THE EFFECT OF TRUST AND COMMITMENT ON VERTICAL COLLABORATION AND PHYSICAL DISTRIBUTION SERVICE QUALITY

Friday Derek, *Benjamin R Tukamuhabwa and Sarah Eyaa
Department of procurement & logistics management, Makerere University Business School
P O BOX 1337, Kampala- Uganda
*tukabenjah@yahoo.com

Abstract

This research was intended to investigate the effect of trust and commitment on vertical collaboration and physical distribution service quality in the soft drinks' demand chains in Uganda. The study was prompted by the fact that research on physical distribution service quality in Uganda is still sparse and the effect of trust and commitment on the performance of soft drinks demand chains is less explored. This study was purposely conducted to significantly contribute in this area by adding knowledge on the factors affecting the performance of soft drinks' demand chains. Data was collected from 270 manufacturers and distributors in Kampala District which is the capital city of Uganda. The findings revealed significant positive relationships between trust, commitment and physical distribution service quality. Commitment also had a positive effect on vertical collaboration while trust did not significantly relate to vertical collaboration. The most significant predictor of physical distribution service quality however, was vertical collaboration and all the study variables accounted for 13% of the variation in Physical distribution service quality. This study contributes in the area of physical distribution service quality and also provides implications for theory and practice.

Keywords: *Trust, Commitment, Vertical Collaboration, Physical Distribution Service Quality, Beverages, Uganda*

1. Introduction

The beverages sector in Uganda operates amidst stiff competition that has exacerbated the cross over of several companies into unfamiliar territories such as mineral water and energy drinks (The New vision, February 3rd, 2009). Consequently, firms wishing to succeed in this volatile and highly competitive environment must strive to devise innovative ways of enhancing their performance and competitiveness. One of the critical areas on which such firms should focus so as to improve their competitive advantage is Physical Distribution Service Quality (PDSQ). Although the need for physically moving, storing and presenting goods is basic to trade, the importance of distribution and the nature of services expected by the purchaser have evolved with the business environment (Mentzer et al; 1989). As cited by Kennedy (2011), Cheung, et al; (2006) stipulated that effective service logistics management lowers costs and increases service value which positively impacts customer satisfaction. PDSQ forms part of a broader logistics that ranges from marketing, customer services, to the delivery of soft drinks to end consumers (Friday et al; 2011).Uganda's beverage industry which manufactures carbonated, non carbonated and non alcoholic soft drinks, relies substantially on retail businesses to distribute products to customers (Kyamutetera, 2009; Ohairwe, 2008). These retailers, constituting over 80% of Uganda's businesses transact on the basis of arms length relationships (Simatupang and Sridharan, 2004) and this could provide a partial explanation for their deficient performance with regard to Physical Distribution Service Quality (PDSQ). The food and beverage industry has a unique role to play in expanding economic opportunity since it is universal to human life and health (Pfitzer and Krishnaswamy, 2007). Despite acknowledgement of the crucial role of soft drinks to the healthcare sector, the general community and the entire

economy, the manufacturers and distributors have failed to make use of their trust and commitment to ensure timely delivery, availability of products and development of a reliable physical distribution system. The soft drinks demand chains are marred with long delivery cycle times, non availability of products in certain parts of the country and increased customer complaints (Durgavich et al; 2008; Rabinovich and Bailey, 2004). Coca- Cola Sabco (CCS) a key bottler for Coca- Cola in East and South-Africa and Asia also faced distribution challenges emanating from poor infrastructure in East- Africa where traditional methods of distribution were costly and ineffective. This prompted CCS to deign innovative manual distribution centers with distribution network built through small scale enterprises (Pfitzer and Krishnaswamy, 2007). This inefficiency in the distribution system was also confirmed by the CEO Century Bottling Ltd, Mr. Basil Gadios who realized an actual need to improve the PDSQ of soft drinks to the far corners of the country (Kyamutetera, 2009). Kant et al; (2008) in their study about Coca- Cola Enterprises (CCE) argued that distribution vehicle route optimization results into efficient product delivery. Prior research also indicates the role of Physical Distribution Services in internet retailer–customer transactions as a value-added service for which markups can be obtained so long as premium service performance is promised (Rabinovich, 2008). Parasuraman et al; (1985) further concluded that an acceptable quality of service throughout the supply chain is recognized as a prerequisite for successful delivery to meet the customer's expectations. To be considered of high quality, a physical distribution system should be reliable and ensure availability and timely delivery of products to end users (Rabinovich and Bailey, 2004). Uganda's physical distribution functions such as transport, warehousing, packaging, information management, order processing and handling, have created more of challenges than support in improving PDSQ (Bimbona, 2008; Masiga, 2009; Heloise, 2006). These challenges are worsened by the wrong demand forecasts based on inadequate customer information shared among the manufacturers and distributors, inability to align incentives and synchronisation of process decisions in the collaboration arrangements (Simatupang and Sridharan, 2004; Okello, 2007).Current studies also show that PDSQ inefficiencies can be eliminated if not minimized through vertical collaboration between the soft drinks manufacturers and the distributors downstream, (Shan and Norm, 2007; Stephen, 1997).

Although a study by Friday et al; (2011) reveled that vertical collaboration positively influences physical distribution service quality, it was opined that some other variables that are likely to increase the effect of vertical collaboration on PDSQ required further investigation. In this particular study, we introduce the variables of trust and commitment and believe that these two variables not only improve the level of vertical collaboration, but also have a direct positive relationship with PDSQ. Previous scholars suggested that effective collaboration depends on the level of trust, commitment and the quality of information shared in the demand chain, (Danese, 2007; Goran, 2005; Janjaap and Ghijsen, 2005; Zineldin and Jonsson, 2000). Simatupang and Sridharan (2005) and Soonhong et al; 2005) further added that trust and commitment can increase the level of integration. This is in line with the social behavioural theories which postulate that honesty, full communication and exchange occur in the presence of trust (Chadwick-Jones, 1974). This, not withstanding, Sahay (2003) argued that although it has been depicted that trust is a complex concept in the literature which plays a key role in supply chain relationships, supply chain managers are not able to foster trust across all members in the supply chain. In Uganda, trust and commitment are below expectations with the business relationships constrained by suspicions, betrayal and dishonesty. This was blamed on weak or no organizational and administrative structures, poor sharing mechanisms, weak governance systems, and a unique cultural context under which collaborations exist (Muhwezi, 2009). Confirming this, Tukamuhabwa et al; (2012) also asserted that

trust and commitment between buyers and customers in Uganda and specifically in the commercial banking sector is inadequate. Where as literature provides empirical evidence on the effect of vertical collaboration on PDSQ, 60% of collaboration studies undertaken focused on manufacturing firms and suppliers as compared to 56% between the manufacturers and distributors, (Sandberg, 2007). More to that, most of the studies on collaboration and Physical Distribution Service Quality such as Simatupang and Sridharan, (2002, 2004, and 2005; Rabinovich and Bailey2004) were all inclined to the developed countries. The notable exception are scholars such as (Eyaa, et al; 2010; Friday, et al; 2011; Muhwezi, 2008; Ntayi, et al; 2009; Ntayi and Eyaa, 2010) who have conducted studies on collaboration in Uganda, although none has addressed the contribution of trust and commitment on vertical collaboration and PDSQ in the beverage industry demand chains. Yet other scholars reveal the need for communication technologies, trust and commitment in order to increase the effect of vertical collaboration on PDSQ (Danese, 2007; Goran, 2005; Janjaap and Ghijsen, 2005; Sambasivan, et al; 2009; Simatupang and Sridharan, 2005; Soonhong. et al; 2005; Zineldin and Jonsson, 2000). Communication technologies were however not included in this study, but this will be addressed in the next paper. This particular paper was meant to provide empirical evidence on the influence of trust and commitment on vertical collaboration and PDSQ in order to help soft drinks companies achieve timely delivery and availability of soft drinks to end consumers using a reliable distribution system. Specifically, the purpose of this research is to determine how trust and commitment affect vertical collaboration and Physical distribution service quality, to examine the effect of trust on commitment and the impact of vertical collaboration in the existence of trust and commitment on Physical Distribution Service Quality in Uganda's soft drinks industry. The study will also suggest how trust and commitment can be enhanced to improve vertical collaboration and physical distribution Service Quality in Uganda's soft drinks demand chains. Other parts of the paper include; the literature review, methodology, presentation and discussion of findings, conclusion and implications, research limitations and suggestions for further research.

2. Literature review

The contemporary global competition has forced organizations to compete on the basis of their demand chains as opposed to individual entities by improving the PDSQ of their products through provision of high customer service levels while minimizing the logistical related costs. According to Ju¨ttner et al; (2007), the demand chain comprises all the demand processes necessary to understand, create, and stimulate customer demand. Companies embracing the demand-led business model (demand chain masters) focus on coordinating and managing the demand processes (DCM) to obtain a competitive advantage by providing superior customer value (Hilletofth, 2011).The effective management of physical distribution process within the demand chain has been long recognized as a key element for gaining and sustaining competitive advantage and enhancing firm performance (Cho et al. 2008; Mentzer and Williams 2000). Physical distribution service quality is concerned with timely and reliable flow of goods from the receipt of an order until the goods are made available to the customer (Rabinovich and Bailey, 2004; Rabinovich, et al; 2006). It requires optimization of logistics elements; production planning and demand forecasting, information management, routing and tracking, transportation, order processing, material control and warehousing (Aguezzoul, 2007; Krauth, et al; 2003) to ensure availability of products in a timely and reliable manner, (Rabinovich and Bailey, 2004; Simatupang and Sridharan, 2005; Soonhong. et al; 2005). The overarching goal of the physical distribution function is to effectively and efficiently move products to end customers by eliminating the time, effort, and inventory waste within the manufacturing-distribution system (Mentzer et al. 2004). One of the strategies undertaken by

manufacturers and distributors is the development of vertical collaborations between themselves and with shipping and other transportation firms (Venus, et al; 2009) to allow quick exchange of information, decision synchronization and incentive alignment in order to improve the PDSQ and therefore consolidate their competitive strength in the global markets. Vertical collaboration according to Simatupang, (2004); Wang and Archer, (2007) is an effort by two or more organizations to achieve results that they cannot achieve by working in isolation. Through the sharing of information, decision synchronization and incentive alignment the demand chain members are able to maximize their market share, minimize running costs and ensure reliable and timely delivery of products to customers, (Gunasekaran, et al; 2004; Sandberg, 2007). But in order to achieve supply chain integration, commitment is a critical success factor, with trust being pivotal in fostering such commitment (Tsai, 2006).Figure 1 shows the proposed research frame work indicating the variables that influence PDSQ.

FIGURE 1: Proposed Research Frame Work (see at the end of the paper)

The essence of the conceptual frame work for this study is that we believe Physical Distribution Service Quality requires a commitment between and among demand chain partners, and trust is a critical element to sustain such commitment. Conceptually, as shown in Figure 1, this study proposes that higher levels of trust and commitment between the demand chain partners will increase the service quality in the physical distribution of soft drinks in Uganda. This study also postulates that the demand chain partners' trust and commitment within their relationship boost their levels of collaboration and this in turn improves their physical distribution service quality.

2.1 Trust, commitment and vertical collaboration

According to Zineldin and Jonsson (2000), distribution relationships have been managed basing on aspects of ownership and vertical integration and the use of power. Power has a significant influence on factors that are critical to the relationship between manufacturers and distributors on the level of cooperation. Accordingly, dependence on power provides the platform on which, process integration of logistical activities can be developed (Chwen, et al; 2006; Sandberg, 2007). When a party is dependent, they value the collaborative relationship and want to maintain it (Chwen, et al; 2006; Janjaap and Ghijsen 2005; Sandberg, 2007). It is however argued that, vertical collaboration will require two facets of trust: mutual and interactive trust. Interactive trust is endless and describes a continuous process of trust which is more appropriate for decision synchronization, information sharing and incentive alignment. Mutual trust on the other hand is temporary and describes a discontinuous process of trust, thus making it inappropriate for longer and stronger relations among manufacturers and distributors, (Goran, 2005). Trust is frequently defined as a willingness to take risk (Mayer et al; 1995) as cited in Kwon and Suh (2005) and a willingness to rely on an exchange partner in whom one has confidence. Trust reflects one party's belief that its requirements will be fulfilled through future actions undertaken by the other party (Zaheer and Venkatraman, 1995). Trust is a generalized expectancy held by a member in the demand chain that the word of another member can be relied upon. However, Bigne and Blesa, (2003), state that most studies of the channel define trust as the degree to which a firm believes that its trading partner is honest and/or benevolent .Vertical collaboration on the other hand is an effort by two or more organizations to achieve results that they cannot achieve by working in isolation (Wang and Archer, 2007). Sandberg (2007) and Chwen, et al; (2006), introduce interdependence, openness and trust where there is risk, rewards and cost sharing as other dynamics in collaborations between manufacturers and distributors. Studies further show that collaborative relationships among manufacturers and distributors rely on forms of exchange characterized by high levels of trust

(Zineldin and Jonsson, 2000). Previous research has also linked increasing levels of trust to relationship commitment.

Commitment is the enduring desire to maintain a valued relationship in the demand chain. It predicts the successfulness and duration of collaborative relationships between manufactures and distributors (Zineldin and Jonsson, 2000). According to Kwon and Suh (2005), no commitment is consummated unless the partners recognize the existence of unbroken trust. Ryu et al; (2009) also argued that commitment is preceded by high levels of inter organizational trust. Members must demonstrate a willingness to commit to a given relationship through specific investments of resources to the agreed upon logistical activities or projects in the demand chain for a successful collaboration (Chwen, et al; 2006). Collaborative relationships require trust and commitment for a long term cooperation together with willingness to share risk (Sahay and Maini, 2002) as cited in Sahay, (2003). According to Nakatani, (2003), commitment is a premise needed for the establishment of collaborative relationships. Simatupang and Sridaharn (2002) also agree that commitment is the most essential feature for the success of any collaboration in the demand chain. Ryu et al; (2009) found out that both trust and commitment developed as a result of interaction between two organizations result into collaboration between firms and helps to maintain this collaboration and that supply chain collaboration in turn improves the supply chain partners' operational performance. In agreement, Morgan and Hunt (1994) revealed that the negative influence of a relationship commitment reduces collaboration and relationship success. Narayandas and Rangan (2004) further add that trust which has a positive influence on commitment, improves the relationship between retail buyers and vendors.

To emphasize the critical role of trust on commitment, Kwon and Suh, (2005) opined that it is difficult to imagine a serious business commitment without trust. They also maintain that no commitment is consummated unless the partners feel that unbroken trust has been established. Katrina, (2003) on the other hand reveals that commitment is an essential characteristic that separates collaboration from preceding relationships in supply chains. For example, there is greater commitment in collaboration to allow companies share a vision and employ sophisticated processes such as joint planning and operation in the service of that vision. Parties are able to develop demand chain collaborations if they invest a great deal of resources, cultivate trust and commitment, and share long-term strategic goals. At an operational level, implementation of vertical collaboration in the demand chain calls for commitment through driving change on; shifting roles on who handles which activity, building personal relations to allow quicker information sharing, manager and worker buy-in and commitment, throughout the entire demand chain to achieve any improvements in the relationships, (Vereercke and Muylle, 2006). Effective collaborative planning depends on the level of trust, commitment and the quality of information shared in the demand chain, (Danese, 2007; Goran, 2005; Janjaap and Ghijsen, 2005; Zineldin and Jonsson, 2000). Trust and commitment have an effect on both the level of integration of logistical activities and information shared in the demand chain. Trust and commitment can increase the level of integration of logistical activities among the demand chain members downstream. The reverse is true if the level of trust and commitment is low (Simatupang and Sridharan, 2005; Soonhong. et al; 2005). It is also argued that commitment is a success factor issue for achieving supply chain integration, with trust being the root of fostering such commitment (Tsai, 2006) .In line with previous scholars such as Garbarino and Johnson, (1999), we

believe that commitment involves vulnerability and sacrifice, and therefore emerges only in relationships in which trust is already established. We therefore derive the following hypotheses;

Hypothesis 1: Trust increases the level of vertical collaborations in the demand chain.

Hypothesis 2: Commitment increases vertical collaborations between the manufacturers and distributors in the demand chain.

Hypothesis 3: Trust improves the level of commitment among partners in the demand chain

2.2 Trust, commitment and Physical Distribution Service Quality

According to Anderson and Narus (1990), trust in manufacturer-distributor relationships refers to a firm's belief that another company will perform actions that will result in positive outcomes, and that the other company will not take unexpected actions that result in negative outcomes for the firm. Morgan and Hunt (1994) stated that a combination of both commitment and trust produce outcomes that promote effectiveness, productivity and efficiency. Commitment has also been shown to be a determinant of critical factors related to group performance, such as more open exchanges of relevant ideas and feelings, greater clarification of goals and problems, greater adaptability in responding to unforeseen circumstances, greater satisfaction with efforts, and greater motivation to implement decisions (Aubert et al; 1996). Fawcett et al; (2006) also argued that commitment beyond an organization's boundaries is necessary in order to achieve Supply chain advantage. The sharing of information such as inventory data occurs where there high levels of trust and commitment among the demand chain members. High levels of trust will mean preclusion of information distortion thus minimizing the bull whip effect whose implications include: excess costs, excess inventories, slow response and lost profit, to increase the quality of the physical distribution system, (Vereercke and Muylle, 2006; Zhenxin, et al; 2001). Similarly, Ganesan (1994) proposed that a key component of trust is the extent to which the customer believes that the vendor has intentions and motives beneficial to the customer and is concerned with creating positive customer outcomes. The elimination of the bull whip effect that creates certainty in production and distribution in the demand chain given its effect on demand forecasting, order batching, and rationing inventory, allows demand chains to create reliable and timely physical distribution systems (Zhenxin, et al; 2001). Tracey et al; (2010) also realized that trust and commitment have an impact on both satisfaction and word-of-mouth. Anderson and Weitz (1992) saw manufacturer-distributor commitment as the adoption of a long-term orientation towards the relationship. They proposed that mutual commitment results in "channel members" working together to serve the needs of end-customers' more effectively – thus increasing mutual profitability beyond what either member could achieve by operating independently. Suppliers who are perceived as being concerned with positive customer outcomes will therefore be trusted to a greater extent than suppliers who appear interested only in their own welfare (Caceres and Paparoidamis, 2007). From this discussion, we propose the following hypotheses;

H4: There is a significant positive relationship between trust and Physical distribution Service Quality

H5: Commitment positively affects Physical distribution Service Quality

2.3 Vertical collaboration and physical distribution service quality

Physical distribution service quality is concerned with timely and reliable flow of goods from the receipt of an order until the goods are made available to the customer (Rabinovich and Bailey, 2004; Rabinovich, et al; 2006). It requires optimization of logistics elements; production planning and demand forecasting, information management, routing and tracking, transportation, order processing, material control and warehousing (Aguezzoul, 2007; Krauth, et al; 2003) with the aid of

communication technologies to allow efficient sharing of information, decision synchronization and incentive alignment, to achieve improvement in the customer service levels, (Simatupang and Sridharan, 2005; Soonhong. et al; 2005). Dyer and Singh (1998) opined that when firms collaborate, they are often in position to share knowledge and resources. Collaboration is a value adding resource for firms seeking to reduce costs, increase their agility and satisfy their clients (Spekman et al; 1994). Ryu et al; (2009) further added that when companies collaborate, they open their information, knowledge and assets to their partners. Due to globalization aspects, organizations are competing as demand chains for global customers to meet the customer service levels. Manufacturers and distributors form alliances with shipping and other transportation firms (Venus, et a; 2009) to allow quick exchange of information, decision synchronization and incentive alignment so as to consolidate their competitive strength in the global markets (Simatupang, 2004). The sharing of information, decision synchronization and incentive alignment aid the members to maximize their market share, minimize running costs and ensure reliable and timely delivery of products to customers, (Gunasekaran, et al; 2004; Sandberg, 2007). Collaboration enhances the value derived from each other, lowers costs and risks, creates synergies and yields more net value delivered from the value chain relative to others in the industry (Sahay, 2003). It is also argued that higher levels of integration increase the overall performance of the demand chain (Sandberg, 2007). Internet retailer relationships with suppliers tap on global opportunities through vendor managed inventory and Just in Time inventory techniques by employing the drop-shipping strategy by the end physical distribution service providers to allow timely and reliable delivery of products to online buyers (Rabinovich, et al; 2008). However, this is only possible through integration of the logistical activities with the help of communication technologies (Zineldin and Jonsson, 2000). Rahul et al; (2009) also argued that collaboration between both internal and external partners improves physical distribution performance. Vertical collaboration enables the suppliers to quickly respond to customer expectations, good product innovations and anticipate customer needs (Tsai, 2006). The integration of supply chain processes can provide an effective means by which costs can be reduced and customer service levels improved (Power 2005) .From the discussion, the following is hypothesized;

Hypothesis6: Vertical collaboration increases the level of physical distribution service quality in the demand chain.

3. Methodology

Cross – sectional and quantitative research designs were used in this study that was carried out in 2009 in Kampala district of Uganda. The study population was all registered beverage manufacturing firms located in Kampala district .The research was geographically confined to Kampala because, according to the Uganda Bureau of Statistics Business Register of 2006/2007, 61.4% of the beverage manufacturing firms are located in Kampala, probably due to the fact that Kampala is the capital city of Uganda. According to the Uganda Bureau of Statistics Business Register (2008), there are 31 manufacturers and 664 distributors of soft drinks in Kampala, giving a population size of 695. From each category of respondents, a sample was selected. The sample size was determined using the Krejcie and Morgan (1970) sample size table and the sample was randomly selected from the population by picking indiscriminately without replacement until the required number was obtained. The population and sample size are as detailed in table 1.

Table 1: Population and Sample Size (see at the end of the paper)

The unit of analysis in this study was the vertical collaborative relationship between manufacturers and distributors. We examined the perceptions of the manufacturers and distributions on the

independent variables and physical distribution service quality of the soft drink demand chains. Measurement scales for the study variables were obtained and adapted from previous studies. Scales for information sharing, decision synchronization and incentive alignment were acquired from Simatupang and Sridharan (2005), Simatupang and Sridharan (2004), Soonhong et al; (2005) and Vereercke and Muylle (2006). Physical distribution service quality was measured using scales of availability, timeliness, reliability obtained from Rabinovich and Bailey (2004) while the measures for trust and commitment were obtained from Zineldin and Jonsson (2000).These measurement scales were tested for reliability using the Cronbach Alpha coefficient and all coefficients were above the acceptable cut – off point of 0.5 (Cronbach ,1951). We were conscious of research ethics and ensured that the data were not collected with the intention of harming anyone and that the entire research process was ethical. We also ensured that matters that were indicated by the respondents as confidential were kept confidential.

The required data was collected from the respondents using a self administered questionnaire in which the responses to the statements hinged on a five (5) point Likert scale ranging from (1 – Strongly disagree, 2 – disagree, 3 – neither agree nor disagree, 4 – agree, 5 – strongly agree).A five (5) point Likert scale 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 since respondents are forced to chose a more positive or negative response. The Likert instrument was used because it is believed to have acceptable levels of reliability and validity across a variety of settings (Elmuti, 2003). In this study, a survey was used since surveys are able to provide a "panoramic view", giving a breadth of coverage regarding a subject at a specific point in time (Denscombe 2003). Since pre-testing is regarded as important to reliability (Jones, 2008), the questionnaire was pre – tested to ensure appropriateness in wording, format and sequencing of questions .During the data collection process, the introduction letters for the research assistants were obtained from the university in order to make it easy for the respondents to identify them. Phone calls were made to the respondent firms and appointments for distributing the questionnaire were set. Appointments were made to determine the convenient time when the questionnaire could be administered. At each company, permission was sought from the administrators in charge before the questionnaires were distributed. Once collected, the questionnaires were thoroughly checked to ensure that they were all correctly filled in. The responses in the questionnaires were coded and entered into the SPSS (Statistical Package for Social Scientists) software (version 17) for analysis. Spearman's Correlation analysis was used to establish the magnitude and direction of the relationship between the independent variables and dependent variable while multiple regression analysis was used to determine the variation in PDSQ that was explained by the independent variables in the model.

4. Results and Discussion

In this section, we present and discuss the findings of our study. In the first part of this section, we present the characteristics of the respondent firms. In the second part, we present the results of the correlation and regression analysis. In the third and last part, we discuss the findings of the study.

4.1Characteristics of Respondent Firms

Regarding the category of respondents, the majority of the respondent firms (95.4%) were distributors while manufacturers accounted for 4.6% of the firms. While for the number of Employees in the Respondent Firms, 1% of the firms had less than 4 employees, 89% employed between 5 – 50 people and 10% had more than 50 employees.

4.2 Correlation Analysis results

A correlation analysis was done to determine the strength and direction of the relationships between the independent variables and physical distribution service quality. The results of the correlation analysis are represented in table 2 in the appendix.

Table2: Correlation analysis results (see at the end of the paper)

The correlation analysis in Table 2 shows that there was no significant relationship between vertical collaboration and trust ($r = .110$, $p > .05$). Thus H1 is not supported. This implies that issues of honesty, suspicion of other party's action, keeping of promises and consideration of another party's business success to be important between manufacturers and distributors may not lead to improved vertical collaboration in the soft drinks demand chain. The findings however show a significant positive relationship between commitment and vertical collaboration ($r = .202$ $p < .01$), supporting H2. This implies that there will be an improvement in vertical collaboration between manufacturers and distributors where both parties show intent to maintain and develop the relationship. The study findings also show significant positive relationships between trust and commitment ($r=.300$, $p<.01$) and this supports H3, implying that when trust increases among partners in the soft drinks demand chain, the level of commitment also increases. In addition, there were significant positive relationships between trust and physical distribution service quality($r=.140$, $p<.05$) and commitment and physical distribution service quality($r=.212$, $p<.01$) and these support H4 and H5 respectively. The Findings further showed a significant positive relationship between vertical collaboration and physical distribution service quality ($r = .342$ $p < .01$) hence supporting H6 .This implies that sharing of point of sale data, aggregate demand forecast, incentive alignment and making of joint decision between the manufacturers and distributors leads to an improvement in the Physical distribution service quality

4.3 Regression Analysis

A hierarchical regression analysis was run to determine the impact of each of the independent variables on the dependent variable. We controlled for firm category and organization status because we suppose that these two have the ability to influence physical distribution service quality. The purpose of controlling for these factors is to ensure consistency of the study results in the different firm categories and organization statuses. The results of the hierarchical regression analysis are shown in the table;

Table 3: Hierarchical Regression Analysis Results (see at the end of the paper)

In model 1, we controlled for firm category to find out if this control variable was a significant predictor of physical distribution service quality. Firm category accounted for only 0.2% (R Square = 0.002) of the variation in physical distribution service quality and it was not significant in explaining physical distribution service quality (sig. = 0.549). In model 2, organization status was added to firm category and the new model accounted for 0.6% (R Square = 0.006) of the variation in physical distribution service quality. The model (sig. = 0.833) comprising the 2 variables (firm category – sig. = 0.553; organization status – sig. = 0.935) were found to be non – significant predictors of the independent variable.

In model 3, we added trust to the model and the independent variables of firm category and organization status are found to be non – significant predictors of physical distribution service quality. Trust was also found not to be a significant predictor of physical distribution service quality (sig=0.133). The model accounted for 0.9% of the variation in physical distribution service quality. In model 4, commitment was added to the model and the model became significant in predicting physical distribution service quality (sig. = 0.004). This model accounted for 44% of the variation in physical distribution service quality. Of the 4 variables in the model, only commitment was a

significant predictor of physical service distribution service quality at this stage. In model 5, vertical collaboration was added to the model and the significance of the model in explaining physical distribution service quality improves to 0.000. This model accounted for 13% of the variation in physical distribution service quality. Vertical collaboration and commitment are the only significant predictors of the dependent variable. On the whole, the independent variables explain up to 13% of the variation in PDSQ. In the regression model, commitment and vertical collaboration were significant predictors of physical distribution service quality while trust was not. Among the variables, vertical collaboration was the strongest predictor of PDSQ with the highest standardized Beta value of 0.317. We can therefore infer that demand chain partners in Uganda's Soft drinks firms essentially share information, decision making and where possible have incentive alignment.

4.4 Discussion

The study findings revealed no significant relationship between trust and vertical collaboration in Uganda's soft drinks demand chains. Although these findings contradict previous scholars such as Zineldin and Jonsson (2000) who recognized the existence of a positive relationship between trust and collaboration among manufacturers and distributors, we argue that vertical collaboration in soft drink demand chains in Uganda may not necessarily hinge on trust but dependence on power. Previous scholars have also argued that power has a significant influence on factors that are critical to the relationship between manufacturers and distributors on the level of cooperation (Chwen, et al; 2006; Sandberg, 2007). This argument is also in line with other scholars who contend that when parties are dependent, they value the collaborative relationship and want to maintain it (Chwen et al; 2006; Janjaap and Ghijsen 2005; Sandberg, 2007). It has also been further asserted that mutual trust is not appropriate for longer and stronger relations among manufacturers and distributors (Goran, 2005). In Uganda's soft drinks demand chains, the partners especially distributors are SMEs who have relatively lower bargaining power than their suppliers (manufacturers) owing to their relatively low capital base, small scale operation and stiff competition to win dealership. This is further supported by Eyaa and Ntayi (2010) who contended that SMEs in Uganda are fond of bidding for contracts in which they do not posses competences by falsifying documents during the bidding processes. They are therefore susceptible to dishonesty, suspicion and failure to keep promises which erode trust. This implies that soft drinks manufacturers cannot collaborate with their distributors basing on trust but instead they use their (manufacturers) superior status to manipulate them. Distributors who are always in relatively inferior positions have no alternative option other than succumbing to the power of soft drinks manufacturers and to collaborate with them.

From the findings, we identify a significant positive relationship between commitment and vertical collaboration. This implies that vertical collaboration between manufacturers and distributors improves where both parties show intent to maintain and develop the relationship. These findings are in conformity with previous scholars such as (Chwen et al; 2006; Sahay and Maini, 2002; Sahay, 2003) Simatupang and Sridharan, 2002; Ryu et al; 2009; Morgan and Hunt 1994; Danese, 2007; Goran, 2005; Janjaap and Ghijsen, 2005; Zineldin and Jonsson, 2000). Although the level of trust in Uganda is low, we argue in this particular case that due to the stiff competition in Uganda's beverage sector, beverage companies are forced to get committed to their demand chain partners so as to gain competitive advantage. More to that, distributors must be committed in order to maximize profit and in addition to have their dealerships renewed. A positive relationship was further observed between trust and commitment among soft drinks demand chain partners. In agreement with prior scholars, we believe that as trust increases between distributors and manufacturers in Uganda's soft drinks sector, their relationship commitment will follow suit. These

findings also corroborate those of previous researchers such Kwon and Suh (2005), Ryu et al; 2009; Sahay and Maini, 2002; Sahay, 2003) who recognize the role of trust and contend that trust leads to commitment among the parties.

Trust and commitment were positively and significantly related to PDSQ. This is in line with Morgan and Hunt (1994), Aubert et al; (1996), Fawcett et al; (2006) Vereercke and Muylle (2006) Zhenxin, et al; (2001) Similarly, Ganesan (1994) Zhenxin, et al; (2001). Tracey et al; (2010) also confirmed this when the argued that trust and commitment have an impact on both satisfaction and word-of-mouth. These findings are also in agreement with Anderson and Weitz (1992) who contended that manufacturer-distributor mutual commitment results in "channel members" working together to serve the needs of end-customers' more effectively. In a similar line of argument, other researchers such as Caceres and Paparoidamis (2007) indicated that customers offer more trust to those suppliers who are perceived as being concerned with positive customer outcomes. We argue in this case that the positive customer outcomes in Uganda's soft drinks demand chains constitute the PDSQ. Indeed more trust between distributors and manufacturers is likely to improve their level of commitment and they are likely to pursue long term goals which consequently lead to quality services for the customers. It should however be noted that the variables of commitment and collaboration were the only significant predictors of PDSQ. This may not be surprising since we have earlier insinuated that the level of trust in Uganda's business transactions and more so between soft drinks manufacturers and distributors is low. PDSQ in the soft drinks demand chains is likely to improve through commitment and collaboration resulting from power dependence, the need for dealership contract renewal by distributors and the need by manufacturers to operate efficiently and effectively following the intense competition prevalent in the soft drinks industry in Uganda.

5. Conclusion and Recommendations

The findings of this study have confirmed that commitment and vertical collaboration are significant predictors of PDSQ in the demand chains of soft drinks in Uganda. Our model had three independent variables including trust which did not significantly predict PDSQ. It was argued that this could be due to the fact that collaboration and the performance of demand chain partners especially distributors and manufacturers in Uganda's soft drinks sector are not necessarily determined by trust. This study corroborates other previous studies in Uganda such as Tukamuhabwa et al; (2012) and Muhwezi (2009) which found out that there was lack of trust among partners in Uganda's business dealings. In this particular study, we argue that commitment and collaboration between distributors and manufacturers in the demand chain originate from power dependence, the need for distribution contract renewal by distributors and the need by manufacturers to operate efficiently and effectively following competition pressures. In this way, we make our contribution on the importance of commitment and collaboration in soft drink demand chains in developing countries. Our model explained only 13% of the variation in physician distribution service quality. This may not be surprising given that a recent study by Friday et al; (2011) revealed that among the three collaboration dimensions of information sharing, decision synchronization and incentive alignment, only incentive alignment significantly predicted PDSQ in Uganda's soft drinks demand chains. Since our model explained up to 13% of the variation in PDSQ, this study provides a spring board for other researchers who would wish to investigate other possible variables that would explain the remaining 87% which is very substantial. This implies that there are other important variables which our study did not consider, but the fact that this study has unearthed this, is in itself a noteworthy contribution. This study revealed commitment and vertical collaboration as significant predictors of PDSQ. This indicates that the success of physical distribution in Uganda's soft drinks demand chains

lies significantly in these two variables. Management of soft drinks firms should craft and implement strategies aiming at improving commitment and collaboration with their distributors. We earlier suggested that power dependence is the drive behind distributors' decisions to collaborate with manufacturers. It was also noted that incentive alignment dimension of collaboration is significant in explaining variation in PDSQ. Against this springboard, this study recommends that in a bid to enhance commitment and collaboration, soft drinks manufacturers should offer more incentives to their distributors such as increased sales commissions, advertising facilities and delivery trucks which they may even eventually pay for, in installments. These incentives will not only enhance collaboration but also the bargaining power of manufacturers thereby improving distributors' commitment as well as PDSQ .Although trust did not significantly predict PDSQ, We note that trust had a significant positive relationship with commitment. Since previous studies in Uganda have revealed that the level of trust in business transactions is low, this study recommends that the role of trust should not be disregarded. Management of soft drinks firms should therefore provide favorable environment to foster trust in their demand chains such as improving communication, information exchange, fairness preservation and encouraging inter-firm adaptation.

6. Study limitations and directions for future research

Despite the fact that this study made a significant contribution in the area of demand chain management, there exist some limitations which may somewhat limit the interpretation and general application of the results. In the first place, this study took a cross sectional design. We however note that a longitudinal study would be more appropriate for studies involving variables such as trust, commitment and collaboration. Secondly, this study was confined to the soft drinks manufacturers and distributors in Kampala district. Although this study area houses the majority of the study population, the findings may not be applicable to all soft drinks manufacturers and distributors in the entire country. Future research should widen the scope and incorporate the remaining areas of Uganda in order to obtain more generalized findings. Further to that, this study was conducted in the soft drinks demand chains in Uganda. We recommend that future research should extend to other sectors such as alcoholic drinks since we have many firms producing alcoholic drinks in Uganda. In addition, our model explained only 13% of the variance in PDSQ. Future research is needed so as to include other variables which could be contributing the remaining 87%. Such factors include Information technologies, delivery personnel and power dependence.

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Figures and Tables

FIGURE 1: PROPOSED RESEARCH FRAME WORK

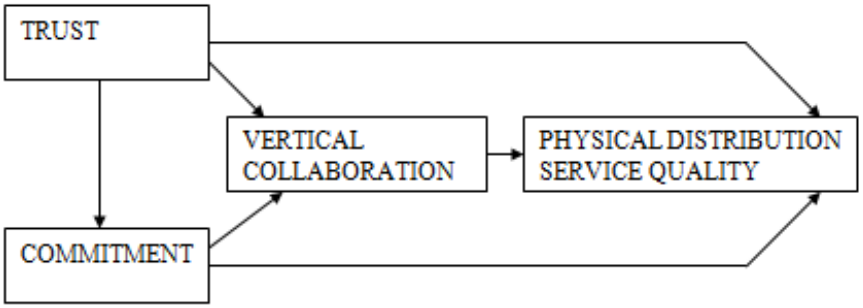

Table 1: Population and Sample Size

Category	Kampala	Sample Size
Manufacturers	31	28
Distributors	664	242
TOTAL	**695**	**270**

Source: Uganda Business Register of 2006/2007

Table2: Correlation analysis results

Correlations

		Vertical Collaboration	Trust	Commitment	Physical Distribution Service Quality
Vertical Collaboration	Pearson Correlation	1			
	Sig. (2-tailed)				
Trust	Pearson Correlation	.110	1		
	Sig. (2-tailed)	.067			
Commitment	Pearson Correlation	.202**	.300**	1	
	Sig. (2-tailed)	.001	.000		
Physical Distribution Service Quality	Pearson Correlation	.342**	.140*	.212**	1
	Sig. (2-tailed)	.000	.018	.000	

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

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

Table 3: Hierarchical Regression Analysis Results

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Standardized Beta	Sig	Standardized Beta	Sig	Standardized Beta	Sig	Standardized Beta	Sig	Standardized Beta	Sig
Firm category	0.036	0.549	0.036	0.553	0.023	0.701	0.035	0.557	-0.003	0.959
Organization status			0.005	0.935	0.003	0.966	-0.007	0.910	0.048	0.403
Trust					0.138	0.022	0.079	0.205	0.066	0.266
Commitment							0.192	0.002	0.128	0.034
Vertical collaboration									0.317	0.000

	Model 1	Model 2	Model 3	Model 4	Model 5
AF	0.361	0.183	1.884	3.877	9.321
Sig.	0.549	0.833	0.133	0.004	0.000
R Square	0.001	0.001	0.020	0.053	0.145
R Square Change	0.001	0	0.019	0.033	0.092
Adjusted R Square	0.002	0.006	0.009	0.440	0.130

Model 1: firm category

Model 2: firm category, organization status

Model 3: firm category, organization status, trust

Model 4: firm category, organization status, trust, commitment

Model 5: firm category, organization status, trust, commitment, vertical collaboration

Dependent variable: physical distribution service quality