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INFORMATION SHARING INVENTORY MANAGEMENT AND CUSTOMER SATISFACTION: The Case of Manufacturing Firms in Kampala

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ABSTRACT

Information sharing and inventory management have emerged as key factors for manufacturing firms wanting to meet their customer demand in the downstream chain. Downstream chains of manufacturing firms in Uganda face a number of challenges that affect customer satisfaction. Information sharing and poor inventory management are some of the challenges that affect customer satisfaction in the downstream chain. This study attempts to study the relationship between information sharing, inventory management and customer satisfaction in the downstream chain of manufacturing firms in Uganda. Customer satisfaction in the downstream chain is important because Manufacturing firms contribute a large percentage to the GDP of the country. The research was based on registered distributors and retailers who sell products of manufacturing firms in Uganda. A Sample of 523 was taken composed of registered retailers and distributors. A survey questionnaire was used which was adopted from those used by previous scholars and was modified to suit the local setting. A response rate of 69% was achieved. The study established that information sharing explained 47.1% of the variation in customer satisfaction and inventory management explained 39.4% of the variation in customer satisfaction. According to the results, information sharing affects customer satisfaction more than inventory management. This is consistent with what previous scholars have found out. These results raise implications to the owners manufacturing firms in Uganda and to the theory as well. This is the first study to document the effect of information sharing ,inventory management on customer satisfaction in the downstream chain of manufacturing firms in Uganda. Manufacturing firms in Uganda have neglected the issues of information sharing and inventory management which has affected their ability to meet customer needs. The results indicate that the firm's ability to share information and ensure proper inventory management has implications on customer satisfaction. The fact that manufacturing firms are not willing to share information with their downstream chain partners also has important implications, demonstrating the practical value of information sharing and inventory management.

Keywords: *Information sharing, inventory management, customer satisfaction, Uganda*

INTRODUCTION

Downstream chains of manufacturing firms in Uganda are characterized by elongated or overextended chains of middlemen which include distributors and retailers (buyers/agents) which, in turn, mean long chains of transactions between chain members and consumers (Bibangambah, 2002). These in turn have led to poor access to appropriate market information (UNACTAD, 2006).This is due to lack of information networks within their downstream chain

(Ministry of Tourism and Trade, 2005). Limited or no access to timely information regarding customer requirements especially with respect to such matters as supply volumes and quantities has led to supply shortages because chain partners are never aware of how many orders a customer has placed and how much should be ordered from suppliers (Kaijuka, 1994-1999; Yorst, etal, 2007). Okello (2007) showed that leading manufacturers in Uganda, such as Coca-Cola, Pepsi, Mukwano, Uganda Breweries, Nile Breweries, Britannia, Rafiki, Bata Uganda Ltd, British American Tobacco (BAT), Royal Foam and Vita Foam are faced with problems of wrong forecasting due to an availability of enough customer demand information. This has caused erratic deliveries in these firms, late deliveries and inflexibility hence affecting customer satisfaction with in their downstream chain (USAID, 2001: UNlDO, 2005).These aspects indicate poor customer satisfaction in the downstream chain. Given that the manufacturing firms' and chain partner s'operations depend on the existence of the customers in downstream chain, it is vital that the customer satisfaction in the downstream chain is addressed. Therefore, it is therefore important to gain an understanding of the factors that explain customer satisfaction in the downstream chain of manufacturing firms in Uganda.

In this study, we examine the relationship between information sharing, inventory management and customer satisfaction so that we can determine the variance in customer satisfaction that is explained by information sharing and inventory management. The purpose of this paper is to increase knowledge on the factors that explain customer satisfaction in the downstream chains of manufacturing firms in Uganda given that few studies in Uganda have been undertaken in this area and other studies on customer satisfaction in the downstream chain of manufacturing firms have taken place in other countries whose contexts are very different from Uganda. Such studies include Okello (2008) who established that SMEs have structural and operational challenges that need to be addressed immediately if economic development is to be attained because they are the engine of growth, employment creation and socio-economic transformation; Ntayi, Rooks and Eyaa (2009) studied the relationship between information technology flexibility, procurement practices, collaborative relationship and supply chain swiftness; Ntayi and Eyaa (2010) who studied the relationship between procurement practices, collaborative relationships and supply chain performance. None of these studies focused specifically on the effect of information sharing and inventory management on customer satisfaction. In this study, we examine the relationship between information sharing, inventory management and customer satisfaction in the downstream chain of manufacturing firms in Uganda.

THEORETICAL BACKGROUND

Literature Review and Hypotheses

Information sharing and inventory management

Information sharing plays an important role in inventory management (Sabbath, 2008). This enables chain partners to plan properly, avoid inventory bottlenecks in the chain and avoid safety stocks both for all the channel members (Chandra, 2000; Patel, 2001).Normally, when a buyer needs a product, he places an order to a supplier. With information, chain partners are able to know when and how much to order and what to put in the inventory plan (Elvander, Sarpola and Mattson, 2007). In order to share information, a partnership is formed between the supplier and buyer in which the supplier takes care of the-orders and replenishing (Ahmed 2004).To accomplish this, the supplier (retailer or distributor) gets regularly information on the inventory level and sales data of the buyer via the web or Electronic Data Interchange (EDI) (Homburg and Grozdanovic & Klarmann, M, 2007). Thus, when inventory drops below a certain level, orders are generated automatically on behalf of the buyer. In this case, it is the supplier who creates and manages the inventory plan. Continuous replenishment (CR) and vendor managed systems are used to share information that is used to manage inventory levels (Skjoett et al., 2003; Cooke, 1998; Bernstein et al., 2005).According to Fisher (1997).with information chain partners are able to get accurate inventory information. Trying to control inventory with bad information is futile (Taylor, 2000). All replenishment decisions are based on the status of the inventory (Sahay, 2003). Chain partners are able to make reliable delivery promises, keep inventory levels low and inventory records 98 percent accurate every day. Information systems provide -real time information which enables chain partners forecast accurately (Cross, 2000). According to Kang and Gershwin (2005), chain partners experience inaccurate inventory records as a result of lack of collaboration while Raman et al. (2001) says that inventory records do not match with physical stock in chain partners' stores due to lack of collaboration. Silver et al. (1998) suggest, a partner's fate depends on how it manages its inventory. Much of the chain partners' costs are attributed to the amount it invests in inventory and associated holding, transportation, and management costs (Silver et al, 1998).According to Larry, Mulky and Harrington (1996), inventory has the biggest cost hidden in most chain partners' businesses. In addition, Fleisch and Tellkamp (2005) found out that inadequate information sharing results into inventory inaccuracies which increases the chain partners' holding costs and increases the out-of stock situations. The significant monetary investment in inventory only enhances the importance of better inventory

management (Brewer and Speke, 2000). In response, chain partners seek cost improvements by enhancing the efficiency of their inventory management systems (Verwijmeren, 1996). The use of systems like point of sale systems and collaboration helps chain partners to acquire information which reduces losses from obsolescence, damaged inventory, handling costs, stock outs costs, enables proper demand planning and replenishment (Verwijmeren, 1996; Parks, 1999).Safety stocks are reduced through vendor managed inventory, just in time and consignment inventory (Simatupang and Sridharan, 2008; Keong, 2005). All those can be operated through the use of integrated systems like vendor managed systems and just in time systems (Keong, 2005). The reduction in safety tocks leads to reduced obsolescence and storage (Gunasekeran and Tirtiroglu, 200I). Stock out costs are reduced has a result of parties in the chain sharing information which reduces demand variability (Simatupang and

Sridharan, 2008).Inventory turns refer to the number of times inventory is converted into cash (Koumanakos, 2008). Chain partners boost earnings by addressing our stock issues (Corsen and Gruen, 2003). High levels of inventories mean that there are low levels of inventory turns (Koumanakos, 2008). Non availability of stocks results into losses to all chain partners because customers may decide to buy another brand, buy items from another store or delay purchase. This comes as a result of information inefficiencies where the order information sent up the chain does not reflect the true consumer demand (Corsen and Gruen, 2003). A lack of inventory record accuracy clearly reduces chain profits due to lost sales and inventory carrying costs, which may run as high as 10 percent of existing profits (Raman et al., 2001).According to Rogers et al. (1992), chain partners utilizing information systems get information which enables them to accommodate selected customer request and provide a greater number of services to customers which will in turn improve chain members' profits. Systems like automatic purchase ordering systems enable chain partners not to evaluate inventories by moving down the stores and making orders based on intuition and also improve inventory turns of component stocks, and uniform the deviation between components (Corsen and Gruen, 2003).

Information sharing enables the chain partners to achieve revenue enhancements (Broersox, 1990; Lee and Tang., 2000). Information sharing through collaborative efforts enables chain partners focus on co-managed inventory by considering different levels of demand uncertainty which enables them to improve fill rate, increase inventory turnover and enhance sales (Parks, 1999).They improve fill rates ensuring that all customer orders are delivered on time. This leads to sales enhancement through repeat purchases and increased number of customers (Gunasekeran and Tirtiroglu, 200I).It also leads to increased responsiveness to market demands, customer service and increases market share (Anderson and Lee, 1999; Corbett et al 1999; Mentzer et al, 2000; Mc Laren et al, 2002).customer service and responsiveness are increased through increased flexibility. Information sharing enables chain partners to make products or services available to meet individual demand of customers and also making changes in products or services or deli every dates based on the customer's requirement (Gunasekeran and Tirtiroglu, 200I).Market share is increased through chain partners being able to have the best service level compared to competitors. To be competitive, chain partners must compare their service to those of their competitors (Gunasekeran and Tirtiroglu, 2001).Information sharing enables the chain partner to compress lead times, improve faster product to market cycle times, higher flexibility in dealing with supply and demand uncertainties (Bowersox, 1990; Lee et aI., 1997; Anderson and Lee, 1999; Corbett et al., 1999; Mentzer et al., 2000; McLaren et al, 2002).With collaboration, customers are able to specify the kind of product they want and in what quantities (McLaren et aI, 2002).Information sharing enables chain partners to compress lead times know how much they should have in stocks to meet customer demands. These stocks will enable chain partners to provide deliveries on time to their customers (keong et al, 2005). In case of non standardized products, chain partners will be flexible when the amount of time taken to fulfill customer orders is less than the amount of time the customer is willing to wait when the order is placed (Holmstrom, 2006).Product to market cycles times are reduced when manufacturing firms collaborate closely with the downstream partners to obtain customer information and seize new market opportunities (Holmstrom, 2006). Information technology systems are used to encourage close collaboration and intensive information exchange between the downstream partners, thus creating a flexible and efficient downstream net work (Omara, 2004).

Inventory management and customer satisfaction

Chain partners have got to be as efficient as possible (Introna, 1991). Customers have information concerning all products and services provided by chain partners in the market (Blather wick, 1996). They can very easily make a decision of taking their business elsewhere if a retailer, distributor or manufacturer cannot provide first class service in terms of availability of product (Blatherwick, 1996). Similarly, if retailers, distributors and manufacturers cannot compete on price, customers will very quickly be aware of this failing and transfer their loyalty. Customer

expectations in terms of service, range, new products and promotions require chain partners to be flexible indeed (Howgego, 2002).They have to provide pre and post purchase satisfaction to a customer which results into brand loyalty of the customers (Agarwal, 2007).1n order to realize fully the benefits of downstream chain, chain partners have to develop end-to-end integration of systems which will reduce costs, improve distribution and inventory management and thus customer loyalty (Howgego, 2002).Such systems include the digital loyalty network (DLN) which enables chain partners to continuously collect and monitor their customer, product and downstream chain data and more precisely adjust engineering, production, distribution and sales/marketing activities to meet current, future demand and enhance their partnership with suppliers (Introna, 1991).Having the desired products on hand when the customer wants them is critical to satisfy customer needs. More and more chain partners are using inventory-management information to improve their ability to fulfill key customer demand and having the right product at the right time (Anonymous, 1998).Understanding consumer behaviors and market trends can help chain partners to satisfy customer needs and to manage inventory information efficiently (Lee and Kleiner, 200l).Customers will return the product if it does not meet their requirements (Stuart et al, 2005). Products are returned on the sequential consideration of product condition, obsolescence, back-order status and when products are not environmentally compliant (Stuart et al, 2005; Blengini, 2008).Customers are interested in getting defect free products (Davidson et al, 200I). This means that chain partners have to be flexible and responsive, so that they can be adapted to meet rapidly changing customer expectations (Davidson et al, 2001).There is need for commitment, co operation and integration among manufacturer, distributors and retailers to meet the changing customer expectations (Neave, 1995; Chelsom, 1998). In order to satisfy customers, it is crucial to meet their moment of value which means delivering the right product at the right time and in the right place (Haag et aI, 1998).

Chain partners ensure timely delivery of a product that the customer really wants through the use of systems like just in time systems. Customers are satisfied when suppliers (retailers, distributors and manufacturers) are able to deli ever products or services as and when required. Chain partners maintain high levels of inventories at their stock point (Koumanakos, 2007). These reduce the amount of time it takes to deliver the product to the consumer (David et al, 2001). However having these high levels of inventories only works for standardardised products ((David et al, 2001). They would actually be counter –productive to meeting customers' needs for non standardized products (Newman and Sridharan, 1995; Johnson and Mattson, 2003; Volkmann et al, 2005).Efforts would be directed to sell what they have rather than what they have rather than what the customer wants in an attempt to use up inventory. In case of non standardized products, customers are satisfied when the amount of time it would take to satisfy the customers is less than the amount he customer is willing to wait, once an order has been placed (Holmstrom, 2006).Chain partners have to be flexible in order to satisfy customers' needs immediately (Gunasekaran,2001).In order to be flexible, chain partners may be required to maintain high stock levels or using information technology which helps chain partners to be flexible through providing timely information which leads to better customer service and inventory management (Ellram,1999).Chain partners are facing a challenge of retaining loyal customers (Agarwal, 2007) .They have to provide pre and post purchase satisfaction to a customer resulting in repeat purchases. Pre-purchase satisfaction takes into consideration quality, provision of transport, fair prices and flexibility while post purchase satisfaction looks at service management activities such as repair services which depend heavily on reverse logistics operations (Amini et al, 2005; Howgego, 2002).Safety stocks are maintained to reduce the fear chain partners have of losing a customer due to un availability of a product (Anonymous,1998).Understanding consumer behaviors and market trends can help chain partners to satisfy customer needs and to manage inventory information efficiently (Lee and Kleiner,2001).Customers will return the product if it does not meet their requirements (Stuart et al,2005).Products are returned on the sequential consideration of product condition,obsolelecence,bark order status and when products are not environmentally compliant (Stuart,2005;Blengini,2008).

Information sharing and customer satisfaction

Information sharing is conceptualized as the willingness of chain partners to voluntarily provide focused chain-specific information that can be used to help build and maintain customer relationships. Using focused individual customer relationships systems enables chain partners to position their firms toward realizing strategic advantage (Campbell, 2003). Focused customer information can help support the development of customized products and services that is products that meet customer demand (Spekman and Carraway, 2006).Customers are considered as the firm's most valuable asset (Blattberg and Deighton, 1996; Bolton et al., 2004; Peppers and Rogers, 2004).Firms increase customer lifetime value (CL V) by building and maintaining relationships with its customers. Through information sharing, firms are able to get information on customer behaviors and activities that affect firm profitability from each customer. In order to maintain customer loyalty, chain partners employ business-to-business

(B2B) loyalty programs (Spekman and Carraway, 2006). Loyalty programs are coordinated, membership-based, marketing activities designed to enhance closer, more cooperative relationships among pre-identified customers toward specific products and services offered by the program sponsor (Lacey and Sneath, 2006). Through targeted communications and customized delivery of goods and services, B2B loyalty programs attempt to build stronger bonds with the customers. Having the desired products on hand when the customer wants them is critical to satisfy customer needs. More and more chain partners are using inventory-management information to improve their ability to fulfill key customer demand and having the right product at the right time (Anonymous, 1998).Having information on consumer behaviors and market trends can help chain partners to satisfy customer needs and to manage inventory information efficiently (Lee and Kleiner, 2001).Customers will return the product if it does not meet their requirements (Stuart et al, 2005).

Customers are interested in getting defect tree products (Davidson et al, 2001). This means that chain partners have to ensure that they get information as far as the customer requirements are concerned, so that they can adapt their products to meet rapidly changing customer expectations (Davidson et al, 2001).There is need for commitment, co-operation and integration among manufacturer, distributors and retailers to meet the changing customer expectations (Neave, 1995; Chelsom, 1998).Customers are concerned when chain partners do not deliver products that meet their specifications (Agarwal, 2007). Chain partners employ strategies that enable customers disclose their product information (Fritiche and Kim, 2003). The chain partner will then be able to provide a product that meets the customers' product specifications and the customer will then feel obligated to buy the product presented to him. In order to ensure that customers purchase more, chain partners have to be committed and consistent with what they have already done (Fritiche and Kim, 2003). Chain partners employ information systems and collaborate with their customers in order to offer the best services to them. These enable chain partners reduce purchase prices, save time and ensure on time availability of the products (Carter et aI, 2004; Dai and Kauffman, 2002; Emiliani, 2004; Pinker et aI , 2003; Presutti, 2003; Smart and Harrison,2003; Smeltzer and Carr, 2002,).Flexibility is the extent to which the supplier is willing to make changes to accommodate the Customer’s changing or unforeseen needs and to making available the products or services to meet the individual demand of customers Gunasekaran,2001).

Frequent communication enables chain partners to react to demand changes (Kaipia et al 2002). This provides information on the changing customers' tastes and preferences. Chain partners will respond to such changes through the use of information technology which enables information flow within the chain and customer collaboration which shows the willingness of chain partners to release the information (Romano, 2003). The flexibility of downstream chain is crucial in satisfying customers' changing needs in today's competitive and uncertain environments (Ndubisi et al, 2005).Chain partners require information in order to make on time deliveries to their customers (Koumanakos,2007).Customers are satisfied when suppliers (retailers and distributors) are able to deli ever products or services as and when required. Chain partners maintain high levels of collaboration and information technology in order to receive information concerning their customer needs .This reduces the amount of time it takes to deliver the product to the consumers (Davidson et al, 200I). Customers are satisfied when the amount of time taken to satisfy them is less than the amount of time they willing to wait, once an order has been placed (Spekman and Carraway, 2006).Chain partners have to be flexible in order to beat the customer deli every dead lines (Gunasekara, 2001). In order to be flexible, chain partners may be required to share information which helps them deli ever with the customers specified deli every dates (Ellram, 1999).

METHODOLOGY

The study took on a cross – sectional and quantitative study design. A cross – sectional design was adopted because the study was undertaken at one point in time and a quantitative approach was deemed fit to meet the objectives of the study. Data that was required was collected from within the downstream chain of manufacturing firms. A self – administered questionnaire was used to collect the data. Researchers were provided with letters introducing them to the respondents. They approached the firms with the introductory letters and requested to see persons in the downstream chain of manufacturing firms in Uganda. The statements in the questionnaire were anchored on a five (5) point Likert scale: - 5– strongly agree, 4 – agree, 3-Am not sure, 2 – disagree and 1 – strongly disagree. This was preferred because more often than not, respondents might truly feel neutral about a given topic, and presenting to these respondents a scale without a neutral midpoint can introduce respondent bias as respondents are forced to chose a more positive or negative response. Some researchers point out that in many cases respondents will accentuate the negative in an experience.

The study area was Kampala District in the central region. Kampala is the capital city of Uganda. The researchers focused on an indirect chain consisting of registered distributors and retailers of manufacturing firms both on large and small scale. As per the record of the Uganda Bureau of Statics, there were 504 distributors and 1544 retailers in Kampala. However, this figure is for the financial year 2009/2010and not yet up dated. According to Krejcie and Morgan (1970), a sample of 523 is appropriate for a population of 1544.

Measurement scales for the variables in the study were obtained from previous studies and revised to meet the Ugandan context in which the study was being undertaken. We assessed customer satisfaction from the perception of the downstream chain members. Scales for information sharing were obtained from Morgan and Hunt (1994), Doney and cannon (1997) for trust, Morgan and Hunt (1994) and McDonald and Gandz (1992) for commitment and Sabbath (1998) for technology while scales for customer satisfaction were obtained from Vazquez et al (2004), Walter, Mentzer and Croxton (2002) and Berry and Parasuraman (1991). Under information sharing, we looked at trust, commitment and information technology. Customer satisfaction was assessed in terms Customer loyalty, repeated purchases, inventory returns, quality and flexibility. Inventory management was measured using Gunasekaran and Patel (2001) .Inventory management measures included order lead time, inventory accuracy, inventory turns, inventory costs and inventory levels. Measures tested for reliability using the Cronbach Alpha Co-efficient. The collected data was analyzed using the Statistical Package for Social Scientists (SPSS). Correlation analysis was used to determine the nature of the relationship between the variables. We used the regression analysis to determine the variance in the dependent variable explained by independent variables (Inforsurv, 2006).

DISCUSSION OF FINDINGS

In this section, we present the findings of the study that was undertaken. The first part of this section presents the characteristics of the respondent firms and the second and third parts present the results of the regression and correlation analysis.

Characteristics of Respondents and Respondent Firms

Type of business

The results showed that 64.35% were retailers with 36.8% being male while 27.4% being females. There were 35.7% distributors with 18.3% being male while 17.5% being female. Majority of the respondents were retailers.

Type of business with highest qualification of respondent

The results showed that 13.6% of the respondents were of high school with 9.4% being retailers while 4.2% were distributors. There were 22.4% of the respondents who had diplomas with 14.4% being retailers while 8% were distributors, 34.6 had a degree with 23.8% being retailers while 10.8% were distributors and 24.9% had masters with 17.5% being retailers while 11.9% were distributors. According to the results, the proportion of retailers having the different qualifications was not significantly different from those of the distributors with the different qualifications. This means that the proportion of the retailers and distributors was equally distributed.

Type of business with age of respondents

The results showed that 17.6% of the respondents were below 25 years of age with 13.3% being retailers while 4.2% were distributors, 26.3% were between 25-35 years of age with 15.6% being retailers and distributors were 10.8%.27.2% were between 36-45 years of age with 19.3% being retailers 7.9% were distributors, 28.9% were 46+ years with 17.8% being retailers and 11% were distributors.

Table 1; Zero Correlation (N= 216-328)

Variables	Information sharing	Inventory management
Information sharing	1.00	
Inventory management	0.35**	1.00
Customer satisfaction	0.471**	0.394**
**Correlation Significant at 0.001 level 1-tailed test		

Source: Primary Data

Hypothesis 1: The relationship between information sharing and inventory management
There is a significant positive relationship between information sharing and inventory management. Information sharing and inventory management have Pearson correlation coefficient=0.350** and P< or = 0.0I.This means that high levels of information sharing lead to better inventory management.

Hypothesis 2; The relationship between inventory management and customer satisfaction
There is a significant positive relationship between inventory management and customer satisfaction. Inventory management and customer satisfaction have Pearson correlation coefficient of 0.394**and P< or = 0.01 meaning that better inventory management leads to high levels of customer satisfaction.

Hypothesis 3; The relationship between information sharing and customer satisfaction
There is a significant positive relationship between information sharing and customer satisfaction. Information sharing and customer satisfaction have Pearson correlation coefficient of 0.471 ** and P< or = 0.01 meaning that high levels of information sharing leads to high levels of customer satisfaction.

Table 2; Regression analysis

Predictors	R-square	Adjusted R-square	df	Mean s Square	
	0.248	0.24	2	2.934	
	Standardized coefficients		Un standardized Coefficients	T	
	B	Std Error	Beta		Sig
Constant	1.555	0.299		5.198	0.000
Information sharing	0.444	0.075	0.387	5.931	0.000
Inventory management	0.138	0.039	0.211	3.236	0.001

Source: primary data

The independent variables explain the dependent variable by 24.8%. Information sharing and inventory management predict customer satisfaction. This is showed by the level of significance for both being 0.000 for information sharing and 0.001 for inventory management. The beta coefficient for information sharing was 0.387 and inventory management being 0.211. The remaining 75.2 is the influence of other factors other than those studied in customer satisfaction for example company policy, the supply chain environment and the people providing the service, top management support.

DISCUSSION OF FINDINGS
The finding on the significant relationship between information sharing, inventory management and customer satisfaction agrees with the findings of other authors on the relationship between the variables. The findings indicate that information sharing affects customer satisfaction more than inventory management. The finding of the significant relationship is in agreement with scholars like Eckert (2007), (Wang, 2002) and Fawcett etal, (2007) who assert that information sharing and inventory management have a positive effect on customer satisfaction.

According to Fawcett etal.,(2007) information sharing enables chain partners get information on inventory levels and position, sales data and forecasts, order status, production and delivery schedules and capacity and this information is transferred up the chain such that manufacturers produce such items. Customers are satisfied when suppliers fulfill their orders on time. This makes channel partners keep buffer stocks to full fill customer orders or enter into long term relationships which require commitment and trust (Wang, 2002).information sharing and inventory management enhance chain partner flexibility, repeat purchases, customer loyalty, reduced inventory returns due to improved quality (Wang, 2002, Eckert (2007) better inventory management leads to high levels of customer satisfaction. Without information sharing and good inventory management, customer requirements cannot be met on time. Chain partners have to make investments in both information technologies and customer collaboration in order to get information shared and inventories well managed.

Information in the downstream chain of manufacturing firms in Uganda is shared using different avenues like internet (emails and websites),mobile phones, trade associations, seminars and workshops, umbrella bodies but very few chain partners have systems like Electronic data interchange, enterprise resource planning systems to mention

but a few. Firms with such systems are very few .customers may send an email in case they want to buy an item and others will make phone calls to their supplier and the supplier will deli ever in case the item is need at that particular time and incase the item is not in stock then the supplier will inform the customer and when the item will be stocked. All in all the volume of information shared with the downstream chain is still low due to due to lack of trust and commitment among the downstream chain partners supply chain partners.

The finding that information sharing influences customer satisfaction more than inventory management agrees with the works of Fawcett etal, (2007).According to him, information is the most important because without information both inventory management and customer satisfaction will not take place. This is because the downstream chain partners need information on what to stock, in what quantities, what changes should be made in the products to mention but a few

Implications Of The Study

Practical

Chain partners should collaborate amongst themselves which will facilitate information sharing, lead to better inventory management hence leading to high levels of customer satisfaction. This enables chain partners to develop willingness amongst them which will increase the level of information sharing.

The ministry of trade should give loans to USSIA and PSFI which will be given to the retailers and distributors to invest more in information technology which will then lead to improved information sharing and inventory management.

It is recommended that chain partners should implement information systems. systems like EDI (electronic data interchange),ERP systems (enterprise resource planning systems),POS (point of sale systems and many others should be installed to provide information that will then be used to manage inventories very well among chain partners hence leading to customer satisfaction. These systems will be used to manage inventory levels, reduce inventory costs, lead time, increase inventory turns and customer service. They will promote flexibility, on time delivery hence leading to customer satisfaction.

Theoretical implications

Our study looked at information sharing, inventory management and customer satisfaction in the downstream chain. Investment in information technology and high levels of collaboration were said to be very import factors for both information sharing, inventory management and customer satisfaction. Information sharing and inventory management are widely studied in relation to performance and our study makes a number of contributions to the theory and study of information sharing and inventory management. First and foremost, we studied information sharing, inventory management and customer satisfaction in the downstream chain of manufacturing firms in Uganda. The study therefore contributes to an understanding of information sharing, inventory management and customer satisfaction in a developing country. Given that most studies on information sharing, inventory management and customer satisfaction in the downstream chain have been undertaken more in developed countries and few in the developing countries, further research in the area be carried out in downstream chains.

The second implication of our study is that information sharing has a higher impact in the study than inventory management. Despite that the impact of the two variables is not the same both variables are significant predictors of customer satisfaction. This has been covered in studies of Fawcett etal, (2004).The findings is the focus has been put on information sharing and inventory management and non has been put on how these should be improved.

Limitations of the Study and Directions for Future Research

1. The researcher had to use a longitudinal research design but due to the time constraint, she decided to use the quantitative and cross sectional correctional survey research design.
2. Little research on information sharing, inventory management and customer satisfaction in downstream chains of manufacturing firms had been carried out here in Uganda, there was limited literature and scarcity of local secondary data hence foreign data was used in lieu
3. The measures used were used in the developed world and no measures had been developed for developing countries.
4. Little empirical research in the area of in Uganda has been carried out.

5. The research was carried out only in Kampala region, so the findings cannot be applied to other regions in Uganda. The measurement scales used were those used in the developed world and this could affect the research because of the gaps carried with the measurement scales
6. The issues looked at like customer collaboration were issues that could not be studied in a short period of time

Areas of further research

- Similar research be carried out in other regions in Uganda
- Longitudinal survey be carried out in the same area
- Other factors like the supply chain environment, top management support and people providing the service should be considered.
- Further research on the variables should be carried out in the upstream chain

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BIBIOGRAPHY

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