing and logistics. *Journal of Operations Management*, 22(5), 459-87

Prajogo, D. and Olhager, J. (2012).*Supply chain integration and performance*: The effects of long term relationships, information technology and sharing, and logistics integration, *International Journal of Production Economic* 135, 514–522.

Rindfleisch, A. and Heide, J.B. (1997), "Transaction cost analysis: past, present, and future applications", *Journal of Marketing*, Vol. 61 No. 4, pp. 30-54.

Schoenherr, T. and Swink, M. (2012), "Revisiting the arcs of integration: cross-validations and extensions", *Journal of Operations Management*, Vol. 30 No. 1, pp. 99-115

Skjoett-Larsen, T. (1999), "Supply chain management: a new challenge for researchers and managers in logistics", *International Journal of Logistics Management*,Vol.10 No. 2, pp. 41

Stevens, G., (1989). Integrating the supply chain. *International Journal of Physical Distribution and Materials Management*, 19(8), 3-8

Stock G., Neol P., John D. (2002). Supply chain integration and performance. Logistsics, Strategy and Structure, International journal of operations and production management, vol.18, no.1, 37-52

Swink, M., Narasimhan, R. and Wang, C. (2007), "Managing beyond the factory walls: effects of four types of strategic integration on manufacturing plant performance", *Journal of Operations Management*, Vol. 25 No. 1, pp. 148-164

Tan, K. (2001), "A framework of supply chain management literature", *European Journal of Purchasing and Supply Management*, Vol. 7 No. 1, pp. 39-48.

Trkman, P., & Groznik, A. (2006).Measurement of Supply chain integration benefits.*Interdisciplinary Journal of Information, Knowledge, and Management, 1*, 37-45.

Williamson, O. (1996), *The Mechanisms of Governance*, Oxford University Press, Oxford.

Zhao, X., Baofeng, H., Willem, S., Jeff Hoi, Y. (2011). The impact of internal integration and relationship commitment on external integration. *Journal of Operations Management*, 29(1),

Zailani, S., & Rajagopal, P. (2005). Supply chain integration and performance: US versus East Asian companies. *Supply Chain Management: An International Journal, 10* (5), 379-393.