

# Understanding Drivers of Performance in Hotel Industry in Zanzibar, Tanzania: An Integrated Supply Chain Model

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**Abstract:** *Integrated Supply Chain is the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organizational processes, in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer. The intention of this study was to test the relationship between each component of ISCM and performance in hotel industry in Zanzibar, Tanzania. This study stems from the growing significance of integrated supply chain in performance of hotel industry and contribution to the country GDP worldwide. This study is supported by system theory. The study was conducted in Zanzibar south region in which 42 (five stars and four stars) hotels were involved. The study used cross-sectional survey research design in which mixed paradigm of qualitative and quantitative was used. Generally, the study indicates a significant relationship between the ISCM metrics and hotel performance. The hotel industry performance depends on the integration of supply chain activities. This is to say ‘Synergies of supply chain activities results to high performance rather than individual component’.*

**Keywords:** Supply Chain, Integrated Supply Chain Model (ISCM), Hotel Industry, Supply Chain Performance

## 1. Introduction

Integrated Supply Chain (ISC) “is the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organizational processes, in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer” [39], [14]. Integrated supply chain (ISC) has received increasing attention from scholars and practitioners in recent years, worldwide [39], [7], [24]. Several studies have been conducted to examine the role of supply chain in performance of hotel industry [27], [36], [23], [11]. While some efforts focused on measuring the impact of supply chain on operational efficiency of hotel industry and service quality [27], [36], relatively little emphasis have been given to identify the key drivers of performance in hotel industry using integrated supply chain model (ISCM).

Integrated supply chain model (ISCM) is vehicle of performance in any organization to ensure materials, information and funds flow smoothly from original suppliers to the final consumer [23], [7]. It is proclaimed that ISC has been used as a weapon by most of the hotels to beat their competitors in hotel industry by improves the collaborative advantage and competitive advantage [11], [38], [7], [32]. It enhances effective procurement, transportation, production, storage and distribution of raw materials, semi-finished goods, and finished goods from upstream to downstream [6].

The rationale behind supply chain integration is to combine partners’ resources and perspectives into a firm’s value propositions, thus allowing all companies in a supply chain to excel in performance [38]. It is the vital fact to complete a business cycle in hospitality industry like hotel industry

[29]. However, yet it is only hypothetical assumption that integrated supply chain (ISC) results to high performance, no single study have been conducted to determine the relationship of individual components of integrated supply chain (ISC) to the performance of hotel in Tanzania. Therefore, the intention of this study is to test the relationship of each component in integrated supply chain model (ISCM) at what extent it enhance sustainable competitiveness and performance in hotel industry in Zanzibar, Tanzania. This study stems from the growing significance of integrated supply chain in performance of hotel industry and contribution to the country GDP.

## 2. Literature Review

Under this part, theoretical and empirical literatures related to the study topic will be studied.

### 2.1 Supply Chain (SC)

Several authors have tried to define the term supply chain in different context. Actually, most of the definitions of supply chain have one or two similar keys concepts. Table 1 represents the definitions of supply chain from different scholars.

**Table 1:** Definitions of Supply Chain

No	Author(s)	Definition
1	[20]	“A supply chain is the network of organizations that are involved through upstream and downstream linkages, in the different process and activities that produce value in the form of products and service in the hands of the ultimate customer or consumer”.
2	[15]	“Supply chain is the stream of processes of moving goods from the customer order through the raw materials stage, supply, production, and distribution of products to the customer”.

3	[37]	“A supply chain consists of the series of activities and organizations that materials move through on their journey from initial suppliers to final customers”.
4	[1]	“A supply chain is a network of facilities and distribution channels that encompasses the procurement of materials, production, assembly and delivery of product or service to the customer”.
5	[26]	“Supply chain is the process that seeks to provide for the management and coordination of all activities from sourcing and acquisition, through production, where appropriate, and through distribution channels to the customer.
6	[4]	“A supply chain consists of all stages involved, directly or indirectly, in fulfilling a customer request. The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves”.

		midstream (company) and downstream (distributor, retailers) for the purpose of create the best customer value at the lowest operating cost.
3	[24]	Integrated Supply chain refers to strategic internal external integration degree which means companies’ relations with upstream suppliers and downstream customers.
4	[38]	“Integrated Supply chain is the degree to which a manufacturer strategically collaborates with its supply chain partners and collaboratively manages intra- and inter-organizational processes, in order to achieve effective and efficient flows of products and services, information, money and decisions, to provide maximum value to the customer”.
5	[35]	“Integrated Supply chain refers to a formation of network encompassing elements of supply chain, which are the suppliers, customers and the company”

## 2.2 Integrated Supply Chain (ISC)

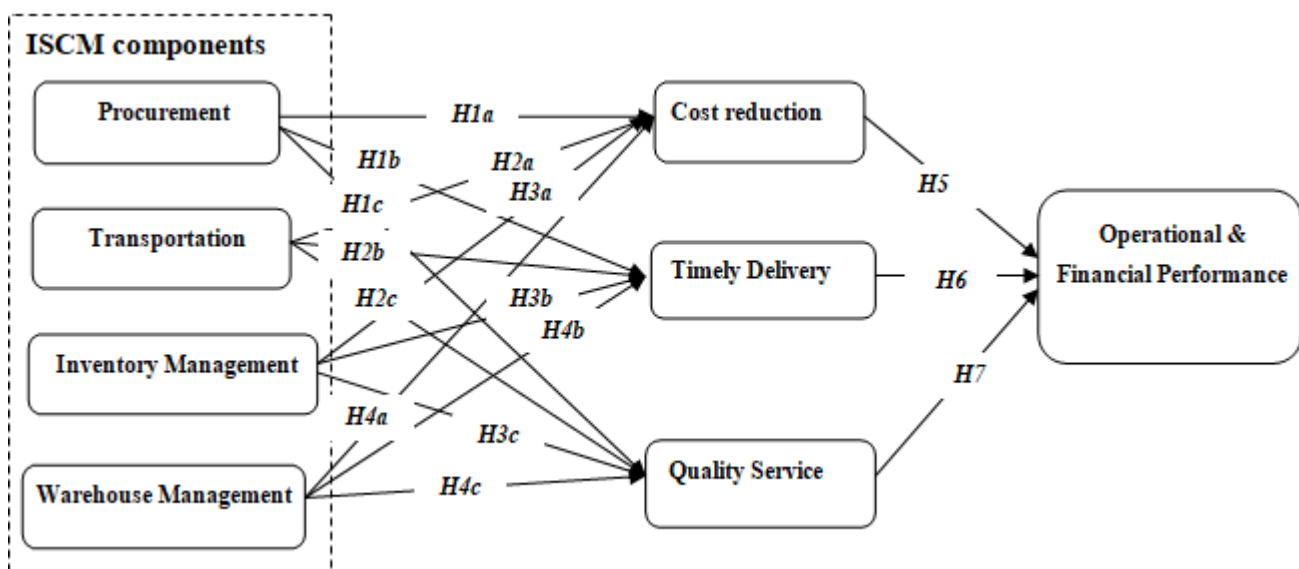
Although the concept of integrated supply chain was used long time ago, there is no precisely accepted definition provided, some limited scholars have provided a clue of the meaning of supply chain integration which resemble to integrated supply chain and supply chain collaboration as exploded in table 2.

**Table 2:** Definitions of Integrated Supply Chain

No	Author(s)	Definition
1	[16]	“Integrated Supply chain is the alignment and interlinking of business processes, collaboration and relationship between supply chain partners developed over a period of time”
2	[12]	Integrated Supply chain is defined as the collaborations of the upstream suppliers,

## 2.3 Components of Integrated Supply Chain

Integrated Supply Chain (ISC) spectrum is basically made by upstream and downstream. Two components from each side will be tested to determine its strength to the performance of hotel industry. Procurement and transportation was drawn from upward stream, inventory management and warehouse management was drawn from the downstream as seen in proposed path model (Figure 1). These metrics was adopted from Alan Rushton *Integrated supply chain metric framework* [30], pg 491.



**Figure 1:** Proposed Path Model

### 2.2.1 Procurement

Procurement involves the whole process of acquiring goods and or services which begins with need identification and recognition, need specification, supplier searching and selection, contracting and delivery of items and service [3]. It is a crucial determinant of any organization operation and efficiency [22], [18]. Procurement is an important link in a supply chain and driver of operation and financial performance in an organization by ensure availability of

right materials and service, of the right quantity, at right time, from right source, at reasonable price [17]. The following hypotheses are postulated:

**H1a:** Effective Procurement has positive relations with cost reduction in hotel operations.

**H1b:** Effective Procurement has a positive relation with timely delivery of service to customers.

**H1c:** Effective procurement has a positive relation with quality of service offered by hotels.

### 2.2.2 Transportation

According to [31], Transportation inbound logistics is a critical component of the supply chain that is often overlooked and it has always been considered as a marginal activity within supply chains. Transport is the most important economic activity among the components of integrated supply chain system. It provides the physical link through the movement and storage of materials for production, and outbound logistic through the movement and storage of finished goods to hotels as final consumer.

**H2a:** Transportation has a positive relationship with Cost reduction in hotel operations.

**H2b:** Transportation has positive relations with timely delivery of service by hotels.

**H2c:** Transportation has a positive relation with quality service offered by hotels.

### 2.2.3 Inventory Management

Inventory management is all about planning and controlling the amount of inventory held in organization. Actually, it focuses on which type of materials should be ordered, how much of the materials needed to ordered, when it should be ordered. Too much inventory and too fewer inventories is cost full for hotel operation, optimal amount is always required. According to [25] is a positive correlation between inventory management as a component of ISC model and financial performance of the organization. The following hypothesis will be tested:

**H3a:** Inventory management has a positive relation with cost reduction in hotel operations.

**H3b:** Inventory management has a positive relation with timely delivery of service to the customers.

**H3c:** Inventory management has a positive relation with quality service offered by hotels.

### 2.2.4 Warehouse Management

Warehouse can be a place where finished goods are kept before sent to the ultimate consumers in the supply chain.

## 2.5 Theoretical Foundation

This study is supported by *system theory*. The theory was pioneered by Ludwig von Bertalanffy in 1930's. The principal idea of system theory is taking things in its holistic view "the whole is more than the sum of its parts" [2]. A fundamental belief of systems theory is on interactions, it is know that the behavior of a single autonomous element is different from its behavior when the element interacts with other elements. Generally, the outcome of interact elements is higher and more powerful [5].

Integrated supply chain perspective buy the idea of system theory by focusing on synergy of activities rather than independent activities. In ISC model the perspective is 'stronger the integration, higher the performance' and always it is necessary to look at supply chain systems from a 'system of systems' perspective [10].

## 3. Research Methodology

The study was conducted in Zanzibar south region in which 42 hotels was involved. The sample comprises five star and

Pragmatically, In Tanzania a warehouse and stores are used in interchangeably and all means a place where all materials are kept before being used normal operations or resale. Warehousing has also been recognized as one of the main operations where companies can provide tailored services for their customers and gain competitive advantage [28]. The following hypothesis will be tested:

**H4a:** Warehouse management has a positive relation with cost reduction.

**H4b:** Warehouse management has a positive relation with timely delivery of service to the customer.

**H4c:** Warehouse management has a positive relation with quality service offered by hotels.

## 2.4 Performance in Hotel Industry

Organization performance can be measured using different metrics by focusing on operational and financial performance. Operational performance relates to a company's performance in serving customers in terms of quality, flexibility, on-time delivery, and so forth [13], [36] and financial performance evaluate the companies' efficiency and effectiveness, such as growth rate in market share, growth in annual sales, growth in return on sales and growth in return on assets [13]. For the purpose of this study as indicated in proposed path mode (Figure 1), three indicators of operational efficiency will be tasted include cost reduction, timely delivery and quality service offered by Hotels.

**H5:** Cost reduction has a positive relation with financial and operational performance of hotels

**H6:** Timely delivery has a positive relation with relation with financial and operational performance of hotels.

**H7:** Quality service has a positive relation with financial and operational performance of hotels.

four star hotels. This study used cross-sectional survey research design in which mixed paradigm of qualitative and quantitative was used. The questionnaire was delivered by hand to the respective section in the selected hotels which include store department, procurement department, operations department, accounting department and logistics department.

The questionnaire was prepared using a 5 point Likert scale as a unit of measurement ranging from "strong agree" to "strong disagree". The researchers managed to collect back 36 questionnaires from 42 hotels which is equivalent to 78.2% response rate. The data were analyzed using descriptive statistics and reliability statistics are tested using Cronbach Alpha Coefficient.

## 4. Results and Discussion

### 4.1 Descriptive Statistics

**Table 2: Pearson Chi-Square Tests**

Variables	Value	Df	Asymp. Sig. (2-sided)
Inventory management and quality service	43.942 <sup>a</sup>	4	.000
Inventory management and cost reduction	13.868 <sup>a</sup>	4	.008
Inventory management and timely delivery	44.318 <sup>a</sup>	8	.000
Transportation and quality service	7.162 <sup>a</sup>	4	.128
Transportation and cost reduction	11.092 <sup>a</sup>	4	.026
Transportation Vs timely delivery	8.445 <sup>a</sup>	8	.391
Warehouse management and quality service	14.265 <sup>a</sup>	6	.027
Warehouse management and cost reduction	12.916 <sup>a</sup>	6	.044
Warehouse management and timely delivery	16.079 <sup>a</sup>	12	.188
Procurement and quality service	16.124 <sup>a</sup>	4	.003
Procurement and cost reduction	12.768 <sup>a</sup>	4	.012
Procurement and timely delivery	14.292 <sup>a</sup>	8	.074

Table 2 show that the chi square results for different hypothesis postulated in part 2.2. The chi square value for inventory management and quality service is 43.942a at 4 degree of freedom with significant value of ( $\beta=0.00$ ) in which ( $p < 0.05$ ). The chi square value for inventory management and cost reduction is 13.868a at 4 degree of freedom with significant value of ( $\beta=0.00$ ) in which ( $p < 0.05$ ). The chi square value for inventory management and timely delivery is 44.318a at 8 degree of freedom with significant value of ( $\beta=0.00$ ) in which ( $p < 0.05$ ). The chi square results imply a significant association between inventory management and quality service offered by hotels, timely delivery and cost reduction in hotel operations.

The chi square value for transportation and quality service is 7.162a at 4 degree of freedom with significant value of ( $\beta=0.128$ ) in which ( $p > 0.05$ ). The chi square value for transportation and cost reduction is 11.092a at 4 degree of

freedom with significant value of ( $\beta=0.026$ ) in which ( $p < 0.05$ ). The chi square value for transportation and timely delivery is 8.445a at 8 degree of freedom with significant value of ( $\beta=0.391$ ) in which ( $p > 0.05$ ). The chi square results imply a slight significant association between transportation and cost reduction and no significant association between transportation and quality service offered by hotels and timely delivery of items to the customers.

The chi square value for warehouse management and quality service is 14.265a at 6 degree of freedom with significant value of ( $\beta=0.027$ ) in which ( $p < 0.05$ ). The chi square value for warehouse management and cost reduction is 12.916a at 6 degree of freedom with significant value of ( $\beta=0.044$ ) in which ( $p < 0.05$ ). The chi square value for warehouse management and timely delivery is 16.079a at 12 degree of freedom with significant value of ( $\beta=0.188$ ) in which ( $p > 0.05$ ). The chi square results imply a slight significant association between warehouse management and quality service offered by hotels as well as cost reduction. Furthermore, it shows no significant association between warehouse management and timely delivery of products and service to the customers.

The chi square value for procurement and quality service is 16.124<sup>a</sup> at 4 degree of freedom with significant value of ( $\beta=0.003$ ) in which ( $p < 0.05$ ). The chi square value for procurement and cost reduction is 12.768<sup>a</sup> at 4 degree of freedom with significant value of ( $\beta=0.012$ ) in which ( $p < 0.05$ ). The chi square value for procurement and timely delivery is 14.292<sup>a</sup> at 8 degree of freedom with significant value of ( $\beta=0.074$ ) in which ( $p > 0.05$ ). The chi square results imply a significant association between procurement and quality service offered by hotels as well as cost reduction but it shows no significant association between procurement and timely delivery of products and service to the customers.

### 4.1 Pearson Correlation Analysis

**Table 3: Pearson Correlation Coefficient**

Variables	Mean	S.D	V1	V2	V3	V4	X1	X2	X3
Inventory management V1	1.39	.645	<b>1</b>						
Transportation V2	1.72	.701	.372*	<b>1</b>					
Warehouse management V3	2.00	.894	.347*	.091	<b>1</b>				
Procurement V4	1.33	.535	.442**	.559**	.060	<b>1</b>			
Quality Service X1	1.39	.645	.725**	.182	.198	.276	<b>1</b>		
Cost Reduction X2	1.56	.735	.556**	.474**	.087	.388*	.616**	<b>1</b>	
Timely Delivery X3	1.69	.980	.600**	.205	-.033	.254	.645**	.679**	<b>1</b>

Table 3 show the mean, standard deviation and Pearson correlation coefficients where all t item scales were anchored on a 5point- Likert scale with 1=strongly disagree, 2= disagree, 3= neither agree nor disagree, 4= agree, and 5 strongly agree. The hotel industries in Zanzibar, Tanzania emphasized more on the following variables warehouse management (M=2.00, S.d=.894), followed by transportation (M=1.72, S.d=.701), and then followed by inventory management (M=1.39, S.d=.645) and then Procurement (M=1.33, S.d =.535). On the side of performances metrics the hotel industries focus more on

timely delivery (M=1.69, S.d=.980), followed by cost reduction (M=1.56, S.d=.735) and then quality service offered (M=1.39, S.d =.645).

Table 3 also shows the analysis of correlation coefficient (r) of different variables of ISC model tested. The analysis revealed a significant correlation between inventory management and quality service offered by hotels ( $r=0.725$ ), cost reduction ( $r=0.556$ ) and timely delivery ( $r=0.600$ ). Also it show a slight correlation between transportation and quality service offered by hotels ( $r=0.182$ ), cost reduction



( $r=0.474$ ) and timely delivery ( $0.205$ ). Furthermore, it show very slight correlation between warehouse management and quality service offered ( $r=0.198$ ), cost reduction ( $0.087$ ) and negative correlation for timely delivery ( $r= -0.033$ ). There is a slightly correlation between procurement and quality service ( $r=-.276$ ), cost reduction ( $r=0.388$ ) and timely delivery ( $r=0.254$ )

## 5. Discussion and Conclusion

From the results analyzed all ISC components tested indicate some significance influence to the performance of hotel industry except warehouse management and timely delivery which show a negative relationship. This is to say that, the results from this study support *H1a*(Procurement and cost reduction), *H1b*(procurement and timely delivery), *H1c*(procurement and quality service), *H2a*(transportation and cost reduction), *H2b*(transportation and timely delivery), *H2c*(transportation and quality service), *H3a*(inventory management and cost reduction), *H3b*(inventory management and timely delivery), *H3c*(inventory management and quality service), *H4a*(warehouse management and cost reduction), *H4c*(warehouse management and quality service), *H5*(cost reduction and hotel performance), *H6*(timely delivery and hotel performance) and *H7*(quality service and hotel performance). The finding of this study is in consistent with different literatures read like [22], [31], [25] and [28], [33].

Results from this study has provided a empirical ground for the Integrated supply chain mode (ISCM) with four key components in relation to the performance of hotel industry in Zanzibar, Tanzania. The study can be generalized to the entire industry in Tanzania due to similarities of hotel operations. The researcher believed that if similar study could be done in other region similar findings will be obtained. Generally, the study indicates a significant relationship between the ISCM metrics and hotel industry performance. The hotel industry performance depends on the integration of supply chain activities. 'Synergy of supply chain activities results to high performance rather than individual component'.

Due to the competitiveness in hotel industry this study offers several theoretical and practical implications. First, the study provides a solution to the hotel managers and owners to what extent they need to concentrate on ISCM metrics if they want to dominate the industry. The hotels management can use ISCM metrics proposed in this study as a weapon to beat their competitors in the market. Second, the this study indicate the direction of relationship between the ISCM metrics tested and hotel industry performance, this could help the hotel managers and owners to decide on the amount of money they need to invest for a long term success. Third, this study is a stepping stone for researchers and scholars who intend to conduct study of the similar nature in Tanzania and worldwide in other industry. The study will be used as an empirical literature for other researchers.

Despite such tremendous contributions that can be obtained, this study has some limitations. First, the study was only conducted in one region of Tanzania with little sample size. Therefore, future study should involve more regions in order to extend generalizability over large area. Second, the study

used cross-sectional survey which means the respondents was taken in one point in time using a questionnaire without having any supplement methods. The researchers suggest that, in other study the researcher(s) should used triangulation methods. Lastly, this study involve only four dimensions of ISCM in measuring the hotel industry performance, the researcher suggest that in other study there is a need to involve more dimensions including information sharing, supplier management, and other.

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