INNOVATIONS

The Effects of Supply Chain Management on Customer Satisfaction in Small and Micro Enterprises, Tigray Region, Ethiopia

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Abstract: Since competition is no longer between firms but across supply networks, effective supply chain management strategies have become a potentially valuable way of achieving competitive advantage through customer satisfaction. The effects of SCM practises on customer satisfaction were investigated using five elements of SCM practises (company integration with suppliers; company integration with customers; information sharing practices; internal integration; and logistics design practices). The study's data was gathered from 200 customers of small and micro enterprises in the Tigray region. A Pearson correlation was used to test the framework's stated linkages, and regression analysis was used to examine the causal relationships. According to the findings of the study, there is a strong link between customer satisfaction and each of the SCM practises (companies' integration with suppliers; companies' integration with customers; information sharing practices; internal integration; and logistics design practices). As a result, in order to improve long-term SME profitability by increasing customer happiness, it is preferable for the firm to place a greater emphasis on the implementation of those supply chain management practices. In light of these facts, the research tried to find out how policymakers and businesses can make the most of them to help achieve the growth and transformation plan by making small and micro enterprises in Ethiopia that can compete successfully on an international level.

Key Words:1. SCM 2. Company-suppliers 3. company-customers 4. Internal integration 5. Information sharing and Logistics design 6. Tigray region.

1. Introduction

Today's management has highlighted customer satisfaction as a key factor in corporate success and has stated that enhancing management relationships is critical to the company's success. The contemporary business environment is very different from past ones, and competitiveness is extremely important (Gilaninia et al., 2011). New types of structural reforms, as well as competitive and exchange processes, result in a new communication paradigm for long-term buyer-supplier partnerships (Seyedi, Moosavi, Heidari, 2009). According to Bogale (2015), supply chain expansion attempts to increase profitability, customer response, and the ability to give value to customers, as well as improve connectivity and dependency among enterprises. As a result, taking a more integrated approach to supply chain relationship management is becoming more popular as a means of fulfilling changing client demands (Eyong, 2009). In Ethiopia, the business environment is currently becoming more customer-driven, and competitive. As a result, it is unquestionable that businesses should develop an integrated and efficient system that allows resources to move seamlessly and instantly across the supply chain (Assefa. B, 2011). Yohannes, A. (2015) also claims that Ethiopian manufacturing industries' previous supply chain management practises are traditional in that partners involved across the supply chain act independently in designing, developing, and executing strategies, with little effort made to align strategies with partners doing business with them, such as suppliers, whole sellers, distributors, and customers.

Addis T. (2015) adds that most product and service delivery operations in Ethiopia have a significant performance gap, which could be attributable to a lack of proper supply chain management methods. According to Lazarovic (2007), supply chain management is increasingly seen as a vital business activity for organisations that manufacture or distribute goods. This is because customers' demands for most items are becoming increasingly demanding in terms of response time, choice, and the pursuit of lower pricing. This study looks at small and micro enterprises and tries to figure out how to improve customer satisfaction and supply chain management by using supply chain management practises to achieve competitive performance goals and strategies.

Companies and organisations should place a major emphasis on customer positioning and building strong relationships with buyers of goods in order to flourish and survive in today's economic environment (Yohannes, 2015). The problem is that most businesses are organised functionally rather than as a chain, resulting in a lack of common cooperation both within and across enterprises (Hoole, 2005). According to Mirquez (2010), functionality will result in a reduction in inventory and cost, as well as inhibit essential information sharing between chains. As a result, there will be a lack of trust and a bullwhip effect. According to the authors, supply chain management may be utilised as a strategic weapon to establish a long-term competitive advantage by reducing expenditure without sacrificing customer satisfaction (Lee and Billington, 1992). Due to a lack of integration, collaboration, and the willingness and practise of managing supply chains, Ethiopian businesses are not reaping the full benefits of supply chain management. Complex difficulties like perishability, transportation of low-value items, and rising customer demands for safety are among the elements that contribute to an integrated strategy in small and micro enterprises. The chain can be integrated by all parties working together on collaborative strategy planning and sharing information in an open and transparent manner based on mutual trust and respect (ANZIBA, 2004). As a result, since achieving generalisation of the causal relationship between supply chain management practises and customer satisfaction necessitates empirical confirmation in a variety of environments, particularly in emerging economies, this paper would contribute to the debate by examining the relationship between supply chain management practises and customer satisfaction in small and micro enterprises.

2. Review of Literature

2.1. Concepts of Supply Chain Management

A supply chain is made up of all parties directly or indirectly involved in fulfilling a customer's request. Not only do manufacturers and suppliers play a role in the supply chain, but so do transporters, warehouses, retailers, and even customers. The supply chain encompasses all tasks involved in receiving and fulfilling a customer request inside each firm, such as a manufacturer. New product creation, marketing, operations, distribution, financing, and customer support are just a few of these functions (Ullrich, C.A, 2014). In recent years, corporations have become more interested in supply chain management as they have realised that the actions taken by one member of the network have an impact on the profitability of other members of the chain (Silver, 1998). This is because the new source of business competitiveness is based on how well corporations link their operations with their supply chain partners, such as suppliers, manufacturers, distributors, wholesalers, retailers, and end customers (Silver, 1998). So, supply chain management is used to coordinate activities and link them to processes in the upstream, downstream, and internal parts of the supply chain (Ross, 1998).

2.2. Supply Chain Management practices

Supply chain management practises are defined by Tan et al. (2002) as a set of activities carried out in an organisation to enhance effective supply chain management. Supply Chain Management procedures involve supply and material management challenges, operations, information technology and sharing (ICT), and customer service. According to Moberg (2002), other components such as technology, cost, inventory management, competitiveness, and external regulations must be managed successfully in order to accomplish the business goals of each supply chain member, resulting in value creation for the end customer. There are five perspectives or dimensions to supply chain management. Integration with suppliers and customers, internal integration, information sharing, and logistics design are all examples of these (Perry &Sohl, 2000; Lazarevic et al., 2007).

2.3. The Concept of Customer Satisfaction

Customer satisfaction can be felt in a variety of circumstances and is linked to both goods and services. It's a highly subjective evaluation that's heavily influenced by customer expectations. Customer satisfaction is also based on the customer's interaction with the firm as well as personal consequences. A pleased customer in the commercial sector is defined by some researchers as "one who gains significant added value" to his or her bottom line, a description that might equally apply to public services (Hanan, Mick, and Petter, 2010). Customer supply relationships are also defined as supply chain strategies that necessitate a whole systems view of the chain's links that operate together efficiently to achieve customer satisfaction at the point of delivery to the consumer. As a result, by eliminating needless expenses, movements, and handling, costs must be reduced throughout the supply chain. The emphasis is on efficiency and added value, or the perception of value by the end-user. In today's competitive business world, customer expectations are more important than ever for marketing managers, and making sure customers are happy is very important to them.

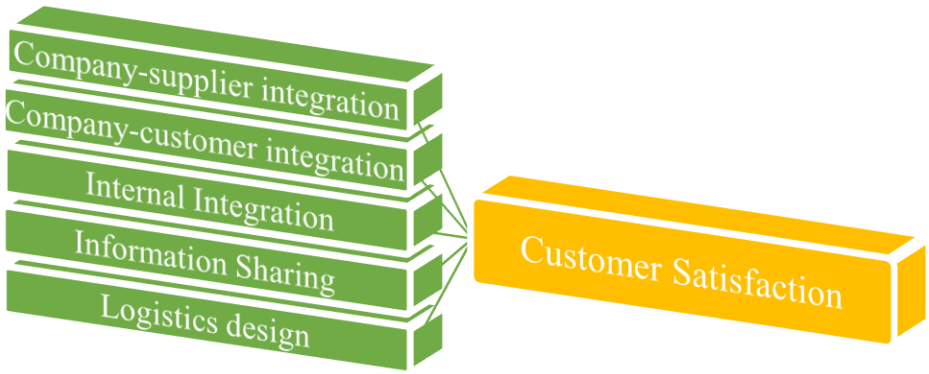
2.4. Customer Satisfaction and Supply Chain Management Practices

While managers in a supply chain that includes external organisations must engage with people outside of their own company, mutual understanding between managers of departments within the company must be achieved in this situation. On the other hand, the term "supply chain management" has been used to represent the planning and control of materials and information flows, as well as logistics activities, not only within a firm but also between enterprises (Cooper et al., 1997).

According to Handfield and Nicholas (1999), to stay competitive, businesses must manage a network of upstream firms (suppliers) that provide inputs and a network of downstream firms (customers) that provide suppliers. Fostering trust with the right partners has a significant impact on current and future business performance. The goal of supply chain management is to meet the needs of the final customer. The customer is an essential component of the supply chain, and the major goal of the supply chain is to meet consumer needs while also making a profit. As seen by Childerhose and Towill (2000), typical supply chain activities begin with a customer order and end when the consumer is satisfied with their item and pays for it.

2.5. Conceptual Model and Hypothesis

The conceptual model (figure 2.1) depicts the relationship between supply chain management and customer satisfaction. According to the framework, SCM practises will affect customer satisfaction both directly and indirectly.



Hypothesis

The following alternative hypotheses are thought to be tested in order to achieve the goal of this study:

H1: Collaboration (between the company and the customer, between the company and the supplier, and within the company itself) has a big and positive effect on customer satisfaction.

H2: Information sharing has a positive and significant impact on customer satisfaction.

H3: Logistics design has a positive and significant impact on customer satisfaction.

3. Research Methodology

Because the researcher aimed to find and explore the effects and relationships between the identified supply chain management practise elements and customer satisfaction, the descriptive and explanatory research methods were applied in this study (Dereje, 2012; Haque & Islam, 2013, Belay, 2011). This research makes use of a quantitative method, namely a questionnaire. Primary data was used as a source.

Customers of small and micro-enterprises in the Tigray region made up the population of the study. As a result, the individual clients were the units of analysis for this study. Through the application of a statistical technique, an adequate sample size was determined for this investigation. The sample size is determined through statistical analysis, and the equation used to do so determines not only the required sample size for the study based on the size of the population but also takes into account the number of standard errors. By utilising this method, the researcher is able to ensure that the sample that is being investigated statistically represents the total population that is the subject of the survey. A non-probability sampling technique was used for the purpose of accurately representing the population of customers of the enterprises. Hence, 200 customers were chosen using a convenience sample method. After the data was successfully acquired, it was analysed with a computer programme known as SPSS, which utilises both descriptive statistics (tables, mean, and standard deviation) and inferential statistics. Both types of analyses were performed on the data. As a direct consequence of this, correlation analysis was selected as the method for verifying the relationship. In addition, linear regressions were used to evaluate the effects of each independent variable on a single dependent variable so that predictions could be made. This was done in the same way that Yorgon, Kosgei, and Lagat (2015) did it.

4. Results and Discussions

4.1. Descriptive analysis

Customer satisfaction is a determinant issue for micro and small businesses to maintain a stable customer base and higher profit. Thus, measuring customers' satisfaction status is supposed to be considered by micro and small businesses as one of the primary activities of their business operations. Table 1, revealed that 13.8% of the respondents replied that their satisfaction status is poor, whereas 82.1% and 4.1% of them stated that their satisfaction status is categorised as moderate and high, respectively. This implies that though most of the customers' satisfaction status is moderate, there are also some customers whose satisfaction is categorised as either high or poor satisfaction status. This fact is also triangulated by the overall mean and standard deviation scores of 3.89 and 0.360, as indicated in table 2.

Table 1: customers' satisfaction status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor	27	13.5	13.8	13.8
	Moderate	160	80.0	82.1	95.9
	High	8	4.0	4.1	100.0
	Total	195	97.5	100.0	
Missing	System	5	2.5		
Total		200	100.0		

Source: Survey result, (2019)

Regarding the determinants of customer satisfaction, logistics takes the lion's share, followed by company-supplier integration and information sharing. In contrast to this, internal integration and company-customer integration have the least predictive ability of customer satisfaction. This is justified by the logistics variable mean score of 3.98 and standard deviation of 0.408 represented in table 2.

Table 2: determinants of customer satisfaction

	N	Minimum	Maximum	Mean	Std. Deviation
Customer's satisfaction	195	2	4	3.89	.360
Information sharing	195	1	5	3.49	.447
Company supplier integration	195	1	5	3.54	.371
Company customer integration	195	2	5	3.33	.364
Internal integration	195	2	5	3.35	.337
Logistics	195	1	4	3.98	.408
Valid N (list wise)	195				

Source: Survey result, (2019).

4.2. Correlation analysis

A Pearson's Correlation Analysis was conducted to investigate the relationship between the independent variables, which are information sharing, supplier integration, company customer integration, internal integration, and logistics, with customers' satisfaction status. A correlation analysis with Pearson's correlation coefficient (r) was conducted on all variables in the study to explore the relationships between the independent variables and dependent variable. In addition, multiple regressions were used to identify the most important variable that contributes to customers' satisfaction status. To interpret the strengths of relationships between variables, the guidelines suggested by Field (2005) were followed, mainly for their simplicity. His classification of the correlation coefficient (r) is as follows: 0.1–0.29 is considered weak; 0.3–0.49 is considered moderate; and > 0.5 is considered strong. And if the correlation coefficient is +1, it means the relationship is perfect; -1 means the relationship is perfect in the opposite way; and 0 means there is no linear relationship at all.

According to table 3, the Pearson correlation matrix showed that logistics has a moderate association with customer satisfaction, with a value of 0.424. As per the person's correlation, the r value ranges from 0.3 to 0.49, which shows variables are moderately correlated.

Table 3: Correlations

		information sharing	Company-supplier integration	Company-customer integration	internal integration	logistics	Customers' satisfaction status
Information sharing	Pearson Correlation	1	.546**	-.092	.235**	.430**	.391**
	Sig. (1-tailed)		.000	.099	.000	.000	.000
	N	195	195	195	195	195	195
Company-supplier integration	Pearson Correlation	.546**	1	.171**	.039	.617**	.411**
	Sig. (1-tailed)	.000		.009	.294	.000	.000
	N	195	195	195	195	195	195
Company-customer integration	Pearson Correlation	-.092	.171**	1	.218**	.301**	.082
	Sig. (1-tailed)	.099	.009		.001	.000	.127
	N	195	195	195	195	195	195
Internal integration	Pearson Correlation	.235**	.039	.218**	1	-.012	.115
	Sig. (1-tailed)	.000	.294	.001		.435	.055
	N	195	195	195	195	195	195
Logistics	Pearson Correlation	.430**	.617**	.301**	-.012	1	.424**
	Sig. (1-tailed)	.000	.000	.000	.435		.000
	N	195	195	195	195	195	195
Customer's satisfaction status	Pearson Correlation	.391**	.411**	.082	.115	.424**	1
	Sig. (1-tailed)	.000	.000	.127	.055	.000	
	N	195	195	195	195	195	195

**. Correlation is significant at the 0.01 level (1-tailed).

Source: Survey result (2019)

According to table 3, the Pearson correlation matrix shows that logistics has a strong association with overall customer satisfaction, with an R-value of 0.424, followed by company-supplier integration and information sharing. Therefore, company-supplier integration has a moderate relationship with customer satisfaction next to logistics. In the same way, company-supplier integration, information sharing, internal integration, and company-customer integration have positive associations with customer satisfaction, with an R-value of 0.411, 0.391, 0.112, and 0.82, respectively. The above Pearson correlation matrix shows that logistics and company-supplier integration have the strongest positive relationships with customer satisfaction. On the other hand, customer satisfaction is least linked to internal integration, company-customer integration, and customer satisfaction.

4.3. Regression Analysis

In this research, the regression uses five variables as an independent of a separate measure of customer satisfaction. A regression analysis examines the relationship between the dependent variable and specified independent variables. Multiple regressions were conducted to identify the relationship and to determine the most dominant variables that influenced the satisfaction of customers in the specified sector. A significance level of 0.05 was used with a 95% confidence interval. The dependent variable is customer satisfaction, and the independent variables include information sharing, company-supplier integration, company-customer integration, internal integration, and logistics. The reason for using multiple regression analysis was to examine the direct effect of these variables on customer satisfaction. The output is shown in the table below. The study checked the standardised coefficients in order to indicate the impact that each variable has on the dependent variable. The table shows the slope of the multiple regression analysis.

Table 4: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758[a]	.534	.527	.712

a. Predictors: (Constant), logistics, internal integration, company- customer integration, information sharing, company-supplier integration

Source: Survey result (2019)

In the model summary from the analysis in table 4, R (0.7578a) indicated that the correlation of the five (5) independent variables with the dependent variable customer satisfaction and the weighted combination of the predictor variables explained or affected approximately 52.7% (adjusted R square) of the variance of customer satisfaction, and the remaining 47.3% was explained or affected by extraneous variables. This result also shows that this study might not have taken into account some other factors that could have had an effect on customer satisfaction.

Based on the multiple regression analysis, Table 5 reveals the impact of each independent variable and their significance. The impact of information sharing, company-supplier integration, company-customer integration, internal integration, and logistics on customers' satisfaction in micro and small enterprises is 0.186, 0.230, 0.027, 0.077, and 0.375, respectively. By examining this beta weight of the data analysis result, the finding shows that logistics, followed by company-supplier integration, was making a relatively larger contribution to the prediction of the model. This informed us of the predicted change in the dependent variable for every unit increase in the predictor. This means that for every additional point or value in the logistics, one could predict a gain of 0.375 points in the customer's satisfaction provided that other variables are held constant. The same is true for company-supplier integration, company-customer integration, internal integration, and information sharing.

The beta weight of the data analysis result also shows that company-customer integration makes a relatively lower contribution to the prediction of the model. Therefore, micro and small business enterprises require working hard to strengthen company-customer integration to increase customer satisfaction. Generally, customer satisfaction is primarily predicted by higher levels of logistics,

company-supplier integration, and information sharing, and to a lesser extent, by internal integration and company-customer integration in the selected case study. Logistics received the strongest weight in the model, followed by company-supplier integration. This shows they are the dominant satisfaction-creation strategies in micro and small business enterprises.

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.778	.169		22.389	.000
	Information sharing	.178	.036	.186	2.169	.031
	Company-supplier integration	.247	.033	.230	1.454	.048
	Company-customer integration	.023	.037	.027	.357	.032
	Internal integration	.065	.037	.077	1.082	.061
	Logistics	.319	.038	.375	3.130	.002

Source: Survey result, (2019)

5. Conclusion and Recommendations

In the first part of this section, the main conclusions from the study are given. After that, the researchers' suggestions for how to fill the gap that was found are given.

5.1. Conclusions

As the effect of supply chain management on customer satisfaction in micro and small enterprises is the focus of this study, attempts were made to identify the effect of supply chain management on customer satisfaction in micro and small enterprises. Based on the analysis and discussion in the last section, the following paragraphs reach some important conclusions about these variables.

Logistics, integration between the company and the supplier, and sharing of information are just three of the many ways that supply chain management would have a big effect on customer satisfaction. Regarding logistics factors such as transportation offer, speed of transportation, and cost of transportation, they are found to be influential factors for customer satisfaction, among other factors. The regression results show a strong positive relationship between logistics and customer satisfaction. Company-supplier integration was identified as a significant factor for customer satisfaction. Also, there is a significant and positive link between sharing information and making customers happy.

5.2. Recommendation

Based on the research results, the following suggestions are made to the relevant bodies for promoting supply chain management for customer satisfaction and saving micro and small enterprises (MSEs) from the challenge of customer dissatisfaction, thus using their potential for the economic growth of the country.

MSEs should consider forming strategic alliances and outsourcing parts of the production process in order to realise and improve customer satisfaction by producing a list of the suppliers for each product area. Evaluate them against a set of performance criteria. These might include reliability, responsiveness, delivery arrangements, use of quality systems, and product specifications. Examine the number of suppliers the MSE needs. Having too many suppliers increases both the management task of controlling them and the associated administrative costs. Reducing the total and moving toward single-sourcing can have benefits like lower administration costs, more time to manage each

supplier, a better relationship between the MSE and the supplier, faster problem solving because of a better understanding of problems and needs, and better communication.

The mission of logistics is to plan and co-ordinate all those activities necessary to achieve the desired level of delivery service and quality at the lowest possible cost. Partnerships allow MSE to work together to take advantage of market opportunities and respond to customer needs more effectively than they could in isolation. Partnering would mean sharing risk with others and trusting them to act in their joint best interests. There should be a strategic "fit" between partners so that objectives match and action plans show synergy; finding complementary skills, competences, and resources in partners; sharing information which may have been privileged or confidential; and involving suppliers at the earliest stages of design of a new product. The firm can start with one particular supplier with whom they already have a good relationship or with an emerging, forward-looking supplier. The government is also giving training to MSE owners and managers to raise their awareness and give them the skills they need to set up good logistics networks with other businesses.

Mutual knowledge created through information shared along the supply chain increases the probability of a common understanding among the parties. Hence, a customer's expectations are kept consistent with the supply chain's ability to meet the customer's needs; met expectations are correlated with satisfied customers, especially to the extent the customer has contributed to the mutual knowledge created by the shared information. So, the owners and managers of MSEs must give their suppliers and customers correct, relevant, and enough information to keep and improve customer satisfaction.

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