



Information Sharing, Cooperative Behaviour and Hotel Performance: A Survey of the Kenyan Hospitality Industry

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ABSTRACT

Information sharing is the life blood of supply chain collaboration. Its role in achieving operational performance of supply chains has been widely acclaimed. However whether information sharing would result in improved performance in the context of the hospitality industry has not been empirically determined. This study sought to find out the role of information sharing on hotel performance when the relationship was mediated by cooperative behaviour. A survey design was employed where proportionate stratified sampling was used to select 50 out of 57 town hotels. Data was collected through the use of questionnaires as well interview guides to the procurement\supply chain departments of these hotels. Logarithmic transformations were used in conjunction with multiple regression analysis to determine the relationship between information sharing, cooperative behaviour and hotel performance. The study concludes that information sharing in the Kenyan hospitality industry does not directly relate to hotel performance. Its relationship is mediated by cooperative behaviour (trust and attitude) with supply chain partners. This suggests that information sharing is essential but insufficient by itself to bring significant performance improvements in hotels in the Kenyan hospitality industry. A possible reason for this is that this collaborative practice is highly dependent on information sharing capability, structure of the information as well as culture. Through quadrant analysis the study identifies and recommends the sharing of information about long term strategic plans and events such as entering new markets and acquiring a new customer base as an area of primary priority for improvement.

Keywords: Co-operative behavior, information sharing, Kenyan hospitality industry, supply chain collaboration.

Available Online: October 1, 2015.

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1.0 INTRODUCTION

In spite of debilitating travel advisories issued by Kenya's traditional source markets for tourists such as Europe which accounts for 65% of Kenya's inbound tourists as well as the United States of America which

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accounts for 7.7% of inbound tourists (Njiraini *et al.*, 2015), customers, shareholders and stakeholders constantly expect supply chain excellence. Supply chain excellence matters. As growth slows, it can make or break corporate performance (Cecere, 2015). The hospitality industry in Kenya finds itself at a crossroads. The number of traditional tourists from the West have continued to dwindle following repeated travel advisories against visiting the Kenyan coast. With the ever present threat of terrorism stalking the tourism industry, accompanied by debilitating travel advisories, with hotel occupancies having dropped from an average 50% in 2014 to less than 20% in 2015. It is now very evident that hotels would not meet their performance objectives through revenue collection. Could the answer to performance lie in collaboration? The premise of the study is that as revenue from traditional and new found tourist source markets slows down, collaborative supply chain practices such as information sharing could limit the persistent siege on the hospitality industry. By ensuring effectiveness and efficiency of their supply chains, improved operational performance could be realized in these troubling times.

Collaborative supply chain practices in the Kenyan hospitality industry have long existed but rather in a less structured and formal manner. Industry players have continuously collaborated some for as long as twenty five years. The general feeling is that collaboration is something good and is laden with substantial benefits. As the business environment becomes more complex, organizations recognize that many benefits can be obtained from closer, long-term relationships (Ganesan, 1994). Day (2000) ventures to say that committed relationships are among the most durable of advantages because of their inherent barriers to competition. Few authors, notably Abade (2011) have attempted to explore this area within the Kenyan context. Supply chain collaboration has been receiving increased interest from industry players and academicians. Testament to this is the growing amount of literature in the field. More importantly, supply chain collaboration has become an integral part of supply chain management (Matopoulos *et al.*, 2007). Information sharing is at the core of collaborative, supply-chain based business models. Advances in information technology have changed modern business practice, making collaborative supply chain management (SCM) possible (Cachon and Fisher, 2000; Chatfield *et al.*, 2004; Lee *et al.*, 2000; Li, 2002). In spite of the much applauded competitive value of information sharing, its role in the performance of hotels in the Kenyan hospitality industry has not been empirically determined.

This research paper aims to explore the nature of collaboration and the role of information sharing in the performance of hotels in the Kenyan hospitality industry when the relationship is mediated by cooperative behaviour. Specifically, this research focuses on the following research question: Does information sharing with mediation from cooperative behaviour improve hotel performance? To provide answers to this research question survey data was collected from hotels in the Kenyan hospitality industry and was used to carry out logarithm transformed regression analysis. The study provides critical findings in that information sharing does not directly relate to organizational performance. Its relationship is mediated by cooperative behaviour (trust and attitude) with supply chain partners. This suggests that information sharing is essential but insufficient by itself to bring significant performance improvements in hotels in the Kenyan hospitality industry. The study was however limited by an updated sampling frame. Once updated, a research may be carried out to determine if the results still hold under conditions of an expanded sampling frame. Furthermore, the mediating role of quality of information and commitment may be assessed on the relationship between information sharing and hotel performance. This could not be done in the current study due to a number of constraints.

The rest of the paper is organized as follows. The next section reviews the literature beginning with the theoretical framework on which the study is anchored; it also reviews literature on information sharing, cooperative behavior, collaborative processes, the Kenyan hospitality industry and collaborative supply chain in Kenya. It then presents and develops a literature-based framework and hypotheses. The subsequent section describes the research methodology used to test the proposed hypotheses, and is followed by presenting the data analysis and results. Finally, it presents the conclusions and policy implications.

2.0 LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.01 STRATEGY-STRUCTURE THEORY

Strategy–structure theory is a theory that is widely used in collaborative relationships studies. Chandler's thesis is that in the development businesses, the *structure* that is the organization of a business entity in order to carry out its current functions follows *strategy* which is the long term plan for change in the organization's activities in order to continue to participate in the market over time. He opens up one of the key concepts in his thesis that is the expansion of a business enterprise dictates the need for new structure.

Strategy-structure theory (SST) supports the view that successful firms appear to be taking a more systematic and dynamic view of their supply chain in order to develop more efficient information transfer systems (Handfield & Nichols, 1999; Barney, 1995). As a result, horizontal/modular structures are now considered to be a dominant organizational form for successful supply chains (Easton, Brown, & Armitage, 1999).

Boundaries within or between organizations have been shown to restrict the flow of information and inhibit the development of trust between co-operating partners (Forrester & Drexler, 1999; Jick, 1992). We are now experiencing the evolution of the network form of organizational partnerships, where communication flows are unrestricted and firms leverage their core competencies through a series of cooperative supply chain relationships based on trust. In the network approach to supply chain management, restrictive control mechanisms are being replaced by an atmosphere of trust where technical and market information flows freely (Allred et al., 1996; Forrester & Drexler, 1999; Jones et al., 1997). Supply chain structures that support cooperation have been shown to be positively correlated with expectations of a continued relationship and a willingness to invest by both the buyer and seller (Heide & John, 1990; Monczka et al., 1998). Two critical end-products of trust, therefore, are the likelihood of a continued relationship and the willingness to participate in the process (Chiles & McMackin, 1996; Handfield & Nichols, 1999; Wetherbe, 1995). This theory is relevant to the study of supply chain collaboration and hotel performance as it lays preconditions for hotels involved in collaboration for them to reap benefits. It posits that the hotels may need to alter their structural organizations to pursue strategies of collaboration as well as foster trust and enhance information transfers between the supply chain partners. This continued relationship between the hotels in the Kenyan hospitality industry is likely to result in growth. This growth can come in a four different ways: growth from continued expansion of the same business with the same type of customers; growth from vertical integration; growth from expansion to overseas markets; and growth from expansion into new product lines.

2.02 INFORMATION SHARING

The starting point of supply chain collaboration is information sharing. Information sharing is conceptualized as the act of capturing and disseminating timely and relevant information for decision makers to plan and control supply chain operations. (Simatupang & Sridharan, 2005). Most noticeable and unsurprisingly, collaboration always includes some form of information sharing (Cannon & Perreault, 1999; Matopoulos et al., 2007; Nyaga, Whipple, & Lynch, 2010). Some of the information likely to share includes but is not limited to store-level information, including point-of-sales (POS) data, delivery quantities, product assortment, promotion activities, new product codes among others. Most of these data come from the retailer's central information system (for example product assortment, product catalogues).

Since supply chain collaboration is practiced through various forms of information exchange the success of collaborative supply chains is likely to depend on characteristics of the exchanged information such as quality (Malhotra, Gosain, & Sawy, 2005). This is to say that collaborating partners should exchange information but also of equal importance is the quality of this shared information. Gosain, Malhotra, and

El Sawy (2004) identified that companies who invest in enhancing the level of information quality gain superior operational performance in terms of supply chain flexibility. Rossin (2007) explored the critical role of information quality for the success of efficient and responsive supply chains. He identified that, amongst other factors, poor information quality results in increased inventory, an increase in total costs and a degrading of customer service due to missing and delayed orders. Forslund (2007) conceptualized information quality in terms of accuracy, convenience of access and the reliability of information. In linking the sparse literature on information quality and performance with the collaboration literature we conclude that since information plays such an important part in collaborative supply chains its quality might also be of vital importance for the success of collaborative supply chains (Malhotra, et al., 2005).

With regard to information exchange, the automotive industry has shared information for many years to arguably an unparalleled level compared with other industries. However, information quality has been largely overlooked by previous research (Forslund, 2007).

An example of this collaborative practice is seen where Mr. Van, who is a Ho Chi Minh City (HCMC) lettuce wholesaler with an impressive 5 tonnes of nightly sales to a large number of retail customers shares information daily with his suppliers to help plan their joint activities: he asks Lam Dong suppliers about the local weather forecast so as to plan his forward-ordering.

In exchange, Mr. Van will give information about city market conditions to his suppliers. Cadilhon *et al.* (2005). HCMC is a metropolis of 8 million inhabitants in the South of Viet Nam. Mr Van supplies his lettuces from several regular collectors in Lam Dong Province. He carefully co-ordinates his activity with his suppliers because of the very volatile rural and city prices for fresh vegetables, the extremely short shelf-life and the high risk of crop damage due to rainy weather in the production area.

In another study by Lehtonen (2006) on collaborative relationships in facility services in Finland, Lehtonen notes that to prevent the accumulation of problems and to keep up the development of the relationship and the service, two-way information sharing is needed. In his study he points out that interviewees mentioned that information sharing should be both open and systematic, meaning that only timely, accurate, and relevant information should be communicated to the partner. Two-way information sharing is needed to prevent the emergence of problems and to encourage the sharing of development ideas, mutual involvement in relationship development and planning is needed to convert new ideas and changes in requirements into practical operations. The success of collaborative relationships between clients and facility service providers seems to be based on two-way information sharing, joint problem solving, and the partners' ability to meet performance expectations, clearly defined and mutually agreed goals, and mutual involvement in relationship development. It is generally accepted in the literature that higher degrees of integration and collaboration lead to improved performance (Frohlich & Westbrook, 2001; Simatupang & Sridharan, 2005; Fearn, Barrow, & Schulenberg, 2006).

However some critics argue that the benefit of reducing delays and replenishment batches exceeds the benefit of information sharing, see for example Cachon and Fisher (2000), whereas others point out that the order history already available to the supplier provides the same information as information sharing if both supplier and retailer know the stochastic properties of demand and these do not change over time (Raghunathan, 2001).

2.03 COOPERATIVE BEHAVIOUR

Cooperative behaviour is conceptualized and measured by trust and attitude towards key suppliers. Trust is the willingness of a party to be vulnerable to the action of another party based on the expectation that the other will perform a particular action important to the trustor irrespective of the ability to monitor or control that other party (Mayer *et al.*, 1995).

Trust can also be defined as the extent to which supply chain partners perceive each other as credible and benevolent (Doney & Cannon, 1997). Credibility reflects the extent to which a firm believes their relationship partner has the expertise to perform effectively while benevolence occurs when a firm believes their relationship partner has intentions and motives that will benefit the relationship (Ganesan, 1994). This is supported by Moorman (1993) who defines trust as a willingness to rely on an exchange partner in whom one has confidence.

Swan and Trawick (1987), operationalised trust in five aspects of; dependable or reliable, honest or candid, competent, partner orientation, and likeable/friendly while Sako (1992) operationalises it in three dimensions of; contractual trust, based on the belief that the other party will fulfill its promises and act as agreed; competence trust, based on the belief that the other party will be capable of doing what it has promised; and trust in goodwill, based on the shared belief of both parties that the other is deeply compromised to promoting a good development of the relationship and is willing to do more than could be expected according to the contractual terms without expecting anything in exchange.

At the beginning of the new millennium, scholars continue to stress the importance of trust in developing and managing business dyads (McCole, 2002; Svensson, 2001). The importance of trust can be explained by the fact that it is seen as a phenomenon which contributes to the strength of inter-personal relationships, intra-organizational relationships and inter-organisational relationships in business dyads (e.g. Grönroos, 2000; Håkansson and Snehota, 1995; Morgan and Hunt, 1994).

2.3.1 ATTITUDE TOWARDS KEY SUPPLIERS

The impact of management support is established in Drucker's framework of the theory of business (Drucker, 1969, 1994); support can be reflected in the attitude and behavior of organizational members. Siguaw et al. (1998) referred cooperative behaviour as cooperative norms, which is defined as the perception of the joint efforts of all parties to achieve mutual goals while refraining from opportunistic actions. When cooperation is the norm, a cooperative attitude is said to exist within the organization. Such a cooperative attitude helps to ensure that multiple components are focused on the same, or very similar, process outcomes.

Traits such as coordination, collaboration, commitment, communication, trust, flexibility, and dependence, are widely considered to be central to meaningful relationships. Performance is defined as the accomplishment of a given task measured against preset known standards of accuracy, completeness, cost, and speed. For the purpose of this research study, performance will be conceptualized along the dimensions of reduced ordering costs, improved quality and reliability, increased profits, reduced customer complaints, flexibility and delivery as well as an improved organizational reputation. They coincide with the four distinct operational performance dimensions (De Toni & Tonchia, 2001). Performance indicators are a tool for organizational learning, communication, strategic change, and improvement, all in the context of existing management processes. Critical assessment of performance helps to maximize the return to all who invest in them.

2.04 COLLABORATIVE PROCESSES

A recent review (Van der Vaart & Van Donk, 2008) lists over 20 different supply chain integration (SCI) constructs: some seem to be more tangible, operational practices, others seem to be more strategic, or seem to enable the implementation of the more tangible SCI practices. So far, little is known if and how these different aspects of integration (practices and enablers) are related. Min et al. (2005) point out that collaborative processes include information sharing, joint planning, joint problem solving, joint performance measurement, and the leveraging of resources and skills. Researchers have highlighted the multidimensional nature of collaboration that goes beyond the exchange of information. Collaborative practices should also incorporate joint decision-making and the alignment of incentives (Simatupang & Sridharan, 2002, 2005).

2.05 KENYAN HOSPITALITY INDUSTRY

The hospitality economic sector is a service-giving sector, which evolved in line with the coming of transportation industry and start of trading, [Kamau and Waudo \(2012\)](#). It is a popular generic name for hotel and restaurant industries. According to [Ottenbacher, Harrington and Parsa \(2009\)](#), it includes Lodging (Hotels, Motels), Food service (Restaurants, Caterings), Leisure (Vacations, Parks, Sightseeing, and hiking), Conventions (Meetings, Trade shows), Travel (pleasure and business) and attractions (fairs, gatherings, shows).

Cognizant of the rapid growth in the tourism sector and by extension, the hospitality industry worldwide and locally, the tourism and in effect the hospitality industry's importance cannot be overemphasized having provided Kenya with an avenue to achieve economic diversification. Statistics published by the United Nations World Tourism Organization (UNWTO) are eloquent in demonstrating the significance and share of tourism in the global economy. At an average of 1.5 million tourist arrivals per year, Kenya's global market share stands at 0.17% of the global market ([Government of Kenya \[GoK\], 2013](#); [United Nations World Tourism Organization \[UNWTO\], 2012](#)).

According to the Kenya National Bureau of Statistics (KNBS) tourism earnings stood at 73.3 billion Kenya shillings in 2010 and in the same period the number of hotel bed nights occupied was an impressive 6,662,300 ([KNBS, 2014](#)). With these levels of revenue earnings, the industry's importance cannot be overemphasized. 2010. Lately, the government has set attainment of 3 million tourists per year as one of its overriding targets ([Jubilee Manifesto, 2012](#)). Whereas this target was initially set to be achieved by 2012 in the Vision 2030 five-year Medium Term Plan 2008–2012, it remained elusive by the end of the period ([GoK, 2013](#)).

The significant role of the tourism sector in the economic development of many countries is well documented in tourism literature, the merits of which are essentially in terms of increased foreign exchange receipts, balance of payments, government revenues, employment, and increased economic activity in general ([Valle & Yobesia, 2009](#)).

Kenya's major tourism activities are safari and beach holidays, which are spatially restricted to key tourism destination areas including the coast (Mombasa, South Coast, and Malindi coastal areas) and around a few key national parks and reserves (Masai Mara National Reserve, Tsavo National Parks, and Amboseli National Park) ([Akama, 1999](#); [Ondicho, 2000](#)). It is noteworthy to mention that recently, other forms of tourism such as sports, adventure, cultural, and business tourism have been promoted in an effort to diversify the destination's product. As observed by [Akama \(1999\)](#) and [Odunga and Folmer \(2004\)](#), Kenya's comparative advantage in the international tourism scene is based on its endowment of unique natural resources such as pristine beaches, diverse wildlife, scenic landscape, ideal weather conditions, and unique indigenous cultural heritage.

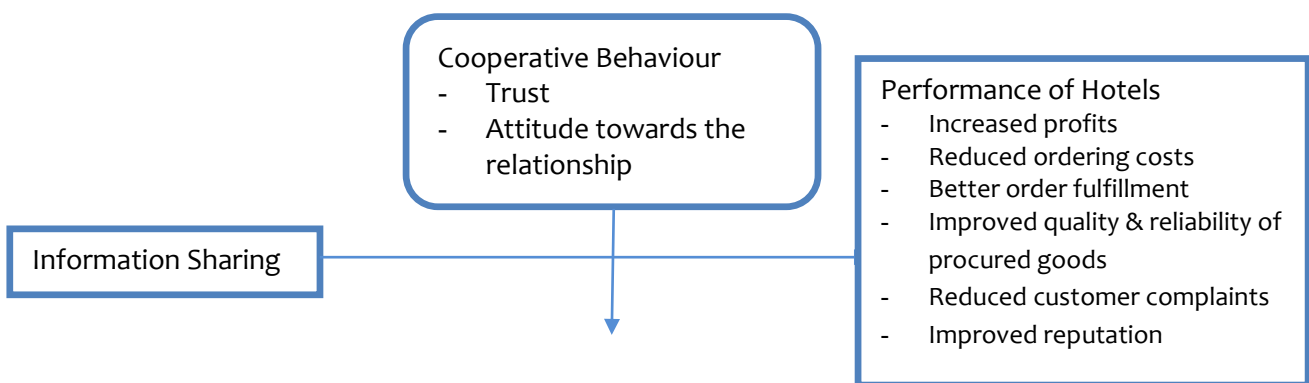
The hospitality and tourism sectors have long been recognized as core areas through which countries, regions and destinations can generate competitive advantage ([Meler & Cerovic, 2003](#)). The hospitality industry is characterized by a high level of interdependence among supply chain partners with complex relationships among the different players, collaboration is therefore more than essential. According to [Ramsaran-Fowdar \(2007\)](#) many hotel services fail to live up to expectations, causing a decrease in customer satisfaction. Most authors agree that service quality is an important tool for increasing customer satisfaction ([Nadiri & Hussain, 2005](#), [Van Riel et al., 2004](#)). To achieve customer satisfaction and enable the hotels perform as institutions, supply chain collaboration is fundamental.

2.06 COLLABORATIVE SUPPLY CHAIN IN KENYA

A collaborative supply chain means that two or more independent companies work jointly to plan and execute supply chain operations with greater success than when acting in isolation (Simatupang & Sridharan, 2002). Therefore, collaboration, in the context of supply chain, means sharing commitment, trust and respect, skills and knowledge, and intellectual agility between supply chain partners (Barratt, 2004).

In Kenya, the concept of collaborative supply chain is not entirely new. Abade (2011) in a study titled, *A survey of contract manufacturing as a collaborative supply chain process: Case study of selected firms in Kenya* arrived at the conclusion that Kenya rates highly as an off-shore destination to consider when seeking a contract manufacturing relationship. It also determined that contract manufacturing as a collaborative supply chain practice is a profitable venture as revealed with benefits, among them being speed to market for the finished goods for the contracting organization, business profitability and use of available capacity by the local organization offering the service with the overall contribution towards Kenya’s development. Information sharing has been cited as offering substantial benefits such as offering substitutes for inventory, speeding new product design, shortening order fulfillment cycles, driving process reengineering, and coordinating SC activities (Cachon and Fisher, 1997; Clark and Hammond, 1997; Hammer, 1990; Hult et al., 2004, Kulp et al., 2004).

The research study conceptualizes the relationship between information sharing and performance of hotels as mediated by cooperative behaviour as depicted in the figure below.



Predictor Variable

In light of the reviewed literature, the study predicts that:

H₀: Information sharing in collaborative supply chain relationships does not significantly influence the performance of hotels in the Kenyan hospitality industry.

H_A: Information sharing in collaborative supply chain relationships significantly influences the performance of hotels in the Kenyan hospitality industry.

Criterion Variable

3.0 METHODOLOGY

A survey design was employed to determine the role of information sharing on hotel Performance. A sample group was selected from the special Gazette notices number 3976 of 13th June, 2003 and Gazette Notice Number. 5693 of 23rd July, 2004 on the classifications of hotels and restaurants. Sample size determination was through⁴ Yamane (1967), who provided a simplified formula to calculate sample sizes. This formula resulted in a sample of 50 town hotels either globally and locally managed (or franchised). Out of 50 questionnaires, 33 were filled and returned, representing a 66% return rate, which was a good representation and sufficient to make generalisations. Van Voorhis & Morgan (2007) note that using 6 or

⁴ $n = \frac{N}{1 + Ne^2}$ where n = sample size, N = size of population, e = error of five percentage points

more predictors the absolute minimum of participants should be 10. Though it is better to go for 30 participants per variable. This survey met this threshold despite the limiting sampling frame. The respondents included largely procurement managers, deputy procurement managers, operations managers and storekeepers, of whom 22 were male and 11 female representing 67% and 33% respectively. The participants were highly educated with 90% having a university degree or having attained middle college education. Due to population heterogeneity, proportionate stratified sampling was later used to determine the number of sampling elements in each strata.

3.01 RESEARCH METHODS

A questionnaire was designed to identify the extent to which information sharing impacted on hotel performance. The questionnaire was developed in several stages. Firstly, a questionnaire was drafted based on extensive literature review. The draft was then discussed with academic colleagues. Using their valuable input, changes to the structure and form of the questionnaire were implemented. This resulted in the development of a five point Likert scale continuum which itemized the domains of information sharing into a set of activities. Interviews were also conducted. Open-ended questions were developed to guide semi-structured interviews with the aid of unstructured questionnaires in the form of interview guides.

3.02 MEASURES

Information sharing was conceptualized as the breadth of information exchanged in a buyer-supplier relationship (Gosain *et al.*, 2004) while the dependent variable hotel performance criteria was operationalised as the degree to which the chain members achieve better order fulfillment, improved quality, customer satisfaction, and responsiveness among others as a result of collaboration. They coincide with the four distinct operational performance dimensions (De Toni and Tonchia, 2001).

3.03 DATA COLLECTION

Data was collected from April 2014 to August 2014 over a four month period through the use of questionnaires and interviews. The questionnaires, measuring all items on a five point scale, were then sent out to procurement/materials/supply chain/operations directors, managers in the selected hotels. The study terminology was also explained prior to each interview, and questions were rephrased as necessary. Open Data Kit Collect (ODK) which is a replacement for paper forms with support for geo-locations, images, audio clips, video clips and barcodes, as well as numerical and textual answers was used by the researchers to support data collection. It is designed to work out of touch with a cellular network / Wi-Fi during the data collection effort. An application in the form of the questionnaire was coded and was an optional mode of data collection for respondents who did not mind the mode. This was advantageous as it eliminated tedious and costly data entry. It also provided assurance that the research assistants actually visited each and every sampled hotel as uploads provided global positioning system (GPS) coordinates which provide the exact location of users, 24 hours a day, in all weather conditions and anywhere in the world with an accuracy of 10 to 100 meters.

3.04 VALIDITY AND RELIABILITY

To ensure and increase stability of the measure, a pilot study was conducted on the research instrument. Validity and reliability (internal consistency), as measures of the representativeness and completeness of an instrument, are important if research is to be well inclusive. Also, Van-Teijlingen and Hundley (2001) note that pretesting is useful since it helps to establish whether the study techniques are effective and helps to uncover internal variabilities, hence making the instrument more objective. Before the onset of the study, the questionnaire and interview guides were pretested on the respondents to ensure purification, and to ascertain their validity and reliability. These respondents bore the same characteristics as the study's sample however these respondents were not included in the final study.

The reliability of the research instruments was analyzed using Cronbach's alpha (Cronbach, 1951). Cronbach's alpha is a popular reliability testing method. It indicates the extent to which questionnaire items can be treated as a single latent construct. Table 1 shows the reliability results.

Table 1: Reliability analysis

Variable	No. of items (N)	Cronbach's Alpha
Information Sharing	10	.969
Hotel Performance	8	.902

A 0.7 reliability is considered adequate for a survey instrument (Bland and Altman, 1997), although some authors consider 0.6 and higher adequate (Field, 2000). In this study, questions that yielded a Cronbach alpha value of 0.7 and above were acceptable in line with Cronbach (1951). Having an alpha coefficient of 0.9 indicates that the gathered data has a relatively high internal consistency and could be generalized to reflect opinions of all the respondents in the target population.

3.05 DATA ANALYSIS

3.5.1 LOGARITHMIC TRANSFORMATIONS

Logarithmic transformations of variables in a regression model are mostly applied to handle situations in which non-linear relationship exists between the variables (dependent and independent variables). Logarithmic transformation ensures transformation of highly skewed or non-normal variables into a more approximately normal variable. The resulting distribution is referred to as log-normal distribution and is usually normally distributed. The logarithmic transformation model employed in this study is discussed below.

Linear-log model: $\log Y_i = \alpha + \beta X_i + \varepsilon_i$

In this type of log-linear model, one-unit increase in the variable X leads to an expected increase in log Y of $\hat{\beta}$ units. To obtain the expected value of Y, we multiplied $e^{\hat{\beta}}$. For instance, for every unit increase in the independent variable X multiplies the expected value Y by $e^{\hat{\beta}}$.

The transformed regression model that guided analysis for this thesis is presented underneath.

Log(Y) = $B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \varepsilon$

Where: Y = Hotel Performance

Log is the natural logarithm in

B_0 : Constant

X_1 : Incentive alignment

X_2 : Information Sharing

X_3 : Joint Improvement

X_4 : CPFR

X_5 : Decision Synchronization

ε : error / "noise" term reflecting other factors that influence performance

$B_1 \dots B_5$ are regression coefficients

The statistical model used for analysis of the effect of the moderator is provided below as follows.

Log (Y) = $B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_ZZ + B_{1Z}X_1Z + B_{2Z}X_2Z + B_{3Z}X_3Z + B_{4Z}X_4Z + B_{5Z}X_5Z + \varepsilon$

Since hotel performance is unlikely to be predicted solely by the collaborative practice of information sharing and mediation by cooperative behavior, other predictor variables were added on to the model to make it more realistic and wholesome.

Quadrant analysis which is one way of simultaneously analyzing what attributes are important to consumers and how consumers rate particular brands, processes according to those attributes was

employed. Based on the BCG matrix, Priorities Factors for Improvement (PFI) are obtained. FPI were obtained by drawing a scatter plot of satisfaction index versus the relative importance of factors as determined by correlation coefficient. This method further outlined which processes are most important yet lacking in the present collaborative relationships

4.0 RESULTS

Multiple regression analysis was used to test the hypothesis as to whether information sharing in collaborative supply chain relationships significantly or does not significantly influence the performance of hotels in the Kenyan hospitality industry.

Table 2: Multiple regression analysis

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	p-value	95.0% Confidence Interval for B	
	B	Std. Error				Lower Bound	Upper Bound
(Constant)	.242	.011		21.787	.000	.219	.265
Incentive alignment	.055	.002	.252	27.888	.000	.051	.059
Information sharing	.062	.002	.297	30.231	.000	.057	.066
Joint Improvement	.057	.002	.285	31.065	.004	.053	.060
Collaborative planning, forecasting and replenishment	.053	.002	.280	26.883	.000	.049	.057
Decision Synchronization	.061	.001	.515	52.858	.003	.059	.063

a. Dependent Variable: Log_Trans_Average_Hotel_Performance_Score

From the result in Table 2, the predictor variable information sharing has a $p < 0.05$, implying that it is statistically significant in predicting the hotel performance at 5% significance level. Further, $p < 0.005$ indicates that we should reject the null hypothesis and conclude that there is linear relationship between information sharing and hotel performance. That is $\rho \neq 0$.

To transform back our model to the form $Y = B_0 + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + \epsilon$, Y was unlogged by obtaining e^{B_i} , where $i = 0, 1, 2, 3, 4, 5$ this gives the terms of effects of changes in X on Y. The unlogged coefficients are illustrated in Table 3.

Table 3: Unlogged coefficients

Variable	Untransformed B_i	e^{B_i}	$B_i (e^{B_i} - 1)$	Std. Error	p-value
(Constant)	.242	1.273895	.273895	.011	.000
Incentive alignment	.055	1.056906	.056906	.002	.000
Information sharing	.062	1.063499	.063499	.002	.000
Joint Improvement	.057	1.058252	.058252	.002	.004
Collaborative planning, forecasting and replenishment	.053	1.054768	.054768	.002	.000
Decision Synchronization	.061	1.062848	.062848	.001	.003

As seen in table 3 above, if all other independent variables other than information sharing are set to zero, a unit increase in information sharing will lead to an increase in hotel performance by 0.063499 (6.3%).

This finding is in agreement with Stein and Sweat (1998) who observe that supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market changes quicker. Information's competitive value is widely heralded – it substitutes for inventory, speeds new product design, shortens order fulfillment cycles, drives process reengineering, and coordinates SC activities (Cachon and Fisher, 1997; Clark and Hammond, 1997; Hammer, 1990; Hult et al., 2004, Kulp et al., 2004).

The moderating role of co-operative behaviour was added into the relationship to check if it would alter the linear relationship between information sharing and hotel performance. The analysis is presented in table 4.

Table 4: Moderating effect analysis

Model	B	Std. Error	t	p-value
Constant	0.30363	0.066023	4.599	0.0001
Incentive alignment	0.035486	0.019485	1.821	0.0805
Information sharing	0.095398	0.015448	6.175	0.0000
Joint Improvement	0.012689	0.025289	0.502	0.6202
Collaborative planning, forecasting and replenishment	0.070999	0.013453	5.278	0.0000
Decision Synchronization	0.078933	0.008083	9.765	0.0000
Interactions				
Decision Synchronization & Trust and attitude	-0.01766	0.007588	-2.327	0.0283
Information sharing & Trust and attitude	-0.03244	0.014758	-2.198	0.0374
Joint Improvement & Trust and attitude	0.043468	0.024376	-2.083	0.0467
Collaborative planning, forecasting and replenishment & Trust and attitude	-0.01444	0.012001	-1.203	0.2400
Incentive alignment & Trust and attitude	0.017889	0.018187	0.984	0.3347

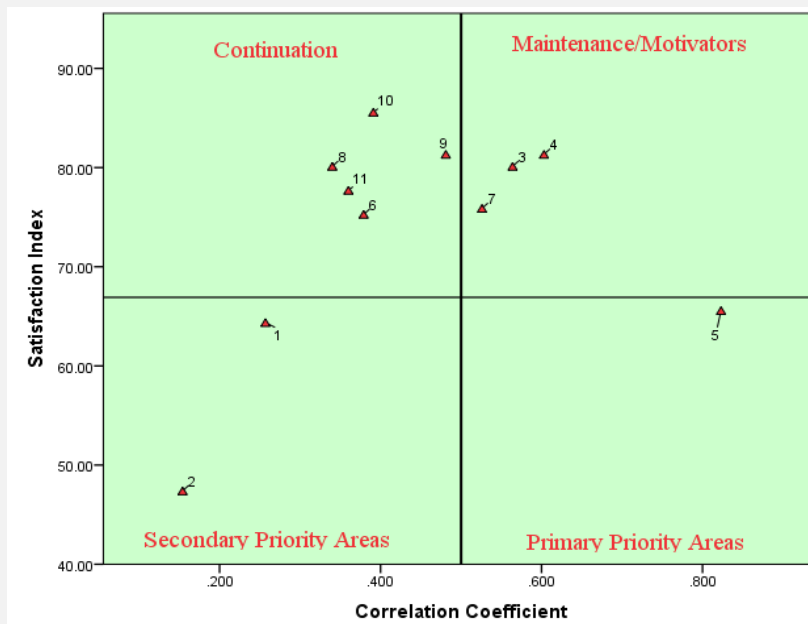
From the results, it is clearly established that adding cooperative behavioural factors (trust and attitude) to the model changes the relationship between independent and dependent variables. In addition, with interaction terms Information sharing and Trust and attitude ($p = 0.0374$) was found to have a linear relationship with the hotel performance.

4.01 QUADRANT ANALYSIS FOR INFORMATION SHARING

To be able to know which factors regarding hotel performances were to be given first priority in improvement a scatter plot was developed. It is a data analysis tool normally used to group decision factors into four quadrants based on the Boston Consulting Group (BCG) Matrix for decision making (satisfaction & correlation coefficients). Based on the BCG matrix, Priorities Factors for Improvement (PFI) are obtained. This mode of analysis also provides a snapshot of the status of information sharing between hotels and their key suppliers.

What are the hotels in the Kenyan hospitality industry doing right? Currently hotels and their key suppliers are sharing information about new product developments, changes in existing products and services as well as order status and order tracking are prevailing motivators for hotel performance. This is commendable and should be encouraged since these actions motivate hotel performance and offer high satisfaction. Furthermore, sharing information about price changes, delivery schedules can be maintained but there is no need of pouring more money in these processes. What are the hotels not doing but should be doing? The study identifies the sharing of information about long term strategic plans and events such as entering new markets and acquiring a new customer base as an area of primary priority. Resources, time and effort should be invested in the sharing of this information. This is pivotal but scored dismally in the study.

Figure 1: Quadrant analysis for information sharing indicators



No.	Statements
1	Information about inventory levels is shared with our key suppliers.
2	Information on delivery schedules is rarely shared between my organization and our key suppliers
3	Information about new product developments is always shared with our key suppliers
4	Information about changes in existing products is mostly shared with our key suppliers
5	My organization shares information about long-term strategic plans and events, e.g. entering new markets, or acquiring a new customer base with our key suppliers.
6	Information about market and economic situations and forecasts is always shared with our key suppliers.
7	Information on order status or order tracking is always shared between my organization and key suppliers
8	Information on delivery schedules is mostly shared between my organization and our key suppliers
9	Information on price changes is always shared with our key suppliers
10	Information about supply disruptions is always shared between my organization and our key suppliers
11	Information about (city) market conditions is always shared with our key suppliers

Hence from the figure 1, hotels in the Kenyan hospitality industry should first consider improving with those factors in the Primary Priority Areas before moving to those in the Secondary Priority Areas while maintaining those factors in the Maintenance / motivators and continue giving services to those in Continuation region but not investing in them.

5.0 CONCLUSION AND POLICY IMPLICATION

In respect to information sharing, the research study concludes that information sharing does not directly relate to organizational performance. Its relationship is mediated by cooperative behaviour (trust and attitude) with supply chain partners. This suggests that information sharing is essential but insufficient by itself to bring significant performance improvements in hotels in the Kenyan hospitality industry. A possible reason for this is that this collaborative practice is highly dependent on information sharing capability where technology plays a pivotal role. With regards to the technology propping information sharing, the technology should not be viewed as the answer but as an enabler. Another possible reason for the failure of information sharing by itself to bring about significant improvements in performance is that it is also affected by the structure of information sharing as well as culture. It is

however noteworthy to mention that the respondents in the study recognized its pivotal role in collaboration and identified it as the single most important collaborative supply chain practice. Its implementation is the next big question in which the devil lies in the details. In the Kenyan hospitality industry information sharing contributes to hotel performance by streamlining planning and budgeting and ironing out misunderstandings in the supply chain which in many a time are a major source of supply disruptions which are a major risk to the entire supply chain. Does information sharing inhibit supply disruptions? The answer is a strong yes. Through quadrant analysis the study identifies the sharing of information about long term strategic plans and events such as entering new markets and acquiring a new customer base as an area of primary priority. The hotels should invest in these factors as a priority in order to improve satisfaction with a higher level.

The study presents a number of policy implications in that supplier relationship management must be given top priority so as to develop an enabling environment by cultivating the culture of trust as well as a positive attitude towards key suppliers. Emphasis should also be given in developing the supply chain partners' capability of utilizing shared information as access to the information is not synonymous to use of the information. Leveraging on technology as well as interrogating as to whether the shared information is meeting the needs of the other party is also paramount.

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