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Supply Chain Quality Management Practices and Performance of Pharmaceutical Distributors and Wholesalers in Mombasa, Kenya

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Abstract: *The study purposed to investigate the existing relationship between supply chain quality management (SCQM) practices and organizational performance of pharmaceutical players within Mombasa area in Kenya. This was prompted by the need to illustrate the role that SCQM could play in improving organizational market and financial performance without sacrificing customer satisfaction in the industry in the country said to face a number of challenges. Some of the challenges include an influx of counterfeit and substandard products through illegal networks which indicate supply chain vulnerability to risks and disruptions as well as a compromised supply chain quality management practices. A census survey of 20 out of the 22 registered distributors and wholesalers of pharmaceutical products in Mombasa County was undertaken to establish the relationship between SCQM practices and the performance of the industry players. Findings showed that SCQM practices adopted by the players in the study area positively impacted the overall organizational performance of the industry players with postponement having the greatest overall positive effect (β=.666) while level of information sharing registered the most negative effect (β=-.263). It is suggested that industry players should enhance sharing of proprietary information, enhance sharing of critical information and enhance operational partnership with regard to customer relationship. Similarly, they should enhance the level of adoption of supplier partnership and postponement.*

1. INTRODUCTION

Supply chain quality management (SCQM) is the formal coordination and integration of business processes involving all partner organizations in the supply channel to measure, analyse and continually improve products, services, and processes in order to create value and achieve satisfaction of intermediate and final customers (Robinson & Malhotra, 2005). This according to the researchers may entail integrating and coordinating the production, marketing, and financial functions of individual organizations in the marketplace. Indeed, it is a customer oriented process for integrating business planning and balancing supply and demand across the entire value chain system. According to Lambert and Cooper (2000), SCQM structure incorporates suppliers and customers in a one concurrent business process which spans the entire chain from initial source to the ultimate consumer.

The Pharmaceutical industry in Kenya, just like everywhere is a complex sector constituted by manufacturers, national regulators, government ministries, wholesalers, distributors, retailers and health facilities, all of who play a major role in supporting the country's health sector (EPZ, 2005). The which sector constitutes processes, operations and organizations involved in research/ discovery, development, manufacturing, sales and services of drugs/medications (Vidal & Goetschalckx, 2001) has a market share of not less than USD 240 million and employs more than 5000 people directly (UNIDO, 2010). Additionally, it is currently the largest producer of pharmaceutical products in the Common Market for Eastern and Southern Africa (COMESA) region, supplying about 50% of the regions' market. Specifically, records show that out of the region's 50 recognized pharmaceutical manufacturers, approximately 30 are based in Kenya (MoH, 2008). However, due to its poor quality and sub-standard drugs, the sector can only export to COMESA and relies heavily on imports from American European and Asian multinational pharmaceutical companies (UNIDO, 2010). Worse still, the high import is said to have given room to proliferation of cheap and substandard drugs into the market which in flooding the market has compromised its performance.

Since from the industry just like in other sectors, customers demand timely and quality service and since high quality tendency systems tend to perform better than low quality systems (Kuei, Madu & Lin, 2001), SCQM could play a lead role in correcting the situation. For instance, it would minimize system-wide costs while satisfying customer service level requirements which would impact directly and positively on competitive advantage and improve organizational performance (Li, Ragu-Nathan & Rao, 2006). At the same time, it would ensure that companies have better supply chain integrations with suppliers and customers thus realize improvement in organizational performance. Additionally, its adoption would ensure that management, resources, relationships and processes work in synergy to yield superior performance in the market place (Beamon, 1999; Beth, Burt, Copacino, Lee, Lynch & Morris, 2003). In other words, it is evident that SCQM practices which are significantly correlated with the supplier participation strategy (Lin, Chow, Kuei & Yu, 2005) is a key solution to the challenges that the sector faces due to its tangible business results and customer satisfaction levels. Proponents associate efficacy of SCQM in enhancement of the performance of a system to a number of its practices that include strategic supplier partnership, customer relations practices, information sharing, lean system and postponement (Robinson & Malhotra, 2005; Tan, Layman & Winser, 2002).

1.1. Supplier Partnership

Supplier partnership is defined as the long term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits (Sheridan, 2008; Noble, 1997). Strategic partnerships with suppliers enable organizations work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product design process can offer more cost effective design choices, help select the best components and technologies, and help in design assessment (Tan et al., 2002). Strategically aligned organizations can work closely together and eliminate wasteful time and effort (Balsmeier & Voisin, 1996). An effective supplier partnership can be a critical component of a leading edge supply chain (Noble, 1997).

1.2. Customer Relationship

Customer relationship comprises the entire array of practices that are employed for the purpose of managing customer complaints, building long-term relationships with customers, and improving customer satisfaction (Claycomb, Droge & Germain, 1999). Close customer relationship allows an organization to differentiate its product from competitors, sustain customer loyalty, and dramatically extend the value it provides to its customers (Magretta, 1998). Relationships provide the decisive antecedent for the creation of a resource advantage (Houston, 1986). Thus, investments in relationships are the first step in the direction of creating positive exchange, maximizing both values for the customer and profit for an organization. All human relationships are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives (Giles, 1991).

1.3. Information Sharing

Information sharing has two aspects: quantity and quality. Both aspects are important for the practices of SCQM and have been treated as independent constructs in the past SCQM studies (Moberg, Cutler, Gross & Speh, 2002). Quantity of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Monckza, Patersen, Handfield & Ragatz, 2008). Supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market change quicker. Quality of information sharing includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged (Moberg et al., 2002; Monckza et al., 2008). While information sharing is important, the significance of its impact on SCQM depends on what information is shared, when and how it is shared, and with whom (Holmberg, 2000). It appears that there is a built in reluctance within organizations to give away more than minimal information since information disclosure is perceived as a loss of power (Berry, 1994). Given these predispositions, ensuring the quality of the shared information becomes a critical aspect of effective SCQM (Feldmann & Muller, 2003). Organizations need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion.

1.4. Postponement

Postponement is defined as the practice of moving forward one or more operations or activities (making, sourcing and delivering) to a much later point in the supply chain (Beamon, 1998; Van

Hoek, 1998; Yang, Burns & Backhouse, 2004). Postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function (Waller, Dabholkar & Gentry, 2000).

Adoption of postponement is appropriate in the following conditions: innovative products, products with high monetary density, high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge (Pagh & Cooper, 1998). Postponement strategy is therefore vital for reducing losses from high value product.

2. STATEMENT OF THE PROBLEM

SCQM practices are known to enhance productivity, reduce inventory and lead time ultimately resulting in improved organizational market as well as financial performance. It has been advanced as a strategic weapon to develop a sustainable competitive advantage by reducing investment without sacrificing customer satisfaction especially for sectors facing challenges such as the pharmaceutical industry. Among the challenges include proliferation of counterfeit and substandard drugs that reach the public through illegal networks even with the checks mounted by the regulators. Such, are indicative of pharmaceutical supply chain vulnerability to risks and disruptions as well as a compromised supply chain quality management which if not checked not only compromises market performance but also exposes customers to health risks. The situation is compounded by the stiff competition among players that at times limit focussed attention on quality management necessary to address the concept and practice of quality within supply chains or network of firms.

Adoption of SCQM practices among pharmaceutical distributors and wholesalers, it was hoped could ensure the integrity of the supply chain that would improve quality of healthcare. However, sparse information exist that can provide an insight on the extent to which such practices could be aiding in quality control within the sector. As a matter of fact, limited empirical data on extent and influence of use SCQM practices by players in the value chain within the country exist. This study therefore sought to contribute in the ongoing debate by determining the existing relationship between supply chain quality management practices and organizational performance of pharmaceutical distributors and wholesalers within the country with a specific focus on the market players in Mombasa County.

3. OBJECTIVES OF THE STUDY

The overall objective of this study was to determine the existing relationship between supply chain quality management practices and organizational performance. Specifically, it sought to:

i. Establish the extent to which supply chain quality management practices have been adopted by pharmaceutical distributors and wholesalers in Mombasa County
ii. Determine the relationship between supply chain quality management practices adoption and organizational performance of pharmaceutical distributors and wholesalers in Mombasa County.

4. THEORETICAL FRAMEWORK

The study is based on three theories; the Resource Based View (RBV), Knowledge Based View (KBV) and Relational View (RV). RBV focuses on a firm as the unit of analysis. According to the theory, superior firm performance results from a firm's ability to accumulate resources and capabilities that are rare, valuable, and difficult to imitate (Beamon, 1999). SCQM consists of internal practices, which are contained within a firm, and external practices, which cross organizational boundaries integrating a firm with its customers and suppliers (Kaynak & Hartley, 2008). It is the unique resources resident in a firm which form building blocks for SCQM practice that are shared via knowledge or in relations to yield improved performance to the organization where they are embedded.

KBV addresses aspect of quality in supply chains and asserts that knowledge could be a source of competitive advantage which is socially constructed and is usually difficult to imitate. The KBV posits that inter-firm resources and routines can be sources of competitive advantage (Dyer & Singh, 1998). In this perspective a network of firms is the critical unit of analysis for understanding firm level organizational learning and knowledge creation. Through their linkages to other partners in a network, organizations would be able to learn by collaborating with other firms which helps them observe their practice and improve their own internal processes (Dyer & Nobeoka, 2000). As such,

effective relationship with partners and development of knowledge creation mechanisms are key determinants of inter-organizational learning (Dyer & Singh, 1998). Utilizing the KBV of inter-organizational relationship enables us to address the development and dynamics of learning in the supply chain by emphasizing practices that are specific to knowledge creation in a network.

RBV suggest that an organization's unique resources are resident in an organization but the resources are non-unique or standardized and can be obtained by competing firms at a cost equal to economic value they can generate. It implies that the competitive advantage is not sustainable in long term to generate super normal profits to an organization. Knowledge is transferable through human resource hiring and firing process putting limitation on KBV. Alternatively, the relational view of competitive advantage claims that inter-firm linkages may be a source of competitive advantage. This view suggests that a firm's critical resources may span firm boundaries and may be embedded in inter-organizational resources and routines (Dyer & Singh, 1998). As we move across and beyond the scope of the firm, the resources for competitive advantage are embedded in the network. Relational rent provides opportunity for flexible strategy that can be altered real-time to allow for organizations respond to rapid and unpredictable changes in the business environment.

5. RESEARCH METHODOLOGY

5.1. Participants and Procedure

Participants were drawn from management positions of 20 pharmaceutical firms within Mombasa County. Respondents were told that the study aimed at assessing the relationship between SCQM practices and their firm's performance with a view to improve service provision. They completed a questionnaire constructed by the researchers.

5.2. Measures

Supplier Partnership. Two items measured supplier partnership; strategic and operational partnership. The ratings of the extent of adoption were made on a 5-point scale and mean scores were made for each of the element and the variable.

Customer Relationship. Three items measured the extent of adoption of customer relationship. Sample items included 'managing customer complaints, building long-term relationship and continuous improvement on customer satisfaction. The ratings were made on a 5-point scale and a mean score was computed for the items.

Information Sharing. Four items measured the extent of adoption of information sharing. Items included issue of accurate and timely information, adequate and credible information, sharing of proprietary information and sharing of critical information.

Postponement. Three items measured the extent of adoption of postponement. Sample items were flexibility to changing customer needs, differentiating customer needs and modification of demand function. Mean scores of the items were computed.

Performance. Organisational performance was measured at three levels; marketing, financial and overall performance. A mean score of the items was computed.

6. RESULTS AND DISCUSSION

6.1. Descriptives

Means, standard deviations, and intercorrelations for scores on each of the variables are presented in Table 1 for the total sample.

Table1. *Means, standard deviations, and correlations between the variables of the study (N = 20)*

Variables	Mean	SD	1	2	3	4	5	6	7
1. Supplier Partnership	3.40	.968	-	.637**	.689**	.680**	.561*	.532*	.581**
2.Customer Relationship	3.83	.900		-	.726**	.855**	.519*	.720**	.679**
3. Information Sharing	3.38	.900			-	.773**	.528*	.530*	.565**
4. Postponement	3.40	1.024				-	. 755**	.739**	.796**
5. Marketing	3.80	.768					-	.751**	.912**
6. Financial	3.25	1.073						-	.956**
7. Performance	3.52	.863							-

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

Findings showed that the respondents rated customer relationship (M=3.83, SD=.900) and marketing performance (M=3.80. SD=.768) highly. Supplier partnership was positively and significantly correlated with customer relationship, information sharing, postponement, marketing, financial performance as well as overall performance. Customer relationship on its part was positively and significantly correlated with information sharing, postponement, marketing, financial performance and overall performance. Information sharing was equally positively and significantly correlated with postponement, marketing financial performance and overall performance. As was expected, postponement was positively and significantly correlated with marketing, financial and overall performance. This means that supplier partnership, customer relations, information sharing and postponement are mutually exclusive.

6.2. Extent of Adoption of Supply Chain Quality Management Practices

The first objective of this study intended to establish the extent of adoption of SCQMP by firms in the pharmaceutical distributors and wholesalers within Mombasa County. The respondents were requested to indicate the extent of adoption of various elements of SCQM practice within their organization. The strategies include supply partnership, customer relationship, level of information sharing and postponement. The results show that the respondents rated as highest the adoption of customer relationship (3.833) as a SCQM practiced by the wholesalers and distributors of pharmaceutical products. This was followed by supplier partnership and postponement (3.400) and lastly level of information sharing (3.375) in decreasing order of adoption.

6.2.1. Supplier Partnership

Elements of supplier partnership by the players in the pharmaceutical industry in Mombasa County were found to be clear and measurable as indicated by a weighted mean of 3.400. The managers were found to be very familiar with strategic partnership as an element of supplier partnership given its mean of 3.700. Likewise, they indicated that the use of operational partnership was equally prominent given its mean of 3.100. The findings on the significance of supplier partnership to pharmaceutical distributors and wholesalers concurs with that of Noble (2007) who states that an effective supplier partnership can be a critical component of a leading edge supply chain. This according to Tan et al (2002) is because suppliers participating early in the product design process can offer more cost effective design choices, help select the best components and technologies, and help in design assessment. Similarly, Sheridan (2008) and Noble (2007) are certain that it is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits.

6.2.2. Customer Relationship

Results of adoption of elements of customer relationship illustrated an acknowledgment by the managers that customer relation practice is a prominent SCQM practice adopted by their organizations given its weighted mean of 3.833. The respondents acknowledged building long term relationship with customers hence its mean of 3.950 as well as continuously improving on customer satisfaction explained by its mean of 3.850. Similarly, they confessed to managing all their customers' complains thus the element's mean of 3.700. This observation augurs well with that of Giles (1991) who observed that investments in relationships are the first step in the direction of creating positive exchange, maximizing both values for the customer and profit for an organization and that human relationship are formed by the use of a subjective cost-benefit analysis and the comparison of alternatives. It is also supported by Houston (1986) who insisted that relationships provide the decisive antecedent for the creation of a resource advantage.

6.2.3. Level of Information Sharing

Results of the extent of information sharing as practiced by wholesalers and distributors of pharmaceutical products in Mombasa County is clearly defined as is indicated by its overall mean ranking of 3.375. The managers were categorical that they usually gave adequate and credible information (3.800) and that the information they gave were always accurate and timely (3.600). Similarly, they attested to sharing critical information (3.250) and that such information was always proprietary (2.850). This finding on relevance of information sharing corroborates that of several researchers. For instance, Holmberg (2000) observed that while information sharing is important, the significance of its impact on SCQM depends on what information is shared, when and how it is

shared, and with whom. According to Berry (2004), it appears that there is a built in reluctance within organizations to give away more than minimal information since information disclosure is perceived as a loss of power. Consequently, ensuring the quality of the shared information becomes a critical aspect of effective SCQM (Feldmann & Muller, 2003).

6.2.4. Postponement

The findings shows that extent of adoption of elements of postponement was found to be clearly evident as is manifested by its overall weighted mean of 3.400. Consequently, the respondents acknowledged that their organizations were keen in differentiating customers' needs (3.450). Similarly, they indicated being cognizant of modification of demand function (3.450). Lastly, the managers were categorical that their organizations were flexible to changing customers' needs (3.300). The fact that the adoption of elements of postponement were found to be practiced by pharmaceutical distributors and wholesalers augurs well with arguments advanced by Waller (2000) who intimated that postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function. According to Pagh (2007), adoption of postponement is appropriate in the following conditions: innovative products, products with high monetary density, high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge.

6.3. SCQMP and Organizational Performance of Pharmaceutical Distributors and Wholesalers

A multiple regression model was applied to determine the effect of SCQMP on performance of pharmaceutical distributors and wholesalers. Multiple linear regression model used took the following form:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon$$

Considering that performance was measured in terms of marketing, financial and overall computed performance attributes, each of these components of SCQMP were designated Y_1, Y_2 and Y respectively and regressed against the independent variables yielding the results discussed in the following subsections.

6.3.1. SCQMP and Marketing Performance

Findings of the existing relationship between SCQM practices and marketing performance were as summarized in Table 2.

Table2. *Relationship between SCQMP Practices and Marketing Performance*

	Model	Un standard coefficients		Standard Coeff.	T	Sig.	F	R	R^2	P (Sig.) from ANOVA
		B	Std. Error	Beta						
Y_1	B_0	2.350	0.558		4.213	0.001	6.856	0.804	0.646	0.002
	X_1	0.142	0.178	0.179	0.798	0.437				
	X_2	-0.406	0.260	-0.474	-1.563	0.139				
	X_3	-0.116	0.224	-0.135	-0.516	0.613				
	X_4	0.857	0.250	1.143	3.430	0.004				

Generally the model used which was found to be significant (P=.002) indicated a 64.6% of the variation in the marketing performance being explained by the variation of SCQMP elements of supplier partnership, customer relationship, level of information sharing and postponement. R (.804) implied a strong positive relationship between SCQMP and marketing performance. Specifically, the regression analysis yielded the results:

$$\mathbf{Y_1 = 2.350 + 0.142X_1 - 0.406X_2 - 0.116X_3 + 0.857X_4 \qquad P = 0.002} \qquad \mathbf{(1)}$$

The model shows that supplier partnership (X_1) and postponement (X_4) are positively related to marketing performance, postponement being more positively related. Customer relationship (X_2) and level of information sharing (X_3) are negatively related to marketing performance as shown by their coefficient values. The model also illustrated that only Postponement (P=.004), is the only component of SCQM practice that which is significant. It would therefore not be appropriate to use this model to predict marketing performance because all the other individual parameters are not significant in explaining the performance.

6.3.2. SCQM Practices and Financial Performance

Findings for the existing relationship between SCQM practices and financial performance were as is presented in Table 3.

Table3. *Relationship between SCQMP Practices and Financial Performance*

	Model	Un standard coefficients		Standard Coeff.	T	Sig.	F	R	R^2	P (Sig.) from ANOVA
		B	Std. Error	Beta						
Y_2	B_0	0.202	0.843		0.240	0.814	5.337	0.766	0.587	0.007
	X_1	0.084	0.269	0.076	0.311	0.760				
	X_2	0.430	0.392	0.359	1.096	0.290				
	X_3	-0.227	0.338	-0.190	-0.671	0.512				
	X_4	0.553	0.377	0.527	1.465	0.164				

Similarly, the model used was found to be significant (P=.007) and accounted for a 58.7% of the total variation in financial performance being explained by the variation of SCQMP elements of supplier partnership, customer relationship, level of information sharing and postponement. R (.766) implied a strong positive relationship between SCQMP and financial performance. Specifically, the regression analysis yielded the results:

$$\mathbf{Y_2 = 0.202 + 0.084X_1 + 0.430X_2 - 0.227X_3 + 0.553X_4 \quad P = 0.007} \quad \mathbf{(2)}$$

The model shows that supplier partnership (X_1), customer relationship (X_2) and postponement (X_4) are positively related to financial performance, postponement being more positively related. Level of information sharing (X_3) on its part was negatively related with financial performance. Interestingly, none of the SCQM practices was significantly related with financial performance implying that the model was not appropriate to use model in predicting financial performance.

6.3.3. SCQMP and Organization Performance

Lastly, the existing relationship between elements of SCQMP and organizational performance established were as summarised in Table 4.

Table4. *Relationship between SCQMP Practices and Organizational Performance*

	Model	Un standard coefficients		Standard Coeff.	T	Sig.	F	R	R^2	P (Sig.) from ANOVA
		B	Std. Error	Beta						
Y_3	B_0	1.372	0.727		1.887	0.079	4.699	0.746	0.556	0.012
	X_1	0.247	0.232	0.268	1.066	0.303				
	X_2	-0.030	0.339	-0.030	-0.089	0.930				
	X_3	-0.263	0.292	-0.264	-0.901	0.382				
	X_4	0.666	0.326	0.763	2.045	0.059				

The model used was found to be significant (P=.012) and accounted for a 55.6% of the total variance in organizational performance being explained by the variation of SCQMP elements of supplier partnership, customer relationship, level of information sharing and postponement. R (.746) implied a strong positive relationship between SCQMP and financial performance. Specifically, the regression analysis yielded the results:

$$\mathbf{Y = 1.372 + 0.247X_1 - 0.030X_2 - 0.263X_3 + 0.666X_4 \quad P = 0.012} \quad \mathbf{(3)}$$

The model shows that supplier partnership (X_1) and postponement (X_4) are positively related to organisational performance. However, customer relationship (X_2) and level of information sharing (X_3) are negatively related to organisational performance. The model also shows that none of the components of SCQM practices is significant since all of them have p- values that are greater than the level of significance of 0.05. It would therefore not be appropriate to use this model to predict overall organizational financial because all the individual parameters are not significant in explaining the performance. Further, the overall regression model indicate that postponement had the overall greatest positive effect while level of information sharing had the most negative effect on performance of the pharmaceutical distributors and wholesalers. The findings on the significance of SCQM practices is in line with the observations of Lai et al. (2005) who in their study finding suggested that supplier firms regard a stable relationship as being positively linked to their commitment to quality for the focal

buyer firm. Additionally, they established that the link is stronger when the suppliers' perceptions of certainty of supply with the buyer firm are greater. Fyenes, et al. (2005) in a study on effect of supply chain relationships on performance established a strong correlation between supply chain relationships and quality performance.

7. LIMITATION AND CONCLUSION

7.1. Limitation

It is important to note that the findings of this study should be interpreted in a careful manner since the study involved only a limited number of players in the industry, and not all players thus the sample may not be representative of all industry players in Mombasa County and Kenya. Instructively, only respondents drawn from distributors and wholesalers were involved in this study.

7.2. Conclusion

The study set out to determine the relationship between SCQM practices of pharmaceutical distributors and wholesalers in Mombasa and their organizational performance. Findings showed that the practices enhance the overall performance of the pharmaceutical distributors and wholesalers with postponement having the greatest overall positive effect while level of information sharing the greatest negative effect. The findings imply that the management of the pharmaceutical distributors and wholesalers should consider putting in place steps to even better their performance. Though findings show that SCQM practices are being adopted, it is evident that the quality of adoption of some of its elements are still wanting and therefore needs to be strengthened to help fortify their effects on enhancing the performance. These include popularizing sharing of proprietary information and sharing of critical information by the industry players in relation to information sharing, enhancing operational partnership with regard to customer relationship. Also instructive from the research finding is the fact that though adoption of supplier partnership and postponement each have a net positive effect on performance, their individual and corporate effect is still insignificant. An enhancement of their level adoption is therefore recommended to help further improve their return on investment for the industry players.

REFERENCES

Balsmeier, P. W., & Voisin, W. J. (1996). Supply chain management: a time-based strategy. *Industrial Management*, *38*(5), 24-27.

Beamon, B. M. (1999). Measuring supply chain performance. *International Journal of Operations & Production Management*, *19*(3), 275-292.

Beamon, B. M. (1998). Supply chain design and analysis: Models and methods. *International Journal of Production Economics*, *55*(3), 281-294.

Berry, D., Towill, D. R., & Wadsley, N. (1994). Supply chain management in the electronics products industry. *International Journal of Physical Distribution & Logistics Management, 24*(10), 20-32.

Beth, S., Burt, D. N., Copacino, W., Gopal, C., Lee, H. L., Lynch, R. P., & Morris, S. (2003). Supply chain challenges. building relationships. *Harvard business review*, 81(7), 64-73.

Claycomb, C., Dröge, C., & Germain, R. (1999). The effect of just-in-time with customers on organizational design and performance. *International Journal of Logistics Management*,*10*(1), 37-58.

Dyer, J., & Nobeoka, K. (2002). Creating and managing a high performance knowledge-sharing network: the Toyota case. *Strategic Management Journal*, *21*(3), 345-67.

Dyer, J. H., & Singh, H. (1998). The relational view: cooperative strategy and sources of Interorganizational competitive advantage. *Academy of management review*, *23*(4), 660-679.

Export Processing Zones Authority (EPZ): Kenya's Pharmaceutical Industry 2005. Retrieved *http://www.epzakenya.com/UserFiles/files/PharmaceuticalSector1-8-2013.*

Feldmann, M., & Müller, S. (2003). An incentive scheme for true information providing in supply chains. *OMEGA, 31*(2), 63–73.

Giles, W. D. (1991). Making strategy work. *Long Range Planning*, *24*(5), 75-91.

Holmberg, S. (2000). A systems perspective on supply chain measurements. *International Journal of Physical Distribution & Logistics Management*, *30*(10), 847-868.

Houston, F. S. (1986). The marketing concept: what it is and what it is not. *The Journal of Marketing*, 81-87.

Kaynak, H., & Hartley, J. L. (2008). A replication and extension of quality management into the supply chain. *Journal of Operations Management*, *26*(4), 468-489.

Kuei, C. H., Madu, C. N., & Lin, C. (2001). The relationship between supply chain quality management practices and organizational performance. *International Journal of Quality & Reliability Management*, *18*(8), 864-872.

Lambert, D. M., & Cooper, M. C. (2000). Issues in supply chain management. *Industrial marketing management*, *29*(1), 65-83.

Lin, C., Chow, W. S., Madu, C. N., Kuei, C. H., & Pei Yu, P. (2005). A structural equation model of supply chain quality management and organizational performance. *International Journal of Production Economics*, *96*(3), 355-365.

Li, S., Ragu-Nathan, B., Ragu-Nathan, T.S., Rao, S.S. (2006). The impact of supply chain management practices on competitive advantage and organizational performance. *OMEGA*, *34* (2),107-124.

Magretta, J. (1998). The Power of Virtual Integration: An Interview with Dell Computer's Michael Dell. *Harvard Business Review 76*(2): 72 – 84.

Moberg, C. R., Cutler, B. D., Gross, A., & Speh, T. W. (2002). Identifying antecedents of information exchange within supply chains. *International Journal of Physical Distribution and Logistics Management*, *32*(9), 755–770.

Monczka, R. M., Petersen, K. J., Handfield, R. B., & Ragatz, G. L. (2008). Success factors in strategic supplier alliances: The buying company perspective. *Decision Science*, *29*(3), 5553– 5577.

Noble, D. (1997). Purchasing and supplier management as a future competitive edge. *Logistics Focus*, *5*, 23-27.

Pagh, J. D., & Cooper, M. C. (1998). Supply chain postponement and speculation strategies: how to choose the right strategy. *Journal of business logistics*, *19*, 13-34.

Robinson, C. J., & Malhotra, M. K. (2005). Defining the concept of supply chain quality management and its relevance to academic and industrial practice. *International Journal of Production Economics*, *96*(3), 315-337.

Sheridan, J. H. (2008). The supply-chain paradox. *Industry Week 247*(3), 20–29.

Tan, K. C., Lyman, S. B., & Wisner, J. D. (2002). Supply chain management: a strategic perspective. *International Journal of Operations & Production Management*, *22*(6), 614-631.

UNIDO Pharmaceutical Sector profile Kenya: Global UNIDO Project (2010): Retrieved from: *http://www.unido.org on 1-8-2013*

Van Hoek, R. I. (1998). "Measuring the unmeasurable"-measuring and improving performance in the supply chain. *Supply Chain Management: An International Journal*, *3*(4), 187-192.

Vidal, C. J., & Goetschalckx, M. (2001). A global supply chain model with transfer pricing and transportation cost allocation. *European Journal of Operational Research*, *129*(1), 134-158.

Waller, M. A., Dabholkar, P. A., & Gentry, J. J. (2000). Postponement, product customization, and market-oriented supply chain management. *Journal of Business Logistics*, *21*(2), 133-160.

Yang, B., Burns, N. D., & Backhouse, C. J. (2004). Postponement: a review and an integrated framework. *International Journal of Operations & Production Management*, *24*(5), 468-487.

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