IOSR Journal of Business and Management (IOSR-JBM)
e-ISSN: 2278-487X, p-ISSN: 2319-7668. Volume 20, Issue 12. Ver. I (December. 2018), PP 13-22
www.iosrjournals.org

Effect of Supply Chain Strategies on performance of Large-Scale Manufacturing Firms in Kenya

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Supply chain risks is a growing global threat to many businesses. A survey done by Business Continuity Institute established that 85% of firms experienced at least three supply chain disruptions annually resulting in less revenues, declining customers and damaged reputations. The manufacturing industryemploys13% of the country's labour force and is regarded as the country's economy driver to global competitiveness by 2030. It has however been distressed with supply chain disruptions leading to downsizing and closure of some firms, subsequently resulting to loss of jobs. Empirical studies reviewed lack of information on the application of the sixteen-supply chain strategies applicable to supply chain management as most studies considered studying general business strategies. The study sought to establish the effect of Supply Chain Strategies on Performance of large-scale manufacturing firms in Kenya guided by Resource Based View framework and a correlational survey design. The study targeted 473 Officers of the manufacturing firms in Nairobi out of which a sample of 403 was obtained after engaging 70 officers randomly selected in a pilot study. Pilot results revealed 34 item instrument reliability of 0.8999. Experts review, Bartlett's Sphericity test of $\alpha = 0.000<0.05$for all the subscales and factor scores correlation matrix of 0.388(SC Strategies, and 0.191(Performance) <0.7 ascertained validity. The study established a significant effect of SC Strategies on Performance ($F=2.956$, $\alpha=0.027$, $p<0,05$). The findings abet the theoretical position that firms should recognize the need for SC Strategies to improve the overall firm performance. The study recommends that SC Strategies role in enhancing organizations performance. These findings will act as a preamble for further research in Supply Chain. The findings will also be helpful to practitioners in understanding the role that supply chain strategies

Key Words: *Performance, Supply Chain Strategies, Large Scale Manufacturing Firms*

Date of Submission: 27-11-2018 Date of acceptance: 07-12-2018

I. Introduction

Many companies are working to address what is clearly a growing threat to their supply chains, but they do not always know how best to proceed. With the multifaceted nature of today's risks, piecemeal solutions and one-off initiatives are no longer sufficient. Instead, companies should aim to take a more holistic approach to managing supply chain risks and achieve greater visibility, flexibility, and control. In the long run, the key will be to build a "resilient" supply chain that not only seeks to reduce risks but is also prepared to quickly adjust and recover from any unanticipated supply chain disruptions that occur. Such supply chain resilience is quickly becoming a fundamental requirement. However, with today's complex, global supply chains where risks cannot be eliminated, having the ability to quickly bounce back from problems and continue business operations as efficiently as possible will likely be integral to remaining competitive although not sufficiently. Firms are therefore currently crafting adaptive supply chain strategies at the business and operations levels for them to be competitive in the globalization arena. Supply chain risks, supply chain strategy and firms' performance are therefore inseparable in any efficient business operations (Harps, 2000; Stonebraker & Afifi, 2004).

The concept of supply chain strategy views the entire flow of materials, information, finished goods and services from the suppliers, factories, warehouses and the end customer as a single working system managed to minimise costs and maximize the supply chain bonus (Chopra *et el.*,2013). In essence, research (Gottorna, 2007), indicates that there are sixteen supply chain strategies in use today. Namely: synergistic; information networks; project logistics; innovation; nano-chain; market dominance; value chain; extended; efficient; risks-hedging; micro-chain; cash-to-cash cycle; speed to market; tie down; none existent; and demand supply chain strategies. This has led to the categorization of the sixteen supply chain strategies into a dichotomy of strategic and tactical supply chain strategies (Gattorna, 2007). There are some benefits, challenges, and relative complexity for each of these sixteen supply chain strategies. The sixteen-supply chain strategy

dichotomy by (Gattorna, 2007 & Gadde, 2001) has presented several useful insights for today's supply chain manager as they engage in planning processes. In order to identify the output performance resulting from the supply chain strategies, they need to start with looking at how their company actually competes. Gattorna's (2007) sixteen-supply chain strategy dichotomy to provide a convenient way of identifying how the choice among the above sixteen supply chain strategies will moderate the relationship between supply chain risks and performance of manufacturing firms in Kenya.

Performance not only refers to accomplishment of results within the budget limits (Fapper, Fortan & Stoop, 1996; Mwita, 2000; Scotti, 2004) rather it could refer to how well things are done i.e. how efficient, effective and productive the outcome is. Ordinarily and according to Gunasekaran, Patel & McGaughey (2004) SC performance (outcomes) on its own is an outcome, while the firm performance is the impact. Performance evaluation should therefore utilize both financial and non-financial measures and for this reason this study does not consider only supply chain measures adequate for measuring performance of the manufacturing firms but rather a combination of both financial and operational measures.

The manufacturing sector are considered to be the major drivers of the Kenyan economy to global competitiveness by 2030 (GoK, 2007). According to the KIPPRA report (2013), manufacturing sector is a major contributor to the Kenyan economy as it currently employs 277,900 people, which represents 13% of the labour force in the formal sector with an additional 1.6 million people employed in the informal side of the industry. Nearly 50% of manufacturing firms in Kenya employ 50 or more workers. The sector comprises of about 3,700 manufacturing units and is divided into several broad sub-sectors. KAM has classified manufacturing sector into categories identified as: Building, Construction & Mining, Chemical & Allied, Electrical & Electronics, Food Beverages & Tobacco, Leather & Footwear, Metal & Allied, Motor Vehicle &Accessories, Paper & Board, Pharmaceutical & Medical Equipment, Plastics & Rubber, Textiles &Apparels, Timber, Wood Products & Furniture, Consultancy & Industrial Services and SME Focal Point and service sector (KAM, 2015).The top three manufacturing subsectors account for 50% of the sector GDP, 50% of exports, and 60% of formal employment. Overall, manufacturing contributes 10% to GDP. The bulk of Kenya's manufactured goods (95%) are basic products such as food, beverages, building materials and basic chemicals. Only 5% of manufactured items, such as pharmaceuticals, are in skill-intensive activities (KIPPRA, 2015). According to PwC(2010) Kenya's manufacturing subsector has a challenging history in terms of performance attributed to unstructured supply chain strategy and supply chain risks. This has caused many manufacturing subsector companies in Kenya particularly the private and multinational manufacturing firms to collapse, relocate to other countries, shut down, downsize operations and even retrench staff due to stiff competition from imports. These problems facing the manufacturing sector hurts the entire economy and despite this no study has been found practicable enough to help solve the problem. Supply chain strategies has been mentioned by various scholars as a paramount solution to the disruptions in the supply chain and an enhancer of performance and can therefore work to solve the problem facing the manufacturing firms in Kenya. However, no empirical study has been done to text the assertions of the researchers. This study therefore better serves as a starting point in providing a strategic map in formulating supply chain strategies to manage the various particular supply chain risks that deter substantial productivity and improving performance to overcome the challenges and replace external suppliers gradually as envisioned in Kenya's Vision 2030.It is in light of this that the study seeks to contextually test the effect of supply chain risks and supply chain strategies on performance of large scale manufacturing firms in Nairobi.

II. Literature Review

The Concept of Supply Chain Strategies

Supply chain strategies require a total system view of the linkages in the chain that work together efficiently to create customer satisfaction at the end point of delivery to the consumer. As a consequence, costs must be lowered throughout the chain by driving out unnecessary costs and focusing attention on adding value. Throughout efficiency must be increased, bottlenecks removed and performance measurement must focus on total systems efficiency and equitable reward distribution to those in the supply chain adding value. The supply chain system must be responsive to customer requirements." In essence, research indicates that there are sixteen supply chain strategies in use today. Namely: synergistic; information networks; project logistics; innovation; nano-chain; market dominance; value chain; extended; efficient; risks-hedging; micro-chain; cash-to-cash cycle; speed to market; tie down; none existent; and demand supply chain strategies. This has led to the categorization of the sixteen supply chain strategies into a dichotomy of long-range supply chain strategies and mid-range supply chain strategies (Gattorna, 2007). The first four supply chain strategies are categorized and explored as Mid-range SC Strategies; while the supply chain strategies number 5 through 16 are known as Long-range SC Strategies. Mid-range range supply chain strategies are operational and will affect midterm firm performance. They include the need for SC strategy, third-party SC strategy, tie down the firm SC strategy, and the internal system that efficiently feeds production SC strategy.

The sixteen-supply chain strategy dichotomy by Gattorna, (2007) and Gadde, (2001) has presented several useful insights for today's supply chain manager as they engage in planning processes. In order to identify the output performance resulting from the supply chain strategies, they need to start with looking at how their company actually competes. Gattorna's, (2007) sixteen-supply chain strategy dichotomy to provide a convenient way of identifying how the choice among the above sixteen supply chain strategies will additionally affect performance of manufacturing firms in Kenya.

The Concept of Performance

Performance not only refers to accomplishment of results within the budget limits (Fapper, Fortan & Stoop, 1996; Mwita, 2000; Scotti, 2004) rather it could refer to how well things are done i.e. how efficient, effective and productive the outcome is. Ordinarily and according to Gunasekaran, Patel & McGaughey (2004) SC performance (outcomes) on its own is an outcome, while the firm performance is the impact. Performance evaluation should therefore utilize both financial and non-financial measures and for this reason this study does not consider supply chain measures adequate for measuring performance of the manufacturing firms. Most organizations have not made us of the balanced framework for financial and non-financial indicators as the challenge exist on how to balance the financial measures which are generally well developed and only examined by external stakeholders against the operational measures which are ad hoc and lack formal structure. During performance evaluation and measurement, considerations should be made to avoid disparate and incompatible measures. This measurement system was proposed to evaluate corporate performance evaluation from four different perspectives: the financial, the internal business process, the customer, and the learning and growth by (Kaplan & Norton, 1992). According to Kleijnen and Smits (2003) the main intent of BSC is to keep score of a set of items that maintain a balance between short term and long-term objectives, between financial and nonfinancial measures, between lagging and leading indicators, and between internal and external performance perspectives. In addition, Kleijnen and Smits, 2003; Bhagwat and Sharma, 2007) states that it can also be used to align businesses to new strategies and reduce cost. In the BSC, the customer metric is crucial since in a SC, one company's customer may be another company's supplier.

However, Neely, Adams & Kennerley (2003) argue the framework contains a serious failure in their construction. It focuses management strictly on a set of pre-defined indicators and measures making them not able to respond to simple and fundamental questions, such as "what our competitors are doing?" The BSC does not monitor competition or technological developments. This implies that it does not consider the uncertainty inherent risks involved in the events that can threaten this strategy. The effect of this control model can lead to serious dysfunctional behaviour and loss of control over the implementation of the strategy (Norreklit,2003). Due to problems in the implementation of the strategy it is difficult to achieve a balance between financial and non-financial measures as suggested in the framework (Anand *et al.,*2005). Richardson (2004) also notes that organizations over concentrate in the task of generating indicators and give less time to the definition of strategy resulting into indicators that are not aligned with the strategic objectives.

To solve the BSC problem of not considering the uncertainty inherent risks involved in the events that can threaten strategy implementation and the inadequate supply chain measures, the current study will combine the measures of both supply chain outcome and firm's performance. No study previously has considered employing an integration of comprehensive supply chain performance measures adopted from the works of (Gunasekaran *et al*., 2001; Cumbo, Kline & Bumgardner, 2006); Holweg, 2007) and BSC measures developed by (Kaplan & Norton, 1992) that measure firm's performance in measuring the overall performance of a firm. A determination of performance using this comprehensive set of questions, the study believes will provide performance data that is efficient (provide information on accomplishment of results within the budget limits) effective (provide information on how well things are well done) and Productive (provide information on the results of the efficiency and effectiveness in term of the outcome).

Effect of Supply Chain Strategies on Performance

There is paucity of empirical evidence on the relationship between supply chain strategy and performance as most studies focus on overall strategy and performance. Albert Aragon-Correa, Hurtado-Torres, Sharma, & Garcia-Mprales (2008) investigating the effect of environmental strategy and performance in small firms in a study of more than 108 SMEs in the automotive repair sector in Southern Spain. Found that SMEs undertake a range of environmental strategies and the most proactive strategies exhibited a significantly positive financial performance.

Previous studies for instance, Torres, Sharma, & Garcia-Mprales. (2008) investigated the effect of environmental strategy and performance in small firms in a study of more than 108 SMEs in the automotive repair sector in Southern Spain focused on general organizational strategy, Kumlu (2014) seeking to investigate the relationship between intangible resources and competitive export strategies and performance of 1415 companies from Metal, Textile, Chemical and Furniture industry from Turkey focused on general organizational

strategy. John (2010) investigating the link between business strategy and performance giving special attention to the composition of combination of strategies using survey assessed 277 retail business in the USA likewise focused on general business strategy. Nyaoga, Magutu and Aduda (2015) came very close to the current study when they investigated if there is a link between supply chain strategies and firm performance evidence from large-scale manufacturing firms in Kenya, they however employed the BSC in measuring the firm's performance. The above presented studies on the effect of supply chain strategy on performance were generally focusing on overall organizations strategies and not supply chain strategies. They were therefore unable to identify how and which strategies affected the performance of the organizations they were studying. Consequently, in an attempt to establish the effect of strategy on performance they employed uncomprehensive measures of performance focusing only on the impact of supply chain functions to the customer and not on the overall firm's performance which is the core reason for the organization existence. To solve this most studies have considered using the BSC, however the BSC is criticized by Neely, Adams & Kennerley (2003) who argue the framework contains a serious failure in its construction as it focuses management strictly on a set of pre-defined indicators and measures making them not able to respond to inevitable and unforeseen factors such as supply chain risks. This implies that it does not consider the uncertainty inherent risks involved in the events that can threaten strategy development and implementation. The effect of this control model can lead to serious dysfunctional behaviour and loss of control over the implementation of the strategy implemented (Norreklit,2003). Due to the problems in the implementation of the strategy it is therefore difficult to achieve a balance between financial and non-financial measures (Anand *et al.*, 2005).However, despite the attempts to establish the effect of supply chain strategies on performance, there is still lack of information if expanded measures of supply chain strategy that presents several useful insights for today's supply chain managers as they engage in planning processes by providing a convenient way of identifying how the choice among the sixteen supply chain strategies will additionally effect the performance and robust performance measure combining the BSC and Supply chain performance measure adopted from various scholars are taken into account and this warrants investigation. It is in this regard that the study sought to establish the effect of Supply Chain Strategies on Performance of large-scale manufacturing firms by testing the following hypothesis.

$H0_2$: Supply chain strategies have no significant effect on performance of large-scale manufacturing firms in Kenya.

III. Methodology

This study adopted a correlational survey research design. Survey design assist in securing information and evidence on existing circumstances and to identify ways to compare present conditions so as to plan how to take the next step (Kelley, Clark, Brown, & Sitzia, 2003). Correlation research design on the other hand assist in establishing the association between variables. The target population for the study were all the 473 large-scale manufacturing firms in Nairobi out of which a seventy (70) large scale manufacturing firms were randomly selected to participate in a pilot study and the remaining four hundred and three (403) all drawn using census survey sampling technique to participate in the actual study.

Reliability Statistics

The reliability of Linkert scale was assessed by subjecting the scales measuring the 16 SC Strategies items and 10 Performance items to a Cronbach Alpha reliability test. The result of the test from the pilot study indicated a computed Cronbach alpha value of $\alpha = 0.8999$which is above the threshold of $\alpha > 0.7$ suggested by (Hair, Anderson, Tatham, & Black, 1998; Zikmund et al., 2010and 0.6 suggested by George & Mallery,2009.

Validity Statistics

A preliminary test done to ascertain singularity and multicollinearity of the SC Strategies and Performance subscale established all the correlational matrix values for the two subscales (SC Strategies and Performance) were all less than 0.9 and significant at 95% confidence level. The tolerance test for each subscale was also established at 0.00001060 correlational matrix determinant for SC Strategies subscale and 0.00002293 correlational matrix determinant for performance subscale all of which are greater than the cut of point of 0.00001(Hair, Anderson, Tatham, & Black, 2013). The less than 0.9 correlational matrix values for all the subscales and the correlational matrix determinants which exceeded the set threshold of 0.00001 indicated singularity and multicollinearity were not going to be a problem for these data sets. Bartlett's test of Sphericity for the scale was also established at $\alpha = 0.000$ implying that each scale is unidimensional (instrument can be used to describe only one construct) (Field, 2005). This indicating convergent validity of the subscales.

Each sub-scale explains adequate variance with SC Risk subscale linear components explaining up to45.626 variance in SC Risk, SC Strategies linear components explaining up to79.847 variance in SC Strategies and Performance Subscale linear components explaining 61.291variance in Performance. The sub scales factor scores correlation matrix which is less than the factor score correlation matrix of 0.7 with SC Strategies sub

scale score being 0.388 and performance subscale score being 0.191indicatesthat the factors measure conceptually different constructs, a clear evidence of discriminant validity (Vagias, 2006).

Data Analysis

Regression analysis and specifically a multivariate analytical approach with a backward elimination was used to establish the effect of SC Risks on performance and present only those effect that were significant.

IV. Discussion

Effect of SC Strategies on Performance

The objective of the study was to determine the effect of SC Strategies on performance of large-scale manufacturing firms in Kenya. SC Strategies were categorised as the mid-range and long-range SC Strategies. Mid-Range SC Strategies comprising of (synergistic; information networks; project logistics and innovation) while Long range SC Strategies comprised of (nano-chain; market dominance; value chain; extended; efficient; risks-hedging; micro-chain; cash-to-cash cycle; speed to market; tie down; none existent; and demand supply chain strategies).

Performance was measured as a composite of (customer satisfaction, cost efficiency, capacity utilization, research & development, sales volume, reduction in inventory cost, reduction, reduction in unit cost, range of products, inventory turnover rate and total average inventory) which were averaged to come up with overall firm's performance. Multiple regression analysis with backward elimination starting with all SC Risk measures and reducing them one by one (from the ones with the highest p-values) until the model remained with only SC Risk indicators that had a significant p-value at 95% Confidence level was done(See Appendix III).

The final model had only three SC Strategies items which had a significant negative effect on performance namely (a strategy that aligns information systems architectures and systems, a strategy that increases the firm's ability to mass-maximize and build close relations with customers and a supply chain strategy that allows the firm and supply chain members to adopt to different products of different segment of the market). All the other remaining indicators for SC Strategies had insignificant negative effect on performance and were therefore eliminated and not presented in the final regression coefficients Table 4.6.

Theoretical reasoning, the empirical and theoretical literature review led to the belief that both Mid-range and Long-range supply chain strategies would have a significant effect on performance. Hence following null hypothesis was formulated and tested:

$H0_2$: Supply chain strategies have no significant effect on performance of large-scale manufacturing firms in Kenya.

To test this null hypothesis, a full regression model was fitted as in presented in Table 4.6.

Table 4. 1: Effect of SC Strategies on performance

	R Square	Adjusted R Squared	RMSE	F	Sig
Model No. ii	0.636	0.636	0.450	33.200	0.000

Source: (Survey data, 2018)

The adjusted R^2 of 0.636 in Table 4.7 indicate that 0.636 (63.6%) of the variance in Performance is explained by SC Strategies. This implies that 63.6% of the variation in Performance is explained by SC Risks and while the remaining 36.4% is explained by the other variables not included in the study. The F-statistics (33.200) which is greater than 2 and a p value of = 0.000<0.05 implies that SC Strategies have a significant effect on performance at a confidence level of 95%.

Table 4. 2 Effect of SC Strategies on Performance

SC STRATEGIES	B	Std. Error	t	Sig.
(Constant)	0.952	0.174	5.49	0.000
A strategy that aligns information systems architectures and systems	0.064	0.029	2.21	0.000
A strategy that increases the firm's ability to mass-maximize and build close relations with customers	0.158	0.031	5.01	0.000
A supply chain strategy that allows the firm and supply chain members to adopt to different products of different segment of the market.	0.054	0.019	2.84	0.000

Source: (Survey Data, 2018)

The equation for the regression model is expressed as:

$P = 0.952 + 0.114SCS_1 + 0.158SCS_2 + 0.104SCS_3 + \varepsilon_i$……...…(4.2)

The results of the regression model equation (4.2) indicates that if all the independent variables SC Strategies (synergistic; information networks; project logistics and innovation, nano-chain; market dominance; value chain; extended; efficient; risks-hedging; micro-chain; cash-to-cash cycle; speed to market; tie down; none existent; and demand supply chain strategies) were held constant, performance would be predicted to be (β= 0.952, $\alpha = 0.000<0.05$.

The study established SC Strategies aligning information systems architectures and systems to respond to changing customer demands to be having significant effect on performance ($\beta = 0.064$, $\alpha = 0.000<0.05$). This statistically indicates that a change of one standard deviation in SC Strategies that aligns information systems architectures and systems to respond to changing customer demands results in 0.064 standard deviations increase in performance. Ideally if the large-scale manufacturing firms were to adopt SC Strategies that aligns information systems architectures and systems to respond to changing customer demands they would experience a significant positive increase on their performance

Moreover, SC Strategies increasing the firm's ability to mass-maximize and build close relations with customers when designing new and modifying existing products was established to be having a significant effect on performance ($\beta = 0.158$, $\alpha = 0.000 < 0.05$). This statistically indicates that a change of one standard deviation in SC Strategies increasing the firm's ability to mass-maximize and build close relations with customers when designing new and modifying existing products results in 0.158 standard deviations increase in performance. Ideally if large scale manufacturing firms were to increase their adoption of SC strategies that increase their ability to mass-maximize and build close relations with customers when designing new and modifying existing products they would experience a positive increase in their performance.

Furthermore, SC Strategies that allow the firm and supply chain members to adopt to different products of different segment of the market was established to be having a significant effect on performance ($\beta = 0.054$, $\alpha = 0.000 < 0.05$). This statistically indicates that a change of one standard deviation in SC Strategies that allow the firm and supply chain members to adopt to different products of different segment of the market results in 0.054 standard deviations increase in performance. Ideally if large-scale manufacturing firms were to adopt SC Strategies that allow it and its supply chain members to adopt to different products of different segment of the market they would experience a significant positive increase in its performance.

Thus supply chain strategies increasing the firm's ability to mass-maximize and build close relations with customers when designing new and modifying existing products had the highest positive significant effect on performance ($\beta = 0.158$) followed by supply chain strategies aligning information systems architectures and systems to respond to changing customer demands with a significant positive effect of ($\beta = 0.064$) and then Supply chain strategies that allow the firm and supply chain members to adopt to different products of different segment of the market with a significant positive effect of ($\beta = 0.054$) on performance of large scale manufacturing firms in Kenya.

The regression results of ($F=33.200$, $\alpha = 0.000<0.05$) clearly indicates a significant effect of SC Strategies on performance and is a suffice evidence to conclude that SC Strategies have a significant effect on performance. The null hypothesis that SC Strategies have no significant effect on performance of large-scale manufacturing firms was therefore rejected.

These findings corroborate the assertions of RBV (Prahald & Hamel, 1990) that SC Strategies which are valuable and rare amongst firms, imperfectly imitable and heterogeneous as they are developed within the firm can be used exploit opportunities to enhance the firm's performance.

In the same vein as the study findings Albert Aragon-Correa, Hurtado-Torres, Sharma, & Garcia-Mprales (2008) investigating the effect of environmental strategy and performance in small firms in a study of more than 108 SMEs in the automotive repair sector in Southern Spain. Found that SMEs undertake a range of environmental strategies and the most proactive strategies exhibited a significantly positive financial performance.

These findings support the findings of John (2010) who seeking to investigate the link between business strategy and performance giving special attention to the composition of combination of strategies using survey assessed 277 retail business in the USA established that a combination of strategies was associated with higher performance in some but not all instances.

The establishment of an R^2 supports the findings by Nyaoga, Magutu and Aduda (2015) who investigated if there is a link between supply chain strategies and firm performance evidence from large-scale manufacturing firms in Kenya and established that supply chain strategies are indeed useful predictors of the firm's performance as supply chain strategies explained63.6%variationsin the firm's performance.

These findings clear the contradiction by Menor et al., (2007) that the investment in supply chain strategy is associated with increased costs and it does not translate to improved firm performance.

V. Conclusion

Based on the summary of findings on objective two and in support of theory, past literature and practice the study concludes that SC Strategies have a significant effect on the performance of large-scale manufacturing firms in Kenya. In spite the fact all the SC Strategies have a positive effect on performance of large-scale manufacturing firms in Kenya, only three SC Strategies had a significant effect on performance with the other thirteen SC Strategies having insignificant effect on performance. The three SC Risk items although having positive effect on performance had varied effect on performance with SC Strategies increasing the firm's ability to mass-maximize and build close relations with customers when designing new and modifying existing products was established to be having the highest positive effect followed by SC Strategies aligning information systems architectures and systems to respond to changing customer demands with an effect of and SC Strategies allowing the firm and supply chain members to adopt to different products of different segment of the market.

5.3 Recommendations

Based on the conclusion of objective two that sought to establish the effect of SC Strategies on performance of manufacturing firms in Kenya. The study recommends that managers recognize the need of SC Strategies in enhancing performance of the various functions of the supply chain. The study however highly recommends the adoption of SC Strategies increasing the firm's ability to mass-maximize and build close relations with customers when designing new and modifying existing products was established to be having the highest positive effect followed by SC Strategies aligning information systems architectures and systems to respond to changing customer demands with an effect of and SC Strategies allowing the firm and supply chain members to adopt to different products of different segment of the market as they are the SC Strategies with a significant effect on performance.

5.4 Limitations of the Study

The study underlines that the performance measures used in the current research were based on perceptions of managers, and this did not give a true reflection of the effect of long-term strategies.

5.5 Suggestions for Further Studies

Future research can test the mediating effect of supply chain performance in the relationship between SC Strategies and firm performance. This will involve checking whether the SC performance has an influence on firm performance.

The current study was done in a manufacturing setting. Future studies can therefore be done on the service industry given that operations and supply chain strategies are for both service and manufacturing settings. This can compare the supply chain strategies and supply chain technologies that apply to service and manufacturing settings in a developing economy

This study used the sixteen-supply SC dichotomy by Gattorna (2007) and Gadde (2001) as mid-range and long-range SC strategies. Future research should therefore test the joint effect of the supply chain strategies confounding supply chain risk on firm performance.

This study focused on supply chain strategies which could cut across procurement, value creation and distribution. Future studies can narrow their focus to procurement strategies, value creation strategies and distribution strategies by comparing their impact on a firm's supply chain performance and overall performance.

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Appendix III: Model Summary for the Effect of SC Strategies on Performance

Model 1				
SC STRATEGIES	**B**	**Std. Error**	**t**	**Sig.**
(Constant)	0.91	0.205	4.43	0.000
MRSCS - 1	0.114	0.03	3.83	0.000
MRSCS – 2	0.064	0.037	1.72	0.087
MRSCS – 3	-0.024	0.05	-0.49	0.627
MRSCS – 4	0.137	0.049	2.8	0.005
LRSCS – 1	-0.089	0.086	-1.03	0.302
LRSCS – 2	-0.106	0.275	-0.39	0.699
LRSCS – 3	0.126	0.134	0.94	0.349
LRSCS – 4	-0.071	0.236	-0.3	0.765
LRSCS – 5	0.069	0.083	0.84	0.401
LRSCS – 6	0.112	0.084	1.33	0.185
LRSCS – 7	0.116	0.046	2.54	0.012
LRSCS – 8	-0.023	0.045	-0.52	0.603
LRSCS – 9	0.057	0.156	0.36	0.716
LRSS – 10	-0.063	0.225	-0.28	0.779
LRSCS – 11	-0.107	0.17	-0.63	0.529
LRSCS – 12	0.074	0.086	0.86	0.391

Model 2				
SC STRATEGIES	**B**	**Std. Error**	**t**	**Sig.**
(Constant)	0.893	0.198	4.51	0.000
MRSCS - 1	0.115	0.03	3.83	0.000
MRSCS – 2	0.064	0.037	1.74	0.083
MRSCS – 3	-0.022	0.05	-0.45	0.655
MRSCS – 4	0.139	0.049	2.86	0.005
LRSCS – 1	-0.085	0.085	-1	0.317
LRSCS – 2	-0.178	0.139	-1.28	0.202
LRSCS – 3	0.130	0.133	0.98	0.328
LRSCS – 5	0.072	0.08	0.91	0.363
LRSCS – 6	0.105	0.081	1.29	0.197
LRSCS – 7	0.111	0.044	2.55	0.011
LRSCS – 8	-0.02	0.044	-0.45	0.652
LRSCS – 11	-0.124	0.084	-1.47	0.141
LRSCS – 12	0.08	0.079	1.01	0.312
Model 3				
SC STRATEGIES	**B**	**Std. Error**	**t**	**Sig.**
(Constant)	0.853	0.188	4.53	0.000
MRSCS - 1	0.117	0.29	3.97	0.000
MRSCS – 2	0.061	0.035	1.74	0.084
MRSCS – 4	0.129	0.042	3.11	0.002
LRSCS – 1	-0.075	0.083	-0.91	0.365
LRSCS – 2	-0.188	0.134	-1.4	0.161
LRSCS – 3	0.141	0.131	1.07	0.284
LRSCS – 5	0.063	0.079	0.81	0.421
LRSCS – 6	0.102	0.081	1.26	0.208
LRSCS – 7	0.107	0.042	2.54	0.011
LRSCS – 11	-0.059	0.048	-1.23	0.220
Model 4				
SC STRATEGIES	**B**	**Std. Error**	**t**	**Sig.**
(Constant)	0.94	0.174	5.4	0.000
MRSCS - 1	0.111	0.029	3.79	0.000
MRSCS – 2	0.051	0.034	1.5	0.133
MRSCS – 4	0.115	0.04	2.91	0.004
LRSCS – 2	-0.074	0.045	-1.63	0.104
LRSCS – 6	0.071	0.036	1.96	0.051
LRSCS – 7	0.106	0.04	2.64	0.009
Model 5				

SC STRATEGIES	B	Std. Error	t	Sig.
(Constant)	0.952	0.174	5.49	0.000
MRSCS - 1	0.064	0.029	2.21	0.000
MRSCS – 4	0.158	0.031	5.01	0.000
LRSCS – 7	0.054	0.019	2.84	0.000

Source: (Survey Data, 2018)

Albert Washington Ochung Tambo. "Effect of Supply Chain Strategies on performance of Large Scale Manufacturing Firms in Kenya." IOSR Journal of Business and Management (IOSR-JBM) , vol. 20, no. 12, 2018, pp. pp. 13-22.