INFLUENCE OF SUPPLY CHAIN RESILIENCE STRATEGIES ON PERFORMANCE OF RETAIL STORES IN KENYA

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ABSTRACT

The number of retail chains registering losses due to a wide array of supply chain disruptions have increased and it is projected that with the unprecedented Covid-19 pandemic, undoubtedly, the trend is on the rise. As such, retail chains have been grounded. On the flipside, some of the retail chains have leveraged on resilience strategies to remain competitive in cutthroat competitive markets. The researcher aimed at establishing the influence of Supply Chain Resilience Strategies on performance of retail stores in Kenya. The study adopted a cause-and-effect conceptual framework that has robust strategy, flexibility strategy, recovery strategy and VMI strategy as predictor variables and supply chain performance as the criterion variables. Systems theory, Natural Accidents theory and SCOR model are the theoretical framework underpinning the study. Further, the study adopted a descriptive research design. The unit of analysis of the study was the retail sector in Kenya and the unit of analysis is Naivas Retail Stores Limited. The study adopted stratified random sampling. Questionnaires were the research instrument that was used to collect data from a probabilistic sample of 305 respondents. Collected data was analyzed descriptively and by use of inferential statistics. The findings revealed that supply chain resilience strategies accounted for a significant variance in supply chain performance. It was concluded that all the selected supply chain resilience strategies positively influence supply chain performance. The study recommended that recovery strategy be improved by the retail stores, flexibility and robustness strategy be enhanced, and retails stores work on improving the VMI strategies to improve its practice.

Keywords: *Supply Chain Resilience, Performance, Robustness, Recovery, Flexibility, Retail Stores*

1.0 INTRODUCTION

The contemporary marketplace is marred by vulnerabilities, risks and disruptions that are posing unquantifiable threats to the sustainability of organizations. (Colichia&Strozzi, 2012 cited in Gölgeci, &Kuivalainen, 2020). This has resulted to the multiplicity of disruptive events in the global and local supply chains (Chowdhury, & Quaddus, 2016). Global case scenarios are unprecedented levels of turbulences ranging from natural disasters in the previous decade such as volcanic eruptions in Iceland, the Japanese Earthquake as well as Tsunami, Thailand floods and Hurricanes. Other turbulences encompass political upheavals (US-China conflict, Venezuela, Syria, Yemen, South Sudan conflicts etc.), cyber-attacks, market dynamisms such as unmatched high demand variability, shrinking product lifecycles (Gölgeci, &Ponomarov, 2015; Tuuhabwa, Steveson, Busby &Zorzini, 2015).

To aggravate the vulnerabilities, currently, nations and economies globally, are struggling to cope with the COVID-19 global pandemic. The response to this pandemic is reactive, uncoordinated and the impact if this crisis is striking humanity and companies full force. (HBR, 2020). Owing to such severe consequences, both researchers and practitioners have opined that firms should adopt supply chain strategies that are resilient and transcends vulnerabilities, disruptions, and adverse changes (RETRAKalahmadi&Parast, 2016).

According to Kenya Retail sector report, (2020), there has been a subdued performance in the retail sector due to tough operating environment as the Kenyan economy is grappling with the Corona virus pandemic. Some of the players have been exiting the market due to financial woes. However, the retail sector have been sustained by positive demographics, as the Kenya population expands at an annual rate of 4.0% against a global average of 1.9% effectively increasing the need for formal retail space.

1.1   Statement of the Problem

According to Business Continuity Institute, BCI, (2013), supply chain disruptions are non-routine events that are experienced by about 75% of all organizations on a yearly basis on a global scale. In a similar and an equal weight, Chowdy and Kumar (2018) observes that about 80% of the multinational companies that experience disruptions fail within two years immediate succeeding the disruption and blamed the failure on poor disruption recovery strategies ex-post to disruption. In Kenya, studies have ranked supply chain disruptions as the third highest threats to enterprise performance improvement plans. Correspondingly, a trend analysis report have established that on average, the number of retail chains registering losses due to a wide array of supply chain disruptions have increased from 28% in 2011 to 42% in 2013 and it is projected that with the unprecedented SARS, 2019 pandemic, undoubtedly, the trend is registering an upward trajectory. The unique nature of the Retail stores such as short product cycles, low profit margins, stiff competition and demand volatility with complex supply chains (Confederation of Indian Sector, CII, 2015) compound the aforementioned disruptions facing retail supply chains. As such, retail chains have been grounded because they have not been able to adjust and or recover either proactively or reactively from the various supply chain disruptions hence pushing some of the household retail chains to insolvency and liquidation to say the least. Case points include Nakumatt, Tuskys, Uchumi, Ukwala, Choppies among others. On the flipside, some of the retail chains have leveraged on resilience strategies to remain competitive. This is associated to the influence of supply chain robustness strategy on the performance, whose empirical findings remain unknown. Interestingly, while other retail outlets are on a downward spiral, closing down due to various reasons, Naivas supermarket is defying this trend and is on an upward trend and expansion spree occupying retail stores of its previous competitors. It is against this backdrop that the researcher aimed at establishing the influence of recovery strategy on performance for Naivas retail stores. More so, although there is a plethora of research pertaining to supply chain resilience both globally and locally i.e. (Chang, Ellinger & Blackhurst 2015; Thogori, Gathenya&Kihoro, 2018; Holzhauer, 2016, Arani, Mukulu&Waiganjo, 2017) none of the reviewed studies have endeavored to establish the influence of VMI strategy on supply chain performance, which is necessary for Naivas retail stores.

1.2   Objectives of the Study
1.2.1   General Objective

To establish the influence of Supply Chain Resilience Strategies on performance of retail stores in Kenya

1.2.2   Specific Objectives

1. To establish the influence of supply chain robustness strategy on the performance of Naivas Limited Retail Stores
2. To find out the influence of supply chain flexibility strategy on the performance of Naivas Limited Retail Stores
3. To find out the influence of supply chain recovery strategy on the performance of Naivas Limited Retail Stores
4. To find out the influence of VMI strategy on the performance of Naivas Limited Retail Stores

1.3   Significance of the Study

1.3.1 Players in Retail stores

This study sought to appraise the influence of SCRes strategies on performance of Retail stores. The findings of this study can be adopted by different players in the sector. It may help the different players such as proprietors, chief executives, various line managers and knowledge workers to have a deeper understanding on the concept on the causal relationship between study variables. The output of this research may tease out the nuggets off knowledge on resilience strategies that needs to be deployed to yield into sustainability in the long term.

1.3.2   Researchers and/ Academicians

This study may contribute to the limited body of knowledge in two-fold, on both resilience strategies sand performance of Retail stores. The existing published research on SCRes is fragmented with relative disparity in

the concept, identification of its constructs and lack of clarity between the relationships of the constructs under study. This study aims at addressing this gap among other gaps.

1.3.3   Stakeholders

The study may offer actionable recommendations to diverse pockets of stakeholders such as Retail trade association of Kenya the findings of this study can be inferred to other sectors of the larger retail sector where there is homogeneity.

1.3.4   Government & Policy Makers

The government through the relevant agencies such as the Ministry of Industrialization, Kenya can use findings of the study as one of the basis of coming up with policy interventions in the retail sector.

1.4 Justification

Supply chain disruptions are non-routine events that are experienced by most organizations on a yearly basis on a global scale. In Kenya, studies have ranked supply chain disruptions as the third highest threats to enterprise performance improvement plans. Correspondingly, a trend analysis report has established that on average, the number of retail chains registering losses due to a wide array of supply chain disruptions as such, retail chains have been grounded because they have not been able to adjust and or recover either proactively or reactively from the various supply chain disruptions hence pushing some of the household retail chains to insolvency and liquidation to say the least.

Data collected shall enable retail chains to clearly understand why there is supply chain disruptions and how to better respond to these disruptions. The recommendations are valuable to the academicians and researchers in Kenya for the purposes of learning on the influence of supply chain resilience strategies on performance of retail chains in Kenya.

2.0 DATA AND METHODOLOGY

2.1   Research Design
The study adopted a descriptive research design.

2.2   Population
The unit for this study was the retail stores in Kenya. The target population under study was employees of Naivas retail stores in Kenya who are 6000. (Naivas, HR, 2019).

2.3   Sampling Frame
For purposes of this study, a sampling frame entailed the top, middle and low level employees classified on the basis of their salaries from the entire population of the 6000 employees.

2.4   Sample and Sampling Technique
Stratified random sampling technique was used to select the study sample. The Yamane formula (1967) was used to calculate the sample size

$$n= N/(1+N(e)^2)$$

Where

n=Sample Size

N=Population

e=Margin of error

Therefore;

$$n=6000/ (1+6000(0.05)^2)$$

n= 375 respondents

2.5   Data Collection Instruments
According to Mugenda and Mugenda, (2003), a questionnaire is a data collection tool that collects data over a large sample with an objective of translating the research objectives into specific questions. The study collected

primary data using a questionnaire covering a wide array of questions on the study phenomena. The questionnaire contained both open ended and closed ended questions

2.6   Pilot Test

According to Sekaran, (2008), pilot test is necessary and the validity of a study and that it is necessary for testing the reliability of data collection instruments. A pilot test was conducted using questionnaires administered to the staff of Naivas Supermarket. This constituted 10% of the respondents. The respondents that participated in the pilot study were not allowed to participate in the final study by marking them since they are few.

2.7.1   Validity of the Research Instrument

The research supervisor examined content validity and construct validity which were achieved by ensuring that the questionnaires in the questionnaire are restricted to the conceptualization of the study variables and that each metrics of the variables fall within the same construct.

2.7.2   Reliability of Research Instrument

Internal consistency method was used to gauge the consistency of the research instrument which was tested using the Cronbach's alpha statistic. According to Kenneth and Bordens (2010), higher variability is associated with less reliability in measurement. Cronbach (1951), recommends Cronbach's alpha α, of 0.7 to establish reliability.

2.8   Data Processing and Analysis

The study sought to produce both quantitative and qualitative data. According to Chan et al., (2013) data analysis entails both quantitative and qualitative methods. Questionnaires were used for main data analysis since they are easy and more effective (Krosnick, 2018). Bryman and Cramer (2009) posits that quantitative data must be coded before carrying out analysis for easy interpretation. Once the questionnaires were received from the respondents they were coded and edited for completeness and consistency. Quantitative data was analyzed by employing both descriptive statistics and inferential analysis using statistical package for social science (SPSS). Descriptive statistics comprised of measures of central tendency such as mean mode and median. Inferential Statistics will include regression analysis, correlation analysis, Analysis of Variance, F-Test.

Multiple linear regression analysis was conducted to determine the influence of Supply Chain Resilience Strategies on performance of Retail stores in Kenya.

The equation was as expressed below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

3.0 RESULTS AND DISCUSSION

3.1 Response Return Rate

The target population under study was employees of Naivas retail stores in Kenya who are 6000. Out of these employees, sample size calculation using Yamane formula (1967) resulted to a sample of 375 questionnaires which were administered to respondents using closed and open-ended questions. The results are presented as shown in Table 3.1 as follows.

Table 3. 1: Response Return Rate

Subject	Administered	Actual Response	Return Rate (%)
Respondents	375	305	81.5
Total	375	305	

A careful administration of the questionnaires led to response return of 81.3 percent, thus 305 questionnaires were fully filled and returned out of the 375 questionnaires administered.

3.2.1   Pilot Test

So as to ensure instrument consistency, a pilot study was carried out across two retail stores from which 37 respondents, which is approximately 10% of the sample respondents from the population of the study. Cronbach (1951), recommends Cronbach's alpha α, of 0.7 to establish reliability.

The findings on the instrument reliability are presented as shown in Table 3.2.

Table 3. 2 Cronbach's Alpha Coefficient

Resilience Strategies	Number of Items	Cronbach alpha
Recovery Strategy	5	0.809
Flexibility Strategy	5	0.845
Robustness Strategy	4	0.807
VMI Strategy	6	0.886
Performance	5	0.839
Overall Reliability	20	0.938

N=37

The finding in Table 3.2 on instrument reliability shows that all the instruments had reliability coefficients greater than 0.7. For instance, Recovery Strategy had a reliability value of 0.809, flexibility strategy (α=0.845), robustness strategy (α=0.807) and VMI strategy (α=0.886). The overall reliability coefficient was also above the threshold value of 0.7, which was 0.938. These findings imply that all the instruments were reliable.

3.3 Demographic Information of the Respondents

Demographic information of the respondents entailed their level of education, period worked, management level and professional qualification. The findings are presented as shown in Table 3.3 using frequency counts and percentages.

Table 3. 3 Respondents Education Level

Characteristics	Categories	Frequency	Percentage
Education	Certificate	41	13.4
	Diploma	81	26.6
	Undergraduate	178	58.4
	Postgraduate	5	1.6
Total		N=305	100.0

The findings in Table 3.3 shows that majority of the respondents, 178(58.4%) had undergraduate level of education followed by 81(26.6%) who had diploma level of education, 41(13.4%) who had certificate and 5(1.6%) who had post graduate. These findings imply that majority of the respondents had formal education and thus were eligible for giving information on retail stores.

Table 3. 4 Period Worked

Characteristics	Categories	Frequency	Percentage
Period worked	below two years	35	11.5
	3-5 years	198	64.9
	Over 6 years	72	23.6
Total		N=305	100.0

Besides the level of education, an assessment of the working period of the respondents revealed that majority, 198(64.9%) had experience of 3-5 years while 72(23.6%) had experience of over 6 years. Only 36(11.8%) respondents had worked for a period of less than two years. These findings show that majority of the respondents had a good working experience of the retail stores and therefore they knew much about the retail stores.

Table 3. 5 Management Level

Characteristics	Categories	Frequency	Percentage
Management Level	Top level	36	11.8
	Middle level	95	31.1
	Operational level	174	57.0
Total		N=305	100.0

The findings on Management level shows that majority of the respondents, 174(57.0%) were operational level employees followed by 95(31.1%) who were middle level employees. The fewest employees, 36(11.8%) were top level. Although top level managers have the most information about the operationalization of the businesses, they are rarely available for data collection. However, given experience and education of the employees, the information given was adequate.

Table 3. 6 Professional Qualification

Characteristics	Categories	Frequency	Percentage
Professional Qualification	ICT	40	13.1
	Finance	88	28.8
	Logistics	10	3.3
	Procurement	167	54.8
Total		N=305	100.0

Finally, the study findings on the professional qualification indicates that majority of the employees, 167(54.8%) were procurement officers flowed by 88(28.8%) who were finance officers. Others included ICT officers, 40(13.1%), and logistic officers, 10(3.3%). These findings imply that majority of the respondents were professionals in business secretary and therefore had adequate knowledge in supermarket matters besides working for Naivas supermarket.

3.4 Influence of Robustness strategy on the performance of Naivas Limited

An overview of the responses on robustness strategy is presented as shown in Table 3.11 using frequency counts, percentages, means and standard deviation. Values from the responses were reverse coded to reflect the respondents' expressions on a five point Likert scale.

Table 3.7: Robustness Strategy Practices

Statements on robustness strategy	N	SE	ME	GE	VGE	M	SD
We have remained effective and sustain our supply chain even when both internal and external disruptions occur	105(34.4)	43(14.1)	116(38.4)	18(5.9)	23(7.5)	2.38	1.22
We can either avoid or minimize occurrence of risks by monitoring	107(35.1)	37(12.1)	110(36.1)	38(12.5)	13(4.3)	2.39	1.20
Our business has remained resistant and ready to negative market forces	84(27.5)	42(13.8)	98(32.1)	49(16.1)	32(10.5)	2.68	1.313
We have absorbed significant level of negative impacts from recurrent risks	115(37.7)	56(18.4)	85(27.9)	35(11.5)	14(4.6)	2.27	1.208
We have maintained continuity in planning over supply chain	130(42.6)	66(21.6)	54(17.7)	42(13.8)	13(4.3)	2.15	1.232

N=305

The findings on robustness strategy are presented as shown in Table 3.7. To a moderate extend as indicated by majority, 116(38.0%), the findings shows that Naivas stores have remained effective and sustain their robustness even when both internal and external disruptions occur, which is also supported by a mean of (M=2.38) although with high standard deviation (SD=1.22). The findings also shows that the stores, according to majority of the respondents, 110(36.1%) can either avoid or minimize occurrence of risks by anticipating readiness for them, although 107(35.1%) indicated that it was not at all possible.

A mean and standard deviation however shows some positive possibility, (M=2.39, SD=1.20). Majority of the respondents, 98(32.1%) also indicated that businesses had remained resistant to negative market forces to moderate extent although 84(27.5%) indicated that they could not at all remain resistant. Forty nine, 16.1% said that it was to a great extend while 32, 10.5% indicated that it was to a very great extent.

Further findings revealed that the businesses had not at all absorbed a significant level of negative impacts from recurrent risks as indicated by majority, 115(37.7%) who were supported by 56(18.4%) with a low mean (M=2.27) and high standard deviation (SD=1.20). Finally, majority of the respondents, 130(42.6%) indicates that the retail stores did not at all maintain continuity in planning over supply chain, with a mean and standard deviations (M=2.15, SD=1.23) affirming the same. These findings imply that robustness strategy is significantly practiced among the retail stores and is of use. Shamout (2020) also confirmed the importance of this strategy and advocated for enhancement of its use.

The influence of supply chain robustness on retail stores' performance was also established using both the findings on multiple regression and simple linear regression analysis. The findings on simple linear regression analysis are presented as shown in Table 3.8. Robustness strategy scores were regressed against retail stores' performance as a single predictor variable.

Table 3.8: Influence of Robustness strategy on retail stores' performance

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					F
					R Square Change	F Change	df1	df2	Sig. Change	
1	.314[a]	.099	.096	.81063	.099	40.849	1	303	.000	
a. Predictors: (Constant), robustness strategy										

Coefficients[a]									
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	2.086	.109		19.213	.000			
	robustness strategy	.318	.050	.314	6.391	.000	.314	.314	.314
a. Dependent Variable: Performance									

The findings in Table 3.8 indicate that robustness strategy accounts 9.9% variance in retail stores' performance. After controlling for over estimation, the percentage variance reduces to 9.6% leading to shrinkage of 0.3%. The standard error of estimate was also small (0.81063) implying that the estimates were closer to the outcome. These findings were therefore significant, $F(1,303)=40.849$, p=.000, implying that the model was not by chance but as a result of good fit. Further findings on the contribution of robustness strategy on retail stores' performance were as well significant (β=.314, p=.000). This means that robustness strategy alone is a very significant predictor of retail stores' performance.

 Evaluation of several predictors as shown in Table xx revealed that robustness strategy was still a significant predictor (β.252, p=.000) implying that when the predictor is compared with other predictors, its predictive power reduces but it remains significant. Further comparison of the two models reveals that for robustness strategy as a single predictor, a one unit increase in robustness strategy leads to 0.314 unit increase in retail stores' performance. However, compared with other predictors, the findings indicate that a one unit increase in robustness strategy leads to 0.252 unit increase in retail stores' performance. Respondents were however not aware of other resilience strategies put in place or more likely to apply in their retails. However, these findings agree with other studies reviewed. These and other studies such as Thomas (2019), Scholten, (2019) and Brandon-Jones, (2014) supports the findings that robustness strategy significantly influences performance of retail stores. It can thus be firmly concluded that retail stores robust strategy has a positive influence on performance of retail stores among the Naivas supermarket retail stores,

3.5 Influence of Flexibility strategy on Performance of Naivas

The second predictor of retail stores' performance was retail stores flexibility strategy. To assess this strategy, respondents were asked to share their views on the extend of retail stores flexibility strategy on a five point Likert scale. The findings are presented as shown in Table 4.9 using frequency counts, percentages, means and

standard deviations. Reverse coding was also done to indicate the least and greatest weights of the responses on the scale.

Table 3.9:Influence of Flexibility strategy and retail stores' performance

Statements on flexibility strategy	N	SE	ME	GE	VGE	M	SD
We practice sourcing flexibility by having multiple sources of suppliers	140(45.9)	31(10.2)	64(21)	48(15.7)	22(7.2)	2.3	1.37
We effectively change the volume of our stock in response to customer demand	95(31.1)	37(12.1)	100(32.8)	50(16.4)	23(7.5)	2.57	1.29
We always change the variety of on-shelf products	162(53.1)	64(21)	44(14.4)	19(6.2)	16(5.2)	1.90	1.18
We always deal with complicated non-standard orders to meet customer specifications	176(57.7)	67(22)	43(14.1)	10(3.3)	9(3)	1.72	1.02
We always accommodate late change of orders by customers in the order processing stage.	140(45.9)	52(17)	59(19.3)	22(7.2)	32(10.5)	2.19	1.36

N=305

The findings in Table 3.9 indicates that Naivas stores did not at all practice sourcing flexibility by having multiple sources of suppliers as indicated by majority, 140(45.9%) of the respondents, who were also supported by 31(10.2%). However, 48(15.7%) of the respondents reported that it was done to a great extend while 22(7.2%) indicated that it was done to a very great extent. A mean low mean and high standard deviation (M=2.3, SD=1.37) implied that this practice was practiced although mildly with variations from mean. Further findings also indicates that the volume of stocks were changed to a moderate extend (M=2.57, SD=1.29) in response to customer demands, as indicated by majority 100(32.8%). However, according to majority of the respondents, 162(53.1%) the stores did not at all change the variety of on shelf products.

The findings further shows that the stores did not at all deal with complicated nonstandard orders to meet customer specifications according to majority, 176(57.7%) of the respondents. This was also indicated by a very low mean, (M=1.72, SD=1.02). In addition, the findings show that according to majority of the respondents, 140(45.9%) they did not at all accommodate late change of orders by customers in the order processing stage (M=1.72, SD=1.36).

Although there are weaknesses in the use of flexibility strategy, it is utilized for some extend. Its use is of significance to the retail stores and could boost performance. This is also observed by other studies such as Acharya, (2020), Liao, (2020) among others who found that flexibility strategy is adopted by firms and is a great tool for performance enhancement.

To compliment these findings, simple linear regression model was carried out in order to establish whether flexibility strategy led to better performance of retail stores. The findings are presented as shown in Table 4.10.

Table 3. 10: Influence of Flexibility Strategy on Retail stores Performance

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	
1	.276[a]	.076	.074	.82072	.076	30.734	1	303	.000	

a. Predictors: (Constant), flexibility strategy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.402	.243		5.781	.000			
	flexibility strategy	.328	.059	.276	5.544	.000	.276	.276	.276

a. Dependent Variable: Performance

The findings in Table 3.10 shows a low multiple correlation between flexibility strategy and retail stores' performance (R=.276). A squared value of the multiple correlation coefficients indicates that flexibility strategy accounts for 7.6% variance in retail stores' performance (R square=.076). Imposition of a penalty to control for overestimation reduces the percentage change in retail stores' performance accounted for by flexibility strategy to 7.4%, (Adjusted R square=.074) by a shrinkage of 0.5% which is very small. Further assessment of the model reveals a small error (0.387) implying a more optimal prediction. The model is significant, $F(1, 303)=30.734$, p=.000 ,which implies that there was a good fit.

Standardized model coefficient value is positive and significant (β=.276, p=.000) implying that flexibility strategy has a positive and significant effect on retail stores' performance. Although a slightly higher value (β=.279, p=.000), the model coefficient for the standard multiple regression model reported in Table 4.4 still supports the simple linear model on significance. These findings imply that based on a simple linear model, a one standard deviation in flexibility strategy leads to 0.276 unit increase in retail stores' performance whereas for a multiple regression model, a one standard deviation in flexibility strategy leads to .279 unit increase in retail stores' performance. These findings agree with those of Irfan, (2020) who studied on retail stores agility through process integration and supply flexibility and established that retail stores flexibility, i.e. volume and mix flexibility mediates the effect of process integration on retail stores agility which in turn influences firm's business performance. Almost similar findings were also revealed by Tiwari, (2015), Goyal and (2018) Fayezi, (2014) although through mediation. These findings therefore affirm the present findings that retail stores flexibility strategy plays a significant role in performance of the organizations.

3.6 Influence of Recovery Strategy on Retail stores' performance
The third objective of the study sought to establish the influence of recovery strategy on retail stores' performance. First, an overview of the practices on recovery strategy is presented as shown in Table 3.11 using frequency counts, percentages, means and standard deviations.
Table 3. 11: Influence of Recovery Strategy on Retail stores' performance

Statements on recovery strategy	N	SE	ME	GE	VGE	M	SD
We replace a defective product purchased by a consumer at no extra cost	129(42.3)	47(15.4)	67(22)	37(12.1)	25(8.2)	2.29	1.33
We own up to mistakes and offer apologies to affected customers	171(56.1)	28(9.2)	71(23.3)	14(4.6)	21(6.9)	1.97	1.26
We replace a defective product purchased by a consumer at no extra cost of shipping by the consumer	199(65.2)	41(13.4)	48(15.7)	4(1.3)	13(4.3)	1.66	1.06
We resolve failures when a customer returns a product and award s/he with a store credit to be applied in future purchases	163(53.4)	55(18)	56(18.4)	9(3)	22(7.2)	1.92	1.22

N=305

The findings in Table 3.11 shows that according to majority, 129(42.3%) of the respondents, the stores management did not at all replace the wrong merchandise along with apologizing to the customer, which was also reported by 47(15.4%) of the respondents as to a small extend. A low mean and high standard deviation (M=2.29, SD=1.33) confirmed that it was a low practice although with different ratings. In addition to these findings, it also emerged that the retail stores did not at all provide customers with additional compensation such as allowing the consumer to keep the mistakenly shipped consignment through corrections according to majority, 171(56.1%) of the respondents, as well as a mean (M=1.97) and standard deviation (SD=1.26) confirming the findings.

According to Chowdhury and Kumar (2020) findings, recovery strategy is important and useful to a firm. The findings show the extend of use of this strategy, which is appealing although not very satisfactory. Continued use of this strategy may enhance performance as confirmed by other studies such as Messina, Barros, Soares, and Matopoulos, (2020) and Chen (2019) who also encourages use due to its importance.

In addition to the findings, it also emerged that the stores did not at all replace a defective product purchased by a consumer at no extra cost of shipping by the consumer as reported by majority, 199(65.2%) supported by a mean of 1.66 and standard deviation of 1.06. Finally, the findings from majority of the respondents, 163(53.4%) confirmed that the retail stores rarely resolved failures when a customer returns a product and award s/he with a store credit to be applied in future purchases (M=1.92, SD=1.22). These findings imply that recovery strategy plays a role in retail stores of the stores although to a small extend.

Further findings to answer the study objective were also presented using regression model. A comparison between simple linear regression results and standard multiple regression findings were also presented. The findings are presented as shown in Table 3.12 for simple linear regression model.

Table 3. 12: Influence of Recovery Strategy on Retail stores' performance

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	.594[a]	.353	.351	.68700	.353	203.209	1	303	.000

a. Predictors: (Constant), recovery strategy

Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.	Correlations Zero-order	Partial	Part
1	(Constant)	1.830	.072		25.365	.000			
	recovery strategy	.467	.033	.594	14.255	.000	.594	.594	.594

a. Dependent Variable: Performance

The findings in Table 3.12 shows that recovery strategy accounts for 35.3% variance in retail stores' performance with an adjusted variance of 35.1%. The remaining 64.9% was accounted for by other variables not included in the model. Model significance was also obtained, F (1,303) =203.209, p=.000, implying that the model was significant and reflects the true population value. Examining model coefficient, the findings shows that recovery strategy has a unique significant contribution on retail stores' performance (β=.594, p=.000) implying that for every one standard deviation increase in recovery strategy practices, retail stores' performance increases by 0.594 units.

In addition to these findings, findings in Table xx on standard multiple regression model indicated that recovery strategy had the strongest unique contribution on retail stores' performance when compared to other predictors (β=.521, p=.000), although slightly lower than that for simple linear regression model. This means that for a one standard deviation increase in recovery strategy, there is a one unit increase in retail stores' performance. Stuides by Messina, Barros, Soares, and Matopoulos, (2020) also supports that disruption management is a process that starts with disruption, goes through actions undertaken to recover from it and ends with a complete recovery and consequent redesign of actions to improve retail stores processes. This is also echoed by Chen, (2019), who discovered that recovery strategy is a sub-component of retail stores resilience strategy that encompasses strategies relating to preparedness, mitigation strategies, stabilization strategies, and recovery strategies thus supporting the present findings. It can thus be concluded that recovery strategy is very important to the performance of retail stores among the retail retail stores.

3.7 Influence of VMI Strategy on Retail stores' performance

The final predictor of the model was the VMI strategy, which was also measured on a five point Likert scale. The study therefore sought to establish the extent to which it was practiced as rated by the respondents. The findings on VMI strategy are presented as shown in Table 3.17 using frequency counts, percentages, means and standard deviations.

Table 3. 13: VMI Strategy on perrfomance

Statements on VMI strategy	N	SE	ME	GE	VGE	M	SD
We have been sharing demand information to our suppliers	168(55.1)	46(15.1)	71(23.3)	4(1.3)	16(5.2)	1.87	1.14
We have use VMI terminal to relay information to our various trading partners	162(53.1)	70(23.0)	38(12.5)	22(7.2)	13(4.3)	1.87	1.15
We have been using VMI technologies to monitor goods on store	157(51.5)	74(24.3)	65(21.3)	5(1.6)	4(1.3)	1.77	0.93
We have been having joint decision making between the retailer and our suppliers regarding to inventory management	154(50.5)	40(13.1)	62(20.3)	32(10.5)	17(5.6)	2.08	1.28

We have been having collaborating with our strategic suppliers	194(63.6)	54(17.7)	38(12.5)	15(4.9)	4(1.3)	1.63	0.97

N=305

The findings in Table 3.13 indicates that according to majority, 168(55.1%) of the respondents, the retails stores have not at all been sharing demand information to our suppliers. However, 46(15.1%) indicated that it was done to a small extend while 71(23.3%) showed that it was done to a moderate extend. A mean of 1.87 and standard deviation of 1.14 also confirmed the findings. Furthermore, the findings shows that the retails stores did not at all use VMI terminal to relay information to our various trading partners as indicated by majority, 162(53.1%) of the respondents with 70(23.0%) indicating that it was to a small extend. This was also supported by a mean of 1.87 and standard deviation of 1.15.

Studies have also established that VMI strategy is highly used and enhances performance, Guimaraes, de Carvalho, & Maia, (2013), Sui, (2010) and others. It is therefore important to encourage organizations to adopt this strategy due to its effectiveness in enhancing resilience and therefore after organizational performance.

Further findings indicate that the retail stores have not at all been using VMI technologies to monitor goods on store as indicated by majority, 157(51.5%) of the respondents whereas 74(24.3%) indicated that it was done to a small extend. Assessment of the mean revealed that the practice was very low (M=1.77, SD=.93). Majority of the respondents, 157(51.5%) also reported that retail stores have not at all been having joint decision making between the retailer and their suppliers regarding to inventory management, which had a low mean and high standard deviation (M=2.08, SD=1.28). Finally, the findings shows that from the majority of the respondents, 194(63.6%) retail stores have not at all been having collaboration with their strategic suppliers, which is confirmed by a low mean (M=1.63, SD=.97). These findings imply that there are efforts by the retail stores to apply the VMI strategy although with small success.

Further findings on the influence of VMI strategy on performance of retail stores was also presented and compared with the standard multiple regression analysis results. The findings are shown in Table 3.14 as follows.

Table 3. 14: Influence of VMI Strategy on Retail stores' performance

Model Summary										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.339[a]	.115	.113	.80320	.115	48.543	1	303	.000	

a. Predictors: (Constant), VMI strategy

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	1.887	.127		14.823	.000			
	VMI strategy	.315	.045	.339	6.967	.000	.339	.339	.339

a. Dependent Variable: Performance

The findings shows that there is a low multiple correlation coefficient between VMI strategies and retail stores' performance (R=.339). The coefficient of determination is however significant, R square=.115, F(1,303)=48.543, p<.05, implying that VMI strategies accounts for 11.5% variance in retail stores' performance. After shrinkage, the findings indicate that VMI strategies accounts for 11.3% variance in retail stores' performance. It can be noted from the model that VMI strategies only explains 11.5% leaving 88.5% to be accounted for by other factors. In addition to these findings, the results on the model coefficients shows that VMI strategies had a weak but significant contribution on retail stores' performance (β=.339, p<.05). This means that for every one standard deviation increase in VMI strategies, there is 0.339 unit increase in retail stores' performance.

Since the results are positive and significant, the null hypothesis was rejected and an alternative hypothesis adopted stating that "There is no positive and significant relationship between VMI strategies and retail stores' performance of Naivas retail stores". It is imperative to note that VMI strategies although has a weak contribution, its effect is positively significant and therefore it stands out a potential predictor of retail stores'

performance. This is especially supported by Table 4.4 results which indicated that its feature importance still remained significant even after comparison with other predictors (β=.151, p<.05). These findings are in line with previous findings on almost similar discipline such as those of Kauremaa et al., (2009), Kros, and Nadler, 2016), among other studies who associate positive performance of retail stores with VMI. This implies that VMI when well-practiced is capable of improving performance of retail stores.

3.8 Performance of Retail Stores in Kenya

Performance indicators of Naivas limited retail stores were gauged using questionnaire response from the respondents. Among the variables or indicators were perfect order fulfillment, cash cycle times, reliable delivery of goods and effectiveness in asset utilization. The findings are presented as shown in Table 3.15 using frequency counts, percentages, means and standard deviations.

Table 3.15: Performance of Naivas Limited Retail Stores

Statements on performance of Naivas limited	N	SE	ME	GE	VGE	M	SD
Adoption of SC resilience strategies have resulted into perfect order fulfilment	216(70.8)	31(10.2)	46(15.1)	4(1.3)	8(2.6)	1.55	.97
Adoption of SC resilience strategies have increased Naivas limited cash to cash cycle times	221(72.5)	36(11.8)	36(11.8)	4(1.3)	8(2.6)	1.50	.94
Adoption of SC resilience strategies have reduced total costs	205(67.2)	40(13.1)	30(9.8)	14(4.6)	16(5.2)	1.68	1.15
There is reliable delivery of goods due to adoption of SC resilience strategies	41(13.4)	68(22.3)	146(47.9)	28(9.2)	22(7.2)	2.74	1.04
As a result of SC resilience adoption, there is effectiveness in asset utilization	67(22)	112(36.7)	108(35.4)	14(4.6)	4(1.3)	2.27	.90

N=305

The findings in Table 3.15 shows that adoption of SC resilience strategies for perfect order fulfillment was not at all done as indicated by majority of the respondents, 216(70.8%) with 31(10.2%) indicating that it had resulted into perfect order fulfillment to a small extend and 46(15.1%) to a moderate extend. A mean of 1.55 and standard deviation of 0.97 revealed that this practice was not yet adopted fully with majority agreements. The findings further shows that majority of the respondents, 221(72.5%) found that adoption of SC resilience strategies have not at all increased Naivas limited cash cycle times. A mean and standard deviation (M=1.50, SD=.94) also confirmed these findings.

The findings on cost reduction indicated that adoption of SC resilience strategies had not at all reduced total costs as revealed by majority, 205(67.2%) of the respondents with a low mean and high standard deviation (M=1.68, SD=1.15). Reliable delivery of goods, as reported by majority of the respondents, 146(47.9%) was to a moderate extend, due to adoption of SC resilience strategies. This was also confirmed by a moderate mean (M=2.74, SD=1.04) with a high standard deviation indicating some variations in the findings. Finally, the findings shows that as a result of SC resilience adoption, there is to a small extend 112(36.7%) and moderate extend, 108(35.4%) effectiveness in asset utilization. This was confirmed by a mean of 2.27 and standard deviation of 0.90.

Summary Results on Influence of Supply Chain Resilience Strategies on Performance of Retail stores

The overall objective of the study was to establish the influence of supply chain resilience strategies on performance of retail stores in Kenya. First, Pearson Product moment correlation was run to establish the correlation between supply chain resilience strategies and performance of retail stores in Kenya. The findings are shown in Table 3.16 that follows.

Table 3. 16 Correlation between Performance and Resilient Strategies

Correlations		Performance	robustness strategy	flexibility strategy	recovery strategy	VMI strategy
Performance	Pearson Correlation	1				

	Sig. (2-tailed)					
	N	305				
robustness strategy	Pearson Correlation	$.357^{**}$	1			
	Sig. (2-tailed)	.000				
	N	305	305			
flexibility strategy	Pearson Correlation	$.238^{**}$	$-.173^{**}$	1		
	Sig. (2-tailed)	.000	.002			
	N	305	305	305		
recovery strategy	Pearson Correlation	$.570^{**}$	$.192^{**}$	-.002	1	
	Sig. (2-tailed)	.000	.001	.967		
	N	305	305	305	305	
VMI strategy	Pearson Correlation	$.269^{**}$	.097	$.244^{**}$	$.117^{*}$	1
	Sig. (2-tailed)	.000	.091	.000	.041	
	N	305	305	305	305	305

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

The findings in Table 3.16 shows that the strongest correlation exists between performance of retail stores and recovery strategy (r=.570, p<.05) followed by performance and robustness strategy (r=.357, p<.05), then performance and VMI strategy (r=.269, p<.05) and finally performance and flexibility strategy (r=.238, p<.05). All the correlations were positive and significant although for moderate for recovery strategy and performance and weak for the other resilience strategies and performance.

 The objective was achieved through the following model,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

By simply regressing performance of retail stores on the four predictor variables which were robustness, flexibility strategy, recovery strategy and VMI strategy using standard multiple regression model. Using the linear model, the findings are presented as shown.

$$Y = -.283 + 0.255(robustness) + 0.279(flexibility) + 0.521(recovery) + 0.151(VMI)………….4.2$$

As shown in equation 3.2, it is clear that there is independence in predicting retail stores performance. Without adding the predictors, retail stores' performance would drop by a constant of -0.283. However, predictors improve the model such that addition of one unit of robustness strategy in the model improves performance by 0.255 units. Similarly, one unit of each of the other predictors improves performance by 0.279 units for flexibility, 0.521 units for recovery and 0.151 units for VMI strategy. Using model standardized coefficients for easier comparison, the findings are presented as shown in Table 3.17.

Table 3. 17: Model Summary Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics R Square Change	F Change	df1	df2	Sig. F Change
1	$.719^a$	.517	.512	.59591	.517	98.954	4	300	.000

a. Predictors: (Constant), VMI strategy, robustness strategy, recovery strategy, flexibility strategy

There was a high multiple correlation between supply chain resilience strategies and retail stores performance (R=0.719). After squaring the multiple correlation coefficient, a coefficient of determination value was obtained, (R square=0.517) which when adjusted to control for over estimation results to adjusted R square value of 0.512. If this value is multiplied by 100%, it yields 51.7%, implying that supply chain resilience strategies account for 51.7% variance in retail stores performance. Due to the models small standard error value of the estimate (Std. Error of the Estimate=.5959) and large F change value, F(4,300)=98.954, the model is said to have a good fit, whose significance is further supported at 0.05, (p=.000). This means that retail stores performance resilience strategies accounts for a significant variance in retail stores performance. The model standardized coefficient results are also presented as shown in Table 3.18.

Table 3.18: Summary Model Coefficients on Influence of Resilience Strategies on Performance

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	-.283	.209		-1.353	.177			
	robustness strategy	.255	.038	.252	6.720	.000	.314	.330	.243
	flexibility strategy	.331	.046	.279	7.228	.000	.276	.352	.261
	recovery strategy	.410	.029	.521	13.966	.000	.594	.588	.505
	VMI strategy	.140	.036	.151	3.906	.000	.339	.199	.141
a. Dependent Variable: Performance									

The model in Table 3.18 indicates that recovery strategy had the strongest unique contribution to retail stores performance, (β=.521) which is significantly different from zero, t(375)=13.966, p<.05. This means that for every one unit increase in recovery strategy resilience, there is 0.521 unit increase in retail stores performance. Flexibility strategy resilience had the second strongest unique contribution on retail stores' performance (β=.279) that was significant, t(375)=7.228, p<.05 implying that for every one unit increase in stores flexibility strategy, there was 0.279 unit increase in retail stores' performance. The findings further shows that robustness strategy as well as VMI strategies positively and significantly contributed to retail stores' performance with values of (β=.252, p<.05) and (β=.151, p<.05) respectively.

These findings imply that for a one unit increase in robustness of the stores, there is 0.252 unit increase in retail stores' performance and for each one unit increase in in VMI strategy, there in a 0.151 unit increase in retail stores' performance. These findings agree with those by Shamout, (2020) who established that supply chain innovations mediate supply chain analytics and robustness strategy thus supporting its performance. Liu (2019) on robustness strategy also established that robustness proactively reduces supply chain vulnerabilities. Acharya, (2020) on the other hand found that flexibility dimensions significantly influenced supply chain performance while Chen, (2019) concluded that technical recovery, capacity recovery, and business/operations recovery positively influences performance. Findings are also present in the subsequent sections as per the objectives of the study with discussions involving both the multiple regression results as well as the simple linear regression findings.

4.0 CONCLUSION

4.1 Summary of Findings

4.1.1 Influence of Robustness Strategy on performance of retail stores of Naivas Retail Stores

The first objective of the study sought to establish the influence of retail stores robustness strategy on performance of retail stores of Naivas Retail Stores. The findings revealed that robustness strategy is practiced although to a small extend. Using both simple linear regression models, it emerged that there was a weak but significant multiple correlation between robustness strategy and retail stores' performance. The findings also established that robustness strategy was a significant predictor of retails stores performance of Naivas Retail Stores. These findings compared well with other almost similar findings.

4.1.2 Influence of Flexibility Strategy on performance of retail stores

The second objective of the assessed the influence of flexibility strategy on performance of retail stores in Kenya. From the findings, it emerged that flexibility strategy was poorly practiced. In fact, one of the practices that was on the positive limelight was change of the stock volume in response to customer needs, which was moderately practiced. However, there was a positive and significant multiple correlation between the flexibility strategy and performance of the retail stores. Simple and multiple linear regression models revealed that flexibility strategy had a significant influence on performance of retail stores. The findings also confirmed that flexibility improved the model much more when compared to other variables.

4.1.3 Influence of Recovery Strategy on performance of retail stores

The study sought to establish the influence of recovery strategy on performance of retails stores. From the findings, it emerged that there was weak correlation between recovery strategy and performance of retail stores. However, this correlation aligned well with performance. In addition, the findings revealed that recovery strategy has a significant influence on performance and accounted for variance as compared to other predictors. These findings also aligned well with other similar research findings from the literature review.

4.1.4 Influence of VMI Strategy on performance of retail stores

The final objective of the study determined the influence the influence of VMI strategy on performance of retail stores. It was established that out of the items constructing VMI strategy, joint decision making was fairly practiced. However, there was a weak correlation between VMI strategy and performance although there was also as significant effect on performance.

4.2 Conclusion

The study having established impartial practice of robustness strategy among the retail stores of Naivas Retail Stores. It is concluded that there is robustness strategy is not prioritized among the retails of Naivas Retail Stores. Besides, there is little that it can account for on performance although it is a very significant predictor of performance of the retail stores.

From the second objective of the study, it emerged that flexibility strategy supported performance of retail stores retail stores. However, it can be noted that there is poor practice of flexibility strategy among the retail stores. In addition, flexibility is a significant predictor but does not account much variance leaving out more of the variance explained by other factors. It can however be concluded that despite the low practice of flexibility and setbacks, it has a significant influence on performance of the retail stores.

Recovery strategy is practiced poorly but it aligns well with performance of retail stores of Naivas Retail Stores. There is a positive significant multiple correlations between the two variables implying that performance heavily relies on recovery strategy. Besides, recovery strategy has positive effect on performance, implying that it is a strong and significant predictor of performance.

It can be concluded from the third objective of the study, which sought to establish the influence of VMI strategy on performance of the retail stores of Naivas Retail Stores that VMI strategy has a significant positive influence on performance. There is also a significantly positive relationship between the two variables. However the effect is weak, implying that the alignment between VMI strategy and Performance is weak but positively promising.

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