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The Effect of E-Supply Chain Management Perceived Performance On End User Satisfaction: The Case Of Heineken Brewery Company Share Addis Ababa Branch

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Abstract

This study aimed to examine the effect of the perceived performance of e-supply chain management on customer satisfaction in the case of Heineken Brewery Company in Addis Ababa. This study used mixed research approach and descriptive and explanatory research design. In this study, a total of 92 questionnaires were distributed to managers and experts. The finding of the study indicates that the downward supply chain is more reliable and flexible than the upstream supply chain. The e-supply chain operation of the case brewery was perceived high. The study also found the gap related to joint planning, forecasting and sharing of e-supply chain information of the case brewery with their suppliers and customers. Thus, it suggest that the company may effectively use predictive analytics as it is a natural complement to traditional software and processes and predictive systems can provide information about what will happen and also why something happened and what should be done to resolve performance problems.

Keywords: 1. E-Supply Chain management 2. Performance 3. Customer Satisfaction 4. Software.

1.0 Introduction

Effective execution of supply chain has become a potentially valuable way of improving the organizational performance by getting competitive advantage (Duong, Truong., Sameiro, Sampaio., Fernandes., Vilhena and Yadoh, 2021). E-

supply chain management integrated management of business links, information flows (Osayuwamen O., 2016). It essentially requires a total systems view of the association in the chain that work as a team efficiently to generate customer satisfaction at the endpoint of deliverance to the consumer. Consequently, interconnected chain reduces the cost and increase customer satisfaction (Chow, C., 2014)). It is found on the base of above mentioned literatures, one can recognize that supply chain incorporation, system thinking and performance have a noteworthy impact on the performance and competitiveness of companies. Consequently, supply chain integration have direct relation with customer satisfaction are under researched for the brewery industry sector across the world (Flynnetal,2021; Zhouetal,2011 and Mentzerand, 2009) predominantly in Ethiopia which is at growing stage.

Even if the industry is attracting multinational business companies with different mode of entry, the competition for these substitute products seems tough and aggressive promotional and marketing efforts are becoming high. In this regard, the state-of-the-art e-supply chain management plays irreplaceable role as a competitive weapon in such a highly competitive and growing brewery industry. Thus, managing the supply chain in this business environment has a major impact on performance of all parties involved in the chain. As result, this study was intended to performance of e-supply chain management and relation to customer satisfaction in the brewery industry in Ethiopia. The Heineken Family entered the beer business in 1864, when Gerared Andriaan. Heineken bought a brewery in the heart of Amsterdam over the past 140 years three generation of the Heineken family built and expand the brand and the company in Europe and around the world.

1.1. Statement of the Problem

Abdirad, Maryam, and Krishna K. (2020) in their studies found that business units are looking for integrate their global business partners as a result of increasing awareness about the financial and non–financial impact of e-supply chain management processes on business units in particular. In Ethiopia, notion of e-supply chain management and measuring its performance for development is at the infant stage except only few multinational and international companies investing in Ethiopia. Most studies like Garver, Michael S. (2019), Hong, Wei, Changyuan Z., Linhai W., and Xujin P.. (2019) assessed that “the e-supply chain management performance were conducted on manufacturing companies in the developed countries and very few in developing countries, like Ethiopia. As a result, there was little insight about the performance of e-supply chain management in the brewery companies of Ethiopia”. This knowledge gap in the subject of this study in this competitive industry caused the researchers to incline for conducting this research study.

In view of this, there was less insight about the level of integration and collaboration with supply chain upstream and downstream partners, supply chain reliability, responsiveness, agility, cost effectiveness, inventory management efficiency as well as effectiveness, and ICT utilization in the e-supply chain management in the case brewery companies. The intention of this research study is to investigate and analyze the performance e-supply chain management practice focusing on the level of supply chain integration and collaboration with the chain partners, the responsiveness, reliability, agility, and cost and inventory management efficiency and effectiveness of the e-supply chain management practices.

Despite the role of e-supply chain management as a competitive tool, the supply chain operational excellence in the brewery in Ethiopia is under researched and there is knowledge gap how well is the performance e-supply chain management practice in Ethiopia. Consequently, this study was focus on investigating the performance of e-supply chain management practice in the case of Heineken brewery company located in Addis Ababa in terms of their teamwork and incorporation with their suppliers and B2B customers, supply chain reliability, responsiveness, flexibility and supply chain operational cost as well as ICT utilization in e-supply chain management with limited scope.

2.1 Literature Review

E-SCM is particularly defined by Margaret (2017) as the discipline that manages supplies and processes through all of the stages of a project, product or business deliverable. In their study Khan, Mukaram A., Syed S., and Maria M. (2019) stated that the idea of E-supply chain management (e-SCM) is based on two interior ideas that involved in practically each manufactured goods that reaches to an end consumer represents the cumulative attempt of manifold organizations.

Three levels of E-supply chain management are strategic, tactical, and operational. The decisions that are made with regards to the supply chain should reveal the on the whole corporate policy that the organization is adopting. The strategic supply chain processes that management has to rely upon were covering the girth of the supply chain (Martin, 2021). When the strategic supply chain is optimized, its customer's desires from the company are well meet (Kim, Changhee and Hyun J., 2019). E-Supply chain strategy is an iterative process that evaluates the cost-benefit trade-offs of operational components (Qi, & Sheu, 2011).

Martin (2021) put the term "customer" as a complex concept in relation to supply chains because there are multiple customers with different stakes in the process. Customer focus is to meant to the end user, the consumer of the product. The supply chain strategy is also stated as forecast-driven enterprise. This strategy is one in which the nucleus firm,

typically their manufacturer, utilizes a forecast, an estimate of future demand, as the basis of its organizational strategy. It is difficult to know what customer requirements were be from day to day, month to month, quarter to quarter, and others (Sener, Abdurrezzak, Mehmet B., Asil O., Mutlu Y., and Bayram Y., 2019).

Two categories of Supply chain performance measurements are qualitative measures (like satisfaction of customer and product quality) and quantitative measures (like lead time, response time, flexibility, supply utilization, delivery performance, etc.). Improving performance of supply chain needs a multi-dimensional strategy that addresses how the organization was serve up miscellaneous customer wants (Estampea, 2013). Mellat P. (2013) put in writing that "performance measurement is generally defined as the process of quantifying the efficiency and effectiveness of action". Gopal & Thakkar (2012) outlines the non-financial performance measures of supply chain that are related with four types of customer service levels, similar to order fill rate, cycle time or lead time, stock out rate, back order level and delivery probability is the end-to-end delay in a business process for every organization, inventory Levels and SC Resource Utilization.

2.1.1.1 SCOR Model Metrics and Performance Measurements

Sarah (2018) auxiliary founds the three levels used for measuring performance of supply chain. According to Ambe & Badenhorst (2011), there are four SCOR finest practices for a process that involves new technology, knowledge or new approaches to organizing processes. Sarah (2018) more over affirmed that SCOR spotlight the customer interactions. Sintayehu (2016) learning on Ethiopia aimed to get in-depth insight about the supply chain performance in the case breweries industries. This study adopted the multiple case study research strategy found that the as compare to upstream supply chain downward supply chain is more reliable and flexible. The supply chain operation of the case breweries was perceived high.

To check the ability of the supply chain, and its members as a whole agility is considered as the core element (Duarte & Machado, 2011). Cost reduction by operating the basic processes are the base of a lean supply chain that is concerned with a minimum of waste (Hugo, 2011). SCOR model as the base model, present study used agility, information technology utilization, reliability, integration with supplier's, responsiveness, supply chain operational cost, inventory management practice, and integration with customers as independent variable and customer satisfaction as dependent variable.

3.1 Specific Objectives: the specific objectives of this study are:

- To examine the effect of E-SCM Reliability on customer satisfaction
- To examine the effect of E-SCM Responsiveness on customer satisfaction
- To test the effect of E-SCM agility on customer satisfaction

- To examine the effect of information technology utilization in E-SCM on customer satisfaction
- To examine the effect of supply chain operational cost on customer satisfaction
- To analyze the effect of inventory management practice on customer satisfaction
- To analyze the effect of integration with suppliers on customer satisfaction
- To evaluate the effect of integration with customers on customer satisfaction

3.2 The Conceptual Framework of the Study

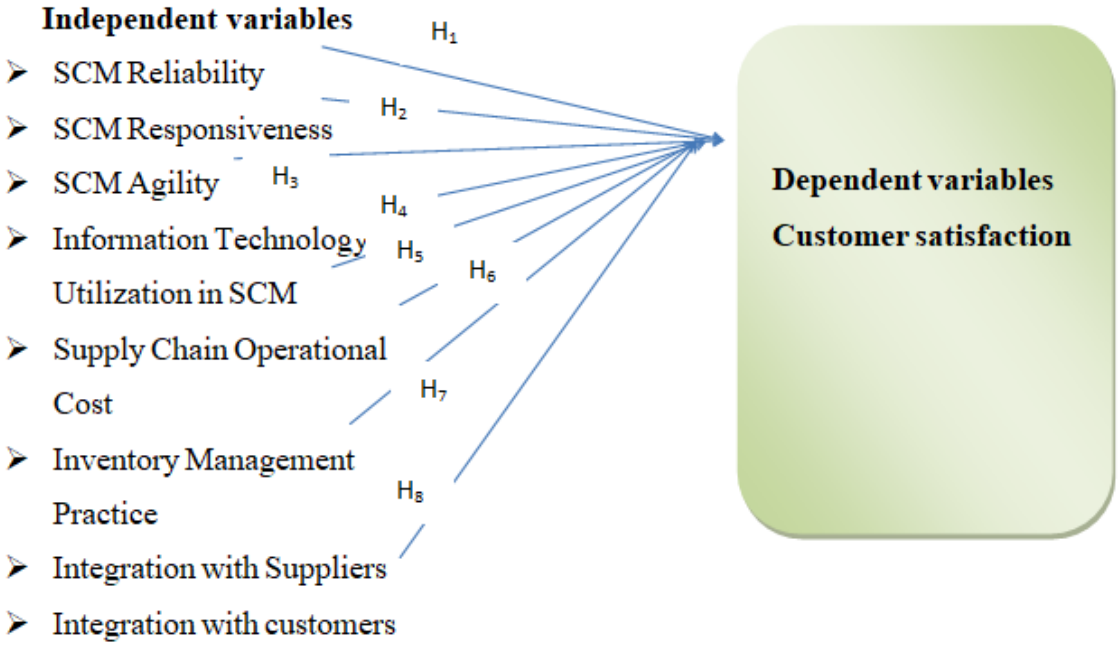


Figure 1.1 Conceptual Framework of the Study

RESEARCH DESIGN AND METHODOLOGY

4.1 Description Area of Study

The research area of this study is focus on Heineken Brewery industry, established in 1873, located in Addis Ababa, capital city of Ethiopia, the country's , manufacturing, commercial and cultural center.

4.2 Research Approach and Research Design

Present study adopted the mixed research approach containing the both quantitative and qualitative. Strategy to conduct research is framed on base of by research questions (self-administration) and objectives. So that survey strategy is adopted.

4.3 Population and Sampling Design

The total population size of this study is operational managers working at Brewery Company which are 118 and Sample size is 92.

Simplified Yamene (1967) formula for proportions*

$$n = \frac{N}{1 + N * (e)^2}$$

* 95% confidence level and e = 0.5 are assumed

Therefore, proportional sample size from each stratum was calculated by using the following formula.

$$ni = \frac{n * Ni}{N}$$

Where: ni= sample size for individual departments Ni= the total number of employees in each departments/stratum, N=the total number of population in the study and n= the total sample size for selected stratum.

Table 1:1. Sample Size Determination

Strata(Departments)	**Total population of each stratum**	**Sample size of each Stratum**
Sourcing	**19**	**15**
Production	**20**	**15**
Transportation	**22**	**16**
Sales&Marketing	**22**	**16**
Warehouse & Inventory Management	**20**	**15**
Supply chain partners	**15**	**15**
Total	**118**	**92**

Source: (questionnaire, 2021)

4.4 Validity and Reliability

Table 1.2: Reliability test results

Supply chain performance variables	**Items**	**Cronbach's alpha**
Integration With Strategic Suppliers	5	0.788
Integration With Strategic Customers	6	0.813
Information Technology In E-SCM	8	0.789
Supply Chain Reliability	5	0.777
Supply Chain Responsiveness	5	0.771
Supply Chain Agility	6	0.709

SupplyChain Management Cost	7	0.877
InventoryManagement	10	0.826
Customer Satisfaction	4	0.854
Overall reliability test	56	0.869

Source: (SPSS Output, 2021)

The above table showed the reliability test result. As shown the above table, all the variables are had Cronbach's Alpha of more than 0.75 and hence the research instrument was reliable and valid.

4.5 Correlation Analysis

Correlation analysis was done to achieve the study specific objectives which were to establish the effect of perceived supply chain performance practices determinant namely; E-SCM Reliability, E-SCM Responsiveness ,E-SCM Agility, Information Technology Utilization in E-SCM, Supply Chain Operational Cost, Inventory Management Practice , Integration with Suppliers and Integration with customers on Customer satisfaction.

Table 1.3 Correlation test result

		Customer Satisfaction
Integration With Suppliers	Pearson Correlation	**.548****
	Sig. (2-tailed)	**.000**
Integration With Customers	Pearson Correlation	**.598****
	Sig. (2-tailed)	**.000**
Information Technology Utilization in E-SCM	Pearson Correlation	**.609****
	Sig. (2-tailed)	**.000**
Supply Chain Reliability	Pearson Correlation	**.537****
	Sig. (2-tailed)	**.000**
Supply Chain Responsiveness	Pearson Correlation	**.429****
	Sig. (2-tailed)	**.000**
Supply Chain Agility (Flexibility & Adaptability	Pearson Correlation	**.618****
	Sig. (2-tailed)	**.000**
E-supply chain management Cost	Pearson Correlation	**.426****
	Sig. (2-tailed)	**.000**
Inventory Management Practice Performance	Pearson Correlation	**.436****
	Sig. (2-tailed)	**.000**
Customer Satisfaction	Pearson Correlation	1
	Sig. (2-tailed)	

Source: (SPSS Output 2021)

Based on the above table the result of correlation matrix between each eight building blocks of supply chain performance all variables there is genuine relation between each other and with customer satisfaction. As shown by the above table, the relation between integration with suppliers (SSI) and customer satisfaction is moderately correlated with a correlation coefficients of r=.548 and significant Sig. (2-tailed) = .000 as sited by (Gopal&Thakkar, 2012) to interpret the strengths of relationship between variables. Their guidelines suggested that the classification of correlation of the correlation coefficient (r) as 0.1 - 0.29 is week; 0.3 - 0.49 is moderate; and = > 0.5 strong. Similarly, the relation between integration with customers (SCI) and customer satisfaction is moderately correlated with a correlation coefficients of r=.598 and significant Sig. (2-tailed) = .000 as per above interpretation. More meaningfully, the relation between Information Technology Utilization in E-SCM and customer satisfaction is moderately correlated with a correlation coefficients of r=.609 and significant Sig. (2-tailed) = .000 based on the above interpretation. Regarding the others, the relationship between supply chain reliability and supply chain agility and customer satisfaction are moderately correlated with of r=.537 and r=.618 respectively.

There are also moderate correlations for supply chain responsiveness, e-supply chain management cost and inventory management practice performance and customer satisfaction of r=.429, .426 and .436 respectively and significant Sig. (2-tailed) = .000. Integration with suppliers (SSI) has a significant positive relationship with on customer satisfaction with correlation coefficients of r=0.548. The findings revealed that ICT utilization (ICT) has a positive significance relationship with customer satisfaction; this clearly indicates that when the ICT utilization practices increases. The findings also show that increase of supply chain reliability practices was greatly improve customer satisfaction.

To sum up; as we have seen from the above correlation matrix the independent variables has a direct relationship with the dependent variable (customer satisfaction) due to their strong relation. This implies that when the increasing of one practice determinant of transport directly increasing the performance of logistics and the vises-verse is also true. Correlation analysis was used that measures the relationship between two items independent variables and dependent variable. The resulting value (called the "correlation coefficient") shows if changes in one item was result in changes in the other item. A pertinent interpretation was given based on this analysis. When comparing the correlation between two items, one item is called the "dependent" item and the other the "independent" item. The goal is to see if a change in the independent item was result in a change in the dependent item.

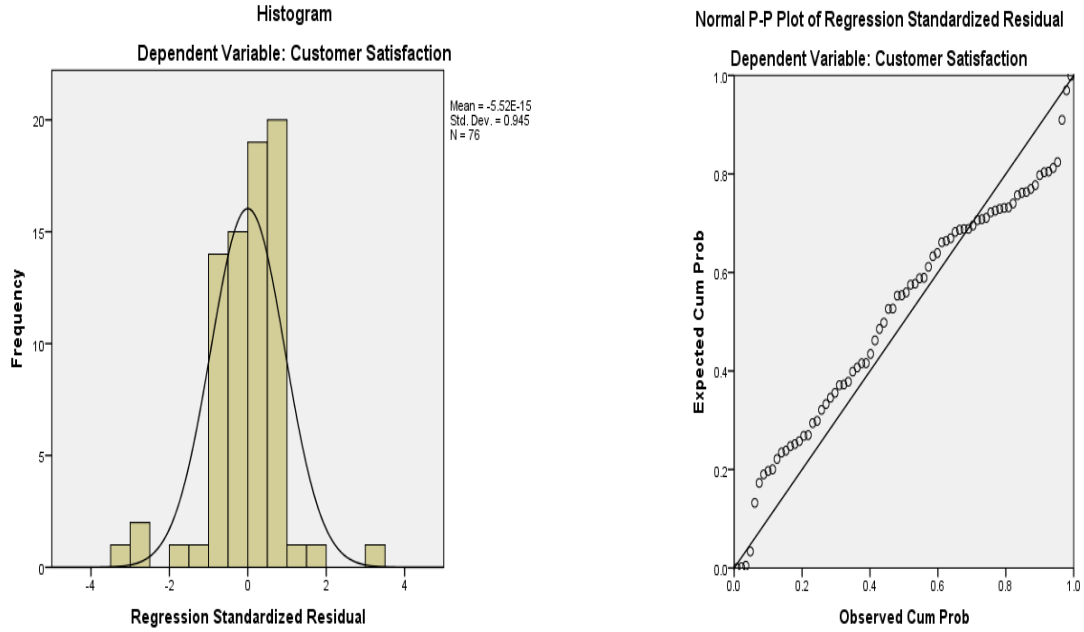
4.6 Regression Analysis

4.6.1 Assumptions of Multiple Regression Mode Analysis

When running a Multiple Regression, there are several assumptions that we need to check our data meet, in order for our analysis to be reliable and valid. The following assumptions was help us how they can be tested using SPSS.As clearly explained by statistician report on regression analysis (John, 2007), it is important to make sure that any violations of the assumptions when writing up the results of the multiple regression analysis should be fulfill the following six main assumptions. In this case:

1. **Assumption:** The relationship between the independent and dependent variables is linear.
2. **Assumption:** Having no Multicollinearity in your data. Analysis of co linearity statistics show this assumption has been met, as VIF scores were well below 10, and tolerance scores above 0.2 (statistics = 1.36 and .74 respectively).
3. **Assumption**: Found independent residuals; this can be done via The Durbin-Watson statistic. IT shows that this assumption had been met, as they obtained value was close to 2
4. **Assumption**: The variance of the residuals is constant.
5. **Assumption:** The values of the residuals are normally distributed.

A) Normality Test and Linerity Test



Source: (SPSS Output 2021)

Figure 1.2 Histogram and Normal P-P Plot

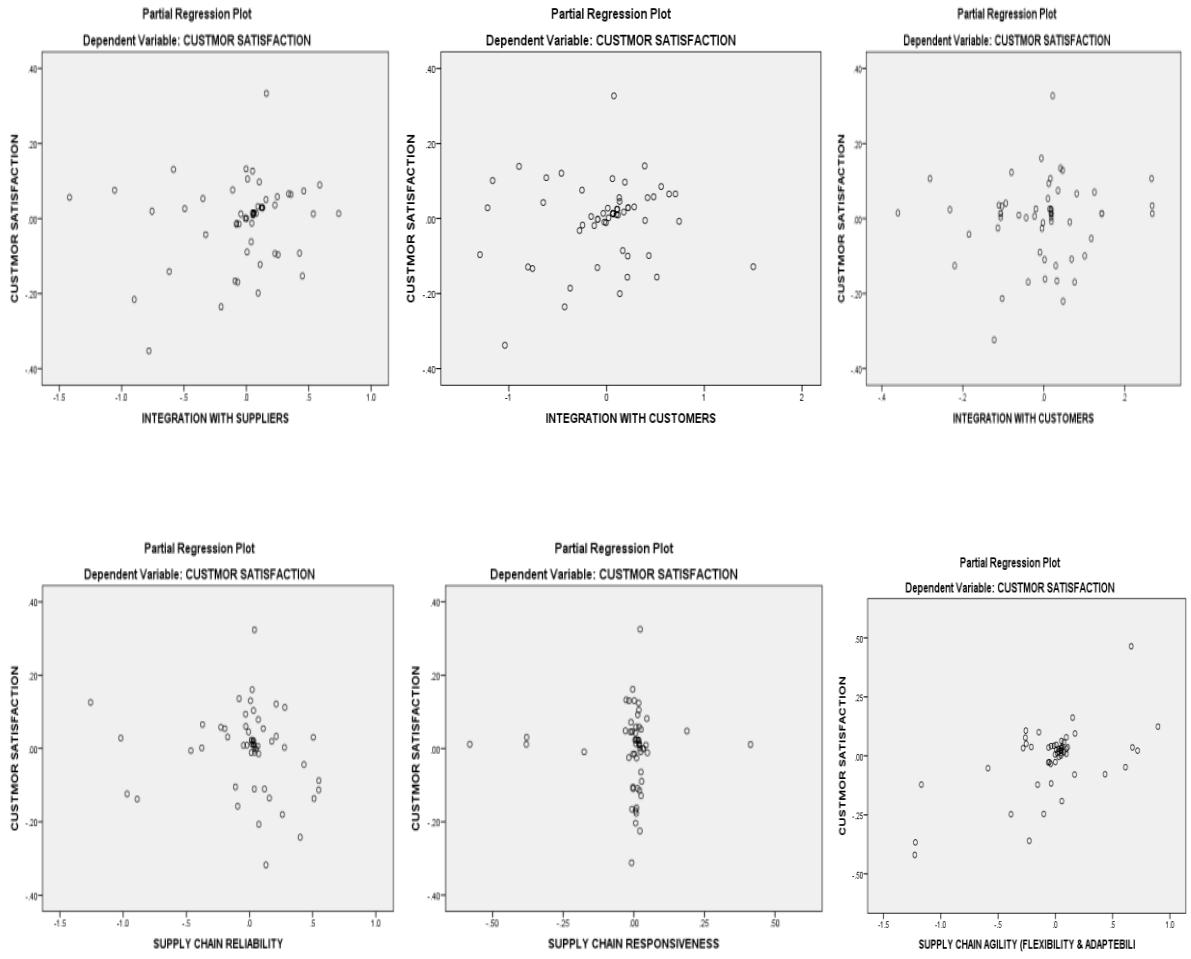
First, normality through histogram – the study used a histogram plot indicating normality of residuals. It produced a bell-shaped curve that shows the normal distribution of the

series. In this study, the figure above shows a bell-shaped distribution of the residuals. The figure shows that X-axis shows the residuals, whereas Y-axis represents the density of the data set. As a consequence, this histogram plot confirms the normality test results from the two tests in this study.

B) Heteroscadacity

Table 1.4: Heteroscadacity Test

Model Summary[b]	
Model	**Durbin-Watson**
1	**1.777[a]**
a. Predictors: (Constant), inventory management practice performance , supply chain responsiveness , integration with suppliers , supply chain reliability , integration with customers , integration with customers , e-supply chain management cost, supply chain agility	
b. Dependent Variable: END USER SATISFACTION	



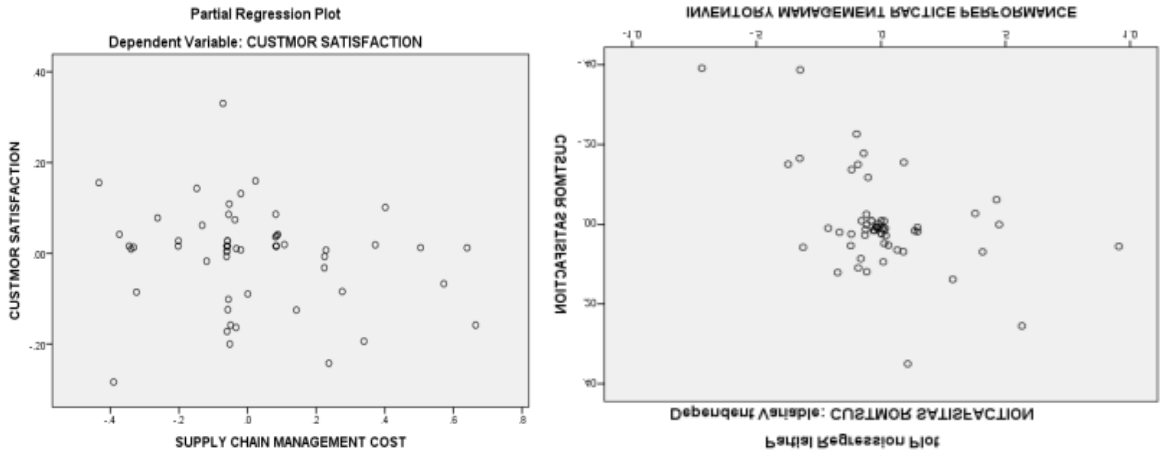


Figure 1.3 Scatter Plot

By using the least squares method (a procedure that minimizes the vertical deviations of plotted points surrounding a straight line), it is able to construct a best fitting straight line to the scatter diagram points as indicated above.

C) Multicollinearity

Multicollinearity refers to a situation in which there is exact (or nearly exact) linear relation among two or more of the input variables (Uma, 2003).

Table 1.5: Multicollinearity Test

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	Integration With Suppliers	.558	**1.792**
	Integration With Customers	.601	**1.664**
	Integration With Customers	.640	**1.564**
	Supply Chain Reliability	.671	**1.490**
	Supply Chain Responsiveness	.753	**1.327**
	Supply Chain Agility (Flexibility & Adaptability)	.467	**2.140**
	E-supply chain management Cost	.595	**1.681**
	Inventory Management Practice Performance	.787	**1.270**
a. Dependent Variable: Customer Satisfaction			

Source: (SPSS Output 2021)

The VIF (Variance Inflation Factor) for each term in the model measures the combined effect of dependence among the repressors on the variance of that term. One or more large

VIF indicate multicollinearity. Practical experience indicates that if any of the VIF results exceeds 5 or 10, it is an indication that the associated regression coefficients are poorly estimated because of multicollinearity (Uma, 2003). Collinearity Statistics shows that the VIF value of eight independent variables are between 2.140 and 1.270 which are less than 5 or 10 (Uma ,2003) and no collinaritry is observed on this data. The table also presents the result of regression analysis; the result regression analysis is based on customer satisfaction. The independent variables that contribute to variance of the dependent variable are explained by standardized Beta coefficient.

4.6.2 Regression Analysis

The regression analysis was used to establish the relationship that exists between the research variables (dependent and independent). The independent variables were determinants of e-supply chain management practice, while the dependent variable was customer satisfaction at the company. This regression analysis was conducted to know by how much the independent variable explains the dependent variable.

Table 1.6 Regression Test Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.798[a]	**.637**	**.593**	.702

a. Predictors: (Constant), Inventory Management Practice Performance , Supply Chain Responsiveness , Integration With Suppliers , Supply Chain Reliability , Integration With Customers , Integration With Customers , E-supply chain management Cost, Supply Chain Agility (Flexibility & Adaptability

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.909	8	7.239	14.679	.000[b]
	Residual	33.039	67	.493		
	Total	90.947	75			

a. Dependent Variable: END USER SATISFACTION

b. Predictors: (Constant), Inventory Management Practice Performance , Supply Chain Responsiveness , Integration With Suppliers , Supply Chain Reliability , Integration With Customers , Integration With Customers , E-supply chain management Cost, Supply Chain Agility (Flexibility & Adaptability

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.516	.333		-1.550	.126
	Integration With Suppliers	**.247**	.097	.149	1.510	**.013**
	Integration With Customers	**.262**	.106	.234	2.462	**.016**
	Information Technology Utilization in E-SCM	**.285**	.106	.248	2.695	**.009**
	Supply Chain Reliability	**.181**	.090	.180	2.004	**.049**
	Supply Chain Responsiveness	**.187**	.095	.095	2.003	**.047**
	Supply Chain Agility (Flexibility & Adaptability	**.259**	.110	.156	2.411	**.018**
	E-supply chain management Cost	**.216**	.124	-.089	-.934	**.019**
	Inventory Management Practice Performance	**.276**	.094	.156	1.878	**.015**

a. Dependent Variable: END USER SATISFACTION

Source: (SPSS Output, 2021)

In this research, the regression analysis used the independent variable (8 factors) indicated on the model to measure the customer satisfaction. The significance level of 0.05 was used with 95% confidence interval. The reason for using single analysis was to examine the direct effect of the independent variables on the perceived customer satisfaction.

As indicated in the above table the independent variables predict the dependent variable R square = 79.8 % with adjusted R square 63.7 % the remaining less than 40% other extraneous variable that can affect customer satisfaction. This result also indicates that the variable selected as independent had an effect on customer satisfaction. The coefficient of determinant r square indicates that 63.7% of the variation in the performance is by explained by determinants of e-supply chain management practices factors namely; inventory management practice performance, supply chain responsiveness , supply chain agility (flexibility & adaptability, integration with customers , e-supply chain management

cost, supply chain reliability , integration with suppliers. The study further conducted an Analysis of Variance to check the significance of the Model.

The ANOVA result for regression result coefficient indicates that the model is significance the 95% of level of confidence as the p-value is 0.000 which is less than 0.05.This shows that the model was highly significance in explaining the relationship that exists between the study variable inventory management practice performance , supply chain responsiveness , supply chain agility (flexibility & adaptability, integration with customers , e-supply chain management cost, supply chain reliability , integration with suppliers , integration with customers satisfaction. Hence, implying a good fit for the model since it shows a significant effect of on customer satisfaction.

In this study, the hypotheses testing used to test a significant influence of integration with suppliers, integration with customers, and information technology utilization in E-SCM, supply chain reliability, supply chain responsiveness, supply chain agility (flexibility & adaptability), e-supply chain management cost, inventory management practice and customers satisfaction. According to the above table, the p-value for integration with suppliers, integration with customers, and information technology utilization in E-SCM, supply chain reliability, supply chain responsiveness, supply chain agility (flexibility & adaptability), e-supply chain management cost, inventory management practice less than 0.005 which is statistically significant at ($p<0.05$) which shows a strong support for all hypothesizes. It mean there is a significant effect of integration with suppliers, integration with customers, and information technology utilization in E-SCM, supply chain reliability, supply chain responsiveness, supply chain agility (flexibility & adaptability), e-supply chain management cost, inventory management practice on customer satisfaction.

In this study, it is found that there is a significant and positive effect between integration with suppliers and customer satisfaction as the p-value is less than 0.05; p= 0.013); Integration with customers has a significant and positive effect on customer satisfaction as p= 0.016; ICT utilization has a significant and positive effect on customer satisfaction as p=0.009; supply chain reliability has a significant and positive effect on customer satisfaction as the result of supply chain reliability shows p=0.049; Supply chain responsiveness has a significant and positive effect on customer satisfaction as the test value of supply chain responsiveness shows p=0.047; Supply chain agility has a significant and positive effect on customer satisfaction as p=0.018; e-supply chain management cost has a significant and positive effect on customer satisfaction as p=0.019 and finally inventory management practice performance has a significant and positive effect on customer satisfaction as the test shows the p-value of inventory management is less than 0.005 which is p=0.015). This shows that increases in the dimensions of e-supply chain management practice determinants was cause increased customer satisfaction.

From the analytical model developed show that integration with suppliers (β1= 0.247, p= 0.013), integration with customers (β2= 0.262, p= 0.016), ICT utilization(β3= 0.285, p=0.009),supply chain reliability,(β4=0.181, p=0.049),supply chain responsiveness,(β5= 0.187, p=0.047), supply chain agility ,(β6=0.259, p=0.018) supply chain cost ,(β7=0.216, p=0.019),54Inventory management,(β8=-0.276, p=0.015) have a significance effect on customer satisfaction .This shows that increases in the dimensions of e-supply chain management practice determinants was cause increased customer satisfaction.

A regression analysis model was used to determine the relationship between e-supply chain managementperformance practices and customer satisfaction at a company. The multiple regression model was assumed linear in the form of:

$$\mathbf{Y= \beta_0+\beta_1x_1+ \beta_2x_2+ \beta_3x_3+ \beta_4x_4+ \beta_5x_5+ \beta_6x_6+ \beta_7x_7+ \beta_8x_8+\varepsilon}$$

Where:

- Y= Dependent Variables (Customer Satisfaction) , β0= Constant (the intercept of the model), β1…….. β8 = coefficient of independent variables
- X1, X2, X3, X4, X5, X6, X7 and X8 are the research control variables and represents
- X1= Integration with suppliers, $X_{2=}$ Integration with customers, $X_{3=}$ ICT utilization $X_{4=}$ Supply chain reliability, $X_{5=}$ Supply chain responsiveness, $X_{6=}$ Supply chain agility $X_{7=}$E-supply chain management cost, $X_{8=}$ Inventory management practice performance and ε =Error

The predictive model developed by the study is

$$\mathbf{Y= -0.516+0.247x1+0.262x2+0.285x3+0.181x4+0.187x4 +0.259x6 +0.216x7 +0.276x8}$$

where; Y is customer satisfaction , x1 is integration with suppliers, x2 is integration with customers, x3 is ICT utilization and x4 is supply chain reliability, x5 is supply chain responsiveness, x6 is supply chain agility, x7 is supply chain cost,x8 is Inventory management

As we have seen from the above, the assumptions of multiple regression analysis listed above were tested and fulfill the assumptions.

Table 1.7 Hypothesis test

	Variables	Significance	Descriptions
H1. Integration with suppliers has a significant and positive effect on customer satisfaction	Integration with suppliers (H1)	**.013**	Accepted
H2. Integration with customers has a significant and positive effect on	Integration with customers(H2)	**.016**	Accepted

customer satisfaction			
H3. ICT utilization has a significant and positive effect on customer satisfaction	ICT utilization(H3)	**.009**	Accepted
H4. Supply chain reliability has a significant and positive effect on customer satisfaction Integration with customers has a significant and positive effect on customer satisfaction	Supply chain reliability(H4)	**.049**	Accepted
H5. Supply chain responsiveness has a significant and positive effect on customer satisfaction	Supply chain responsiveness(H5)	**.047**	Accepted
H6. Supply chain agility has a significant and positive effect on customer satisfaction	Supply chain agility(H6)	**.018**	Accepted
H7.E-supply chain management cost has a significant and positive effect on customer satisfaction	E-supply chain management cost(H7)	**.019**	Accepted
H8. Inventory management practice performance has a significant and positive effect on customer satisfaction	Inventory management practice performance(H8)	**.015**	Accepted

Source: (SPSS Output 2021)

5.1 Conclusion

This study described the supply chain performance of based on the integration and collaboration with strategic suppliers, joint planning and forecasting as well as sharing of long terms demands. The integration and collaboration of the company with strategic customers was generally considered good with limitation in terms of jointly forecasting of demands, jointly planning of inventories and lack of visible supply chain inventory status along the downstream supply chain network. It is implicit that the objective of supply chain performance management is to assist judgment makers' superior decisions, arrangements, comprehend and influence their performance. This is because of the supply chain performance management is critical to the eventual achievement of composite business systems like delivery chains. Major performance dimensions are used to gauge supply chain performance on a tactical, planned, and operational level. Particularly, the majority of the existing SCM systems are toward the back looking exist in seclusion, and stationary. Also, they be deficient in the aptitude to efficiently convey in sequence to choice making. In

the dynamic and unpredictable global business atmosphere where companies are contending as component of delivery chains, it is no difficult to act in response to troubles subsequent to happen, but to foresee prospect concert and intelligently suggest proper actions. This is to message that need to learn by the supply chain handlers. As, the international business setting is drastic changing, and e-supply chain management (E-SCM) has got a remarkable consideration from both academic world and business world, since the preceding decade, researchers should put effort on the incorporation of E-SCM systems and performance management systems to enhance end user satisfaction.

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