

# Relationships amongst Value Creating Variables in an International Freight Forwarding and Logistics Firm: Testing for Causality

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## Abstract

*In a highly competitive market like United Arab Emirates (UAE), cost and quality of services offered to customers are found to be critical in competitiveness for freight forwarding and logistics (FFL) firms.*

*This paper presents a case study that analysed the value creating variables for the UAE office of an international FFL. Five variables were identified by top management as value creating, these are: staff responsiveness, staff professionalism, internal operations, customer satisfaction and loyalty. The study utilises the statistical path analysis technique in testing for the proposed cause – and – effect relationships amongst the above five value creating variables.*

*The findings significantly contribute in identifying value creating variables of FFL firms, and how these firms could utilise the causal links concept to better manage their value creating variables. The findings highlight the importance of monitoring the level of performing value creating variables in a freight forwarding and logistics firm as perceived by its customers.*

## Keywords

**Value Creating Variables  
Balanced Scorecard  
Customer Loyalty and Satisfaction  
Freight Forwarding and Logistics Firms**

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## Introduction

The theme of this paper is confined, as its title entails, to identifying value creating variables in a freight forwarding and logistics firm and testing causal relations amongst them.

The general definition of a freight forwarder is relatively simple; it is a firm that forwards freight from one point to another. The freight forwarder role is essential to ensure that the following problems will never be faced by an exporter/importer: missed flights or sailings of the shipments; failure to negotiate competitive air/inland/sea freight rates; undelivered or misrouted cargo; over billing on air/inland/sea freight costs; failure to insure cargo or arrange adequate coverage; and late presentation of documents on letters of credit.

A freight forwarder must ensure that internationally traded goods move from point of origin to point of destination to arrive at right place, in good order and condition, and at least cost. As such, a freight forwarder must secure the following: timely scheduling of delivery of cargo to meet schedules of air/sea carriers; competitive air/sea/land rates with dependable international carriers and other transportation vendors; documentation; destination tracking of air and sea shipments; assistance in filing cargo claims; prompt responses to quotations request; and direct access to discount rates due to volume contracts.

To accomplish the above, expertise is required in a number of different areas. Close cooperation is required with transporters in every mode, e.g. road, rail, sea and air transportation.

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*The authors are grateful for the constructive and valuable comments of the two anonymous reviewers. The authors, also, are grateful for the anonymous reviewers of the Accounting Information and Management of Development in GCC Countries Conference (Kuwait, 2009) and the European Accounting Association Annual Conference (Finland, 2009) in which earlier drafts of this paper were accepted.*

Freight forwarders are constantly negotiating freight rates with transport providers, comparing the costs of moving cargo along different routes via different modes and then designing logistics infrastructures which provide the best cost-benefit compromise.

The three factors that are identified as fundamental in evaluating transportation cost-benefit performance are: cost, speed and consistency. *Cost* is that incurred for shipping and delivering a cargo between two geographical locations. The time required to complete a specific movement depicts '*speed*'. Speed and cost of transportation are related as transporting firms capable of offering faster services or shorter transit time typically charge higher rates. Thus a critical aspect of selecting the most desirable method of transportation is to balance speed and cost of service. Furthermore, most logistical managers place greater value on *consistency* because it directly impacts a customer's ability to plan and perform its own activities (Bowersox, Closs and Cooper, 2007).

Transportation modes have become more competitive due to deregulation and global trade agreements. The industry has changed from one that merely delivers goods to one that must provide enhanced bundled logistics services and support to its customers (Dileepan and Helms, 2001). Freight forwarders must continually change business practices in order to better meet JIT production schedules and remain competitive (Dileepan and Helms, 2001).

A majority of FFL firms use third party logistics (3LP) which is the supply chain practice where one or more logistics functions of a firm are outsourced to a 3PL provider. Typical outsourced logistics functions are: inbound freight, customs and freight consolidation, public warehousing, contract warehousing, order fulfilment, distribution, and management of outbound freight to the client's customers. The 3PL provider manages and executes a particular logistics function, using its own resources, on behalf of the client company. The logic here is to boost firm's competitiveness by keeping it lean without owning many assets, thus, reducing operational costs. 3LP is also referred to as Contract Logistics. A survey on U.S. Fortune 500 manufacturers was carried out in 2004 to

examine 3PL services used by the surveyed firms (Bentz and Lieb, 2004). The survey results show that cost considerations are to dominate the initial decision to use 3PL services.

Service reliability involves the combined attributes of logistics and concerns a firm's ability to perform all order-related activities as well as to provide customers with critical information regarding logistical operations and status (Bask, 2001; Bowersox et al., 2007). Gray and Makuha (2004) studied the logistics partnerships between freight forwarders and logistic service providers (LSPs), and showed that there was awareness of logistics partnership and strategic integration concepts amongst respondents. The study confirms that the majority of logistics partnerships are still operational rather than strategic in nature, as freight forwarders appear unwilling to transfer strategic functions to LSPs due to fear of losing control.

The remainder of this paper is organised into five sections. The next section gives a brief background of the company under study, and study objectives. Section Three presents a literature review and construction of a causal model of value creating variables at a FFL firm and the development of hypotheses. The research method and descriptive analyses of the research variables are presented in Section Four. Inferential statistics are presented in Section Five and the research summary and conclusions are presented in the last section.

## Background and Study Objectives

The company under study is an international Middle East based freight forwarder with an average of \$120 Million annual sales turnover and \$16 Million in net assets. For anonymity, the company under study will be referred to as X Co; which at present, has 13 freight forwarding and logistics offices around the globe: in the Middle East (United Arab Emirates, Saudi Arabia, Lebanon), Asia, Europe, and North America. X Co.'s office in Dubai (XUAE), is the core of this study. For a population of around 6 million, UAE has six major seaports serving more than 200 shipping lines, four international airports and two national airlines. UAE has 13 free trade zones, and is home to around 5,000

companies. Jebel Ali Free Zone is the most successful in the UAE with 3,000 companies who have invested in it. In 2008, Dubai International Airport was ranked 18th amongst the top 30 cargo airports in the world (Department of Civil Aviation, 2008). In addition, Dubai is recognised as the third most active re-export centre in the world, next to Singapore and Hong Kong (Dubai Chamber of Commerce and Industry, 2005). Nowadays, Dubai is the commercial hub of the region and the gateway of products into the Middle East and Africa from the North American countries, Europe and other Asian countries, notably China, Japan, India and South Korea. Dubai Port (DP) is the fourth largest marine terminal operator in the world by capacity and throughput. In addition it is one of the most geographically diversified container terminal operators, with projects in both well established shipping centres and key emerging markets (Sea Freight, 2007).

With such a booming and thriving market for freight forwarding industry, particularly in the UAE, the XUAE office management was keen on achieving the following three main objectives: (1) meet its customers' requirements, (2) achieve its annual target profit, and (3) maintain the same level of growth encountered in the last 3 years.

Taking the above objectives into consideration, the researchers embarked on a study utilising the logic of causal order amongst lagging and leading drivers of the XUAE office. The study follows Kaplan and Norton's causality logic (i.e. Balanced Scorecard and Strategy Map) in identifying value creating variables in XUAE and then testing for causal relations amongst them. Causality links focuses managers' attention on activities driving high performance in various strategic areas (Yu, Perera and Crowe, 2008). The study took place in 2008 and it incorporates the following objectives:

1. To identify the main value creating variables, starting with the operational ones, for which increased sales turnover is attributed to.
2. To assess customers' perceptions with regard to the way the above variables are executed by XUAE.

3. To construct a cause- and- effect model that depicts the relationships amongst the above variables.

The next section presents a brief literature review on the logic of the Balanced Scorecard (BSC) causal order, the identification of the main value creating variables in XUAE, and the development of the research study hypotheses. The next section presents research method and descriptive analyses, and the final section draws the conclusions.

## Hypothesis Development

### The Logic of Cause- and- Effect Relationships

The BSC is one of the most well known performance management tools available to organisations (Atkinson and Epstein, 2000; Frigo and Krumwiede, 2000; and Yu *et al.*, 2008) whereas it is claimed that approximately 50% of Fortune 1000 companies in North America and 40% in Europe use a version of BSC (Kaplan and Norton, 2001). The BSC is now being listed as a value methodology along with cost-benefit analysis and return on investment (Field, 2000). It is being used to help change organisational culture (Simpson and Cacioppe, 2001) and several companies have reported improved operational efficiency and profitability as a result of using the BSC (see, for instance, Atkinson and Epstein, 2000).

The BSC was developed in 1990's and focuses on the key goals of the organisation and the measurement of performance in achieving those goals (Weetman, 2006). BSC is a set of measures that are directly linked to the company's strategy, whereas it directs a company to link its own long-term strategy with tangible goals and actions. The challenge with BSC is deciding on which measures to choose. It usually consists of four perspectives, namely: financial, customer, internal business processes and learning and growth (Kaplan and Norton, 2001).

The financial perspective concentrates on how the firm appears to its shareholders and considers what the firm's financial objectives are (Barabazon, 1999). The BSC retains the financial perspective since financial measures

are valuable in summarising the readily measurable economic consequences of actions already taken. Financial objectives typically relate to profitability measured, for example, by operating income, return-on-capital-employed, or economic value added. The customer perspective enables companies to align their core customer outcome measures, identify what customers in targeted segments value and choose the value proposition to deliver. The internal-business-process measures focus on the internal processes that will have the greatest impact on customer satisfaction and achieving an organisation's financial objectives. The operation process represents the short wave of value creation in an organisation. It starts with the receipt of a customer order and finishes with the delivery of product or service to the customer. It is argued that firms should identify the defects in their internal processes that could adversely affect costs, responsiveness, or customer satisfaction. The learning and growth perspective develops objectives and measures to drive organisational learning and growth (Kaplan and Norton, 2001).

It is argued that companies might be good at developing mission statements and strategies but poor at implementing operational strategies to achieve them, and that they are poor at measuring whether they are achieving their mission and strategy (Gumbus and Lussier, 2006). The BSC, however, addresses this problem by linking the mission to strategy and then translating the strategy into operational objectives and measures. In implementing a BSC, an organisation's strategy needs to be cascaded down throughout its business units and its measures should be linked causally. It is recommended that executives, as they list objectives in the four perspectives, instinctively start to draw arrows to link the objectives (Kaplan and Norton, 2004). They could articulate their strategy of how improving employee capabilities and skills in certain job positions, coupled with new technology, would enable a critical internal process to improve (Kaplan and Norton, 2004). Customer satisfaction generally leads to customer loyalty and customer retention and, through word of mouth, the acquisition of new customers. Combining customer acquisition and increased business done with existing customers, a company should increase its overall market

share with targeted customers. Finally, retention of customers should lead to an increase in customer profitability, since retaining a customer is less costly than acquiring a new one (Kaplan and Norton, 2004). The chain of cause- and- effect relationships should pervade all four perspectives of a BSC (Kaplan and Norton, 1996).

It is, though, important to draw reader's attention to the fact that the focus of this paper is neither on the application of BSC nor on testing the cause- and- effect relationships amongst its four perspectives. The focus is merely on utilising the casual logic among the identified value creating variables in XUAЕ. The next section explains this focus further.

### **Identifying the Core Variables (Objective 1)**

One of the main objectives of the XUAЕ office management was, as discussed earlier, to identify the main value creating variables for which increased sales turnover is attributed to (Objective 1). At an introductory stage, the researchers worked closely with the XUAЕ office top management to identify these value creating variables. In doing so, the BSC and its cause- and- effect relationships were introduced and explained to the top management giving examples from Kaplan and Norton (1996), which refers to return-on-capital-employed (ROCE) as a scorecard measure in the financial perspective. The driver of this measure could be the repeated and expanded sales from existing customers, which is the result of a high degree of loyalty among those customers. In turn, customer loyalty is included on the scorecard (in the customer perspective) because it is expected to have a strong influence on ROCE. But how will the organisation achieve customer loyalty? Analysis of customer preferences may reveal on-time cargo delivery of orders as valued by customers, thus, should be included on the scorecard (in the customer perspective). The process continues by asking what internal process must the company excel at to achieve on-time cargo delivery. To achieve improved on-time cargo delivery, the business may need to achieve short cycle times in operation processes and high-quality internal processes, both factors could be scorecard measures in the internal perspective, and so forth.

Kaplan and Norton (2001), moreover, argue that “over the short term, managers’ assessment of strategic impact may have to rest on subjective and qualitative judgements. Eventually, however, as more evidence accumulates, organisations may be able to provide more objectively grounded estimates of cause-and-effect relationships” (p.197). Kaplan and Norton (2001) give an example of one organisation that attempted to validate its hypothesised cause-and-effect relationships in the BSC. The organisation measured the strength of the linkages among measures in the different perspectives and reported significant correlations between employees’ morale and customer satisfaction.

The XUAE management, following the above introductory phase, started to put together the main value creating variables that were believed to drive/affect sales turnover. Sales turnover, though, was specified as a short term strategy for the firm. It was meant that variables incorporated are to be few embracing only those that the top management identifies as value creating ones. A discussion of the inclusion of the main value creating variables is presented next.

In light of the understanding the BSC’s causal logic, XUAE management thought of customer loyalty as an essential variable in boosting sales turnover. It recognises that it is far less expensive to retain customers than to continually add new ones to replace those who defect. Gronross (2007), for instance, suggests that it costs at least five times more to get a new customer than to achieve re-sales to an existing one. He also suggests that if a firm has to win over a dissatisfied ex-customer, it will cost at least 25 times as much as it does to acquire a new customer. Thus, he implies that in most situations it will be more expensive to get a new customer to replace a lost one and that it probably will cost even more to get an unsatisfied and lost customer back again.

Loyal customers are said to value the quality of services companies offer. Companies retain customers, in part, not only by consistently delivering on their primary value proposition, but also by ensuring service quality. It was thus decided that customer satisfaction to be the second variable identified by XUAE. It is argued that customers will be satisfied whenever their expectations of a supplier’s

performance are met or exceeded. The goal is to satisfy the needs of different parties both upstream and downstream in the chain for greater effectiveness and efficiency than competitors. In this context, effectiveness refers to the extent to which customers requirements are met, while efficiency measures how economically resources are utilised in meeting customer requirements (Mentzer and Konrad, 1991). In a freight forwarding and logistics industry, service functions are highly interrelated. In executing operations in the logistic industry, the operation process represents the short wave of value creation in organisations. It starts with receipt of a customer order and finishes with the delivery of the service to the customer. It is argued that the ability of identifying customers’ needs, in order to ultimately satisfy them, is related to the level of staff’s knowledge (see, for instance, Davis and Albright, 2004). XUAE management identified two variables as crucial in performing operation processes, these are: staff responsiveness and staff professionalism. Cook (2008) argues that highly engaged staff do deliver higher levels of customer engagement and can positively impact the quality of their company’s products and services as well as positively impacting the customer’s experience.

To conclude, XUAE management identified five variables as the main value creating ones in XUAE, these are staff professionalism ( $Y_1$ ); staff responsiveness ( $Y_2$ ); internal operation ( $Y_3$ ); customer satisfaction ( $Y_4$ ); and customer loyalty ( $Y_5$ ). It was, then, hypothesised that associations would exist among staff responsiveness and professionalism and internal operation, internal operation and customer satisfaction and between customer satisfaction, and customer loyalty. Accordingly, this study examines the existence of significant associations among the five variables as depicted in the proposed causal model in Figure 1.

The Figure 1 model is literature-based and constructed in line with XUAE management’s view of value creating variables. The model is the base from which the cause- and- effect concept is tested in this study. It is noteworthy to indicate that the management did not allow access to financial data, thus, the model is confined to customer loyalty and does not

extend to incorporate the causal relation between it and sales turnover (financial details). The study hypotheses, therefore, can be stated in a set of four hypotheses as follows:

- H<sub>1</sub>:** *There is a significant association between Staff Professionalism (Y<sub>1</sub>) and Internal Operation (Y<sub>3</sub>) in XUAE.*
- H<sub>2</sub>:** *There is a significant association between Staff Responsiveness (Y<sub>2</sub>) and Internal Operation (Y<sub>3</sub>) in XUAE.*
- H<sub>3</sub>:** *There is a significant association between Internal Operation (Y<sub>3</sub>) and Customer Satisfaction (Y<sub>4</sub>) in XUAE.*
- H<sub>4</sub>:** *There is a significant association between Customer Satisfaction (Y<sub>4</sub>) and Customer Loyalty (Y<sub>5</sub>) in XUAE.*

The next section presents the research method and descriptive analyses.

## Research Method and Descriptive Analyses

### Questionnaire Design

Questionnaire forms of four A4 pages, with self-addressed covering letters explaining the purpose of the survey, were used in collecting data from respondents. The development of the questionnaire form went through different stages. At an early stage, problems were encountered with regard to the type of data to be collected since the XUAE office did not have a record of historical data concerning either customer satisfaction or measures of the levels of services offered to its customers. Another problem encountered was related to the choice of industry-specific (adapted) questions on the variables incorporated. All efforts were made to tackle the above problems in designing the questionnaire form.

XUAE management was highly involved in formulating questions related to the variables incorporated. Management was keen to include questions that were practical and extracted from the freight forwarding and logistics industry. The final questionnaire form was, thus, consistent with literature (See for instance, Brandt, 1996, Kaplan and Norton,

1996, 1998 and 2000, and Cook, 2008) and, more importantly, XUAE's management expertise.

The final form of the questionnaire consisted of three parts: A, B and C. In Parts A and B, respondents were asked to rank their evaluation of questions related to the five variables incorporated. Part C, included general open ended questions. A copy of the questionnaire is presented in the Appendix. Prior the commencement of data collection, a pilot study was carried out. Questionnaires were first evaluated by four senior managers working for various companies using XUAE's services in January, 2008. All questions were tackled with no changes proposed. The data collection is presented next.

### Data Collection

Two characteristics were considered in selecting the study sample: annual turnover and the size of the firms using XUAE's services. The company classifies its customers into two classes: accounts and walking in customers. The accounts are those who make recurring transactions with XUAE for over \$50,000 annual turnover, while walking in customers are those who make rare nonrecurring transactions totalling less than \$50,000 in annual turnover. The former, i.e. accounts, are of medium and large size firms<sup>1</sup>, while the latter, i.e. walk in customers, are usually small size<sup>2</sup> firms.

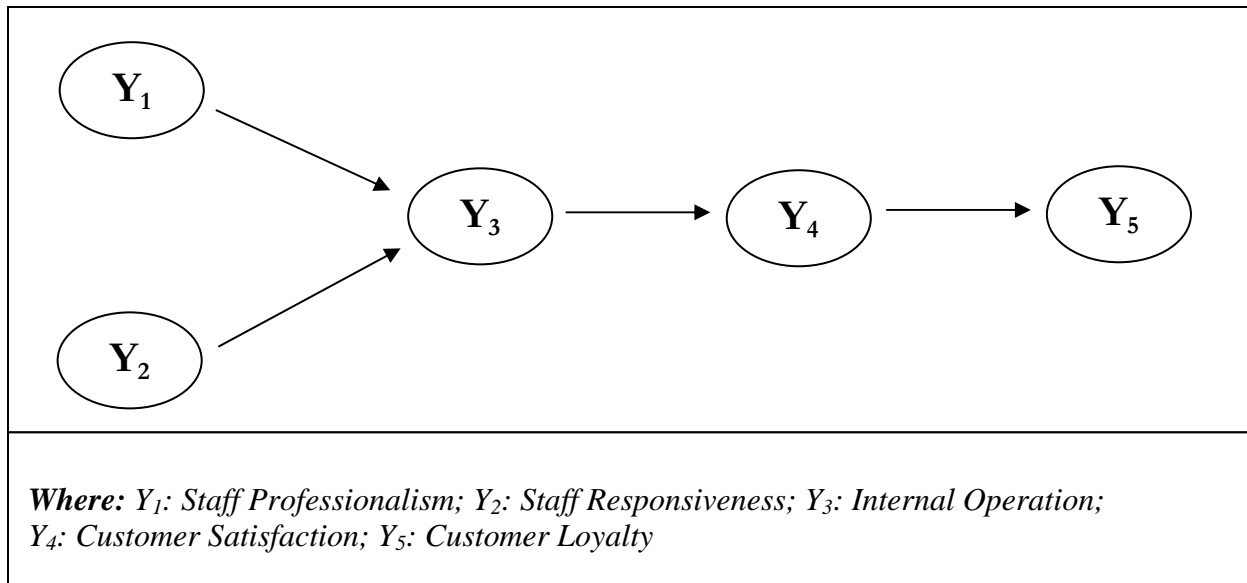
The study population consisted of 55 active accounts. The logic was that in evaluating the perception of customers on how XUAE performs in relation to the five identified variables, it was better to focus on accounts only. The study sample was decided<sup>3</sup> to be around 70% of the population and 38 accounts (firms) were randomly selected. Questionnaire forms were handed, in early February, 2008 to managers of the selected 38 firms. Respondents were given a brief verbal explanation on the types of questions and what was required from them. Anonymity was granted to all respondents. Telephone follow-ups were made in mid-February, 2008.

<sup>1</sup> More than or equal 100 employees.

<sup>2</sup> Less than 100 employees.

<sup>3</sup> Given time and efforts constraints.

**Figure 1: The Hypothesised Causal Order Amongst Value Creating Variables**



Thirty-two usable responses<sup>4</sup> were received by the end of February, 2008 giving an overall response rate of 84.2%. Reliability of measurements was examined using SPSS. Cronbach’s Alfa results are presented in Table 1.

**Table 1: Testing Respondents’ Reliability**

Variables	Cronbach’s Alfa
Y <sub>1</sub>	.601
Y <sub>2</sub>	.875
Y <sub>3</sub>	.867
Y <sub>4</sub>	.871
Y <sub>5</sub>	.913

It can be concluded, from the above table, that reliability of measurements of the variables incorporated is acceptable (Peterson, 1994). Measurements of the five variables incorporated (Y<sub>1</sub> – Y<sub>5</sub>) and the descriptive analysis and discussion(objective 2), are presented next.

**Variables Measurements and Descriptive Analyses (Objective 2)**

*Staff Professionalism (Y<sub>1</sub>):* Staff productivity is an outcome measure of the aggregate impact from enhancing employees’ skills and moral,

improving internal processes, and satisfying customers (Kaplan and Norton, 1996). Staff professionalism (Y<sub>1</sub>) was measured by asking respondents to rank their evaluation, on a 5 points Likert scale, from (1) strongly disagree to (5) strongly agree, of the following questions:

1. Customer service representative was knowledgeable and easy to understand.
2. Customer service representative was courteous and professional.
3. My phone call was quickly transferred to the person who could best assist me.

*Staff Responsiveness (Y<sub>2</sub>):* Customers experience services offered in the way staff talk, behave and deal with them so that the company’s own culture and values shine through everything it does (Cook, 2008). Staff responsiveness (Y<sub>2</sub>) was measured by asking respondents to rank their evaluation, on a 5 points Likert scale, from (1) strongly disagree to (5) strongly agree, of the following questions:

1. The customer service representative handled my call quickly.
2. Waiting time for having questions addressed was satisfactory.
3. Time it took customer service to answer my questions and resolve my issues was satisfactory.

<sup>4</sup> Questions related to parts A and B were completely answered in all cases.

*Internal Operation (Y<sub>3</sub>):* This is the short wave of value creation in any business. It starts with the customer order and finishes with the delivery of the service to the customer. This process stresses the need for efficient, consistent and timely delivery (Inman, 2000). Many customers value highly short lead time, measured as the time elapsed from when they place an order until the time when they receive the desired product or service. They also value reliable lead time, as measured by on-time delivery (Kaplan and Norton, 1996). Internal operation (Y<sub>3</sub>) was measured by asking respondents to rank their evaluation, on a 5 points Likert scale of (1) very poor to (5) very good, of the following questions:

1. Meeting schedule needs.
2. On-time cargo delivery.
3. Meeting and understanding customer's expectation.

*Customer Satisfaction (Y<sub>4</sub>):* This implies measuring the satisfaction level of customers along specific performance criteria. Service standards should be monitored against what customers perceive to be important (Cook, 2008). Customer satisfaction (Y<sub>4</sub>) was measured by asking respondents to rank their evaluation, on a 5 points Likert scale, from (1) very poor to (5) very good, of the following questions<sup>5</sup>:

1. Overall satisfaction with your contact in XUAE.
2. Overall satisfaction with the way your queries were dealt with/resolved.
3. Overall satisfaction with XUAE.

*Customer Loyalty (Y<sub>5</sub>):* Most measurement models of customer satisfaction explicitly include elements related to customer value and customer loyalty (Brandt, 1996). Customer loyalty could be reflected by a combination of the following attitudes and behaviours (Brandt, 1996): an intention to use transit service again; a willingness to recommend transit service to friends, colleagues, and others persons; and disinterest in alternative means of transportation when these are available.

<sup>5</sup> See, for instance, Customer Satisfaction Survey (2007a and b) and Customer Services Satisfaction (2007).

A possible measure of customer loyalty is the *Secure Customer Index* (Brandt, 1996). A secure customer is one who says that he/she is: (a) very satisfied with the service, (b) definitely will continue to use the service in the future, and (c) definitely would recommend the service to others. In this study, customer loyalty (Y<sub>5</sub>) was measured by asking respondents to rank their evaluation, on a 5 points Likert scale, from (1) strongly disagree to (5) strongly agree, of the following questions<sup>6</sup>:

1. If I could go back in time, I would still choose XUAE.
2. I will choose XUAE the next time I have similar requirements.
3. I will confidently recommend XUAE to others.

Respondents' evaluation of questions related to staff professionalism (Y1), staff responsiveness (Y2), and customer loyalty (Y5) are presented in Table 2.

Findings in Table 2 show that there is a tendency amongst respondents to rank high all questions (Means > 4) related to staff responsiveness, professionalism and customer loyalty (for instance, findings show 75% of respondents seem to be loyal to the company). Findings, however, highlight that almost quarter of respondents seem to disagree or to be undecided when it comes to two of the 'customer loyalty' (Y5) questions (Q1 and Q2). Consequently, in XUAE endeavour for excellence, an action has been taken to retain customers and transform them into highly satisfied by ensuring service quality and correcting problems. XUAE management started developing capabilities in customer service to respond to requests about orders, deliveries, and problems. For instance, the survey results indicated that some accounts handled directly by a particular employee were unsatisfactory. A subsequent follow up with the affected accounts (customers) indicated that they had a strong tendency to change to another company without any notice due to the employees' failure in meeting their requirements. The management conducted an evaluation of the employee's performance in

<sup>6</sup> See, for instance, Brandt (1996); Customer Satisfaction Survey (2007a and b); and Customer Services Satisfaction (2007).



terms of accounts' retention and concluded that none of his previous customers were still using the services of XUAE. Consequently, a decision was made by the management to relocate that employee to another department under a supervision of a senior manager. Also the management decided to boost its rapport with its accounts by assigning the UAE country manager to closely monitor them and conduct systematic follow up with them regularly.

Table 3, presents respondents' evaluation of questions related to internal operations (Y3) and customer satisfaction (Y4).

Table 3 indicated respondents high evaluations (Means > 4) of the questions related to meeting and understanding customers' expectations. Also the vast majority of them (94% and 88%) have an overall satisfaction with their contact in the company and an overall satisfaction with the XUAE respectively.

The findings, though, reveal that XUAE managers should improve internal operation processes, in particular when it comes to 'meeting schedule needs' and 'on-time cargo delivery'. These processes enable the business unit to deliver the value propositions that will attract and retain customers in targeted market segments, and have the greatest impact on customer satisfaction. An improvement in such 'internal operation' aspects is expected to lead to higher customer satisfaction, hence, higher customer loyalty. In reaction, XUAE management decided to have its own fleet of trailers for container positioning while at the same time tie up relations with sub-contractors by speeding the payments process to motivate drivers, hence, meet the on-time time schedule as requested by customers. Simultaneously, two new employees were recruited to assist the operation manager in meeting schedule needs and to coordinate with concerned persons to ensure 'on-time cargo delivery'.

**Table 2: The Distribution of Respondents' Evaluation of Staff Professionalism (Y<sub>1</sub>), Responsiveness (Y<sub>2</sub>), and Customer Loyalty (Y<sub>5</sub>) Questions**

Questions	N	% Strongly Disagree and disagree (1 & 2)	% Undecided (3)	% Agree and strongly agree (4 & 5)	Mean	Median	Standard Deviation
<b>Staff Professionalism (Y<sub>1</sub>)</b>							
Q <sub>1</sub> = The customer service representative was knowledgeable and easy to understand	32	0	3.1	96.9	4.50	5.00	.568
Q <sub>2</sub> = The customer service representative was courteous and professional	32	0	0	100	4.66	5.00	.483
Q <sub>3</sub> = My phone call was quickly transferred to the person who could best assist me	32	0	6.3	93.7	4.44	4.50	.619
<b>Staff Responsiveness (Y<sub>2</sub>)</b>							
Q <sub>1</sub> = The customer service representative handled my call quickly	32	9.4	3.1	87.5	4.38	5.00	.942
Q <sub>2</sub> = The waiting time for having question addressed was satisfactory	32	9.4	3.1	87.5	4.16	4.00	.884
Q <sub>3</sub> = The time it took customer service to answer my questions and resolve my issues was satisfactory	32	9.4	6.3	84.3	4.13	4.00	.907
<b>Customer's Loyalty (Y<sub>5</sub>)</b>							
Q <sub>1</sub> = If I could go back in time, I would still choose XUAE	32	6.3	18.8	75.0	4.06	4.00	.914
Q <sub>2</sub> = I will choose XUAE next time I have similar requirements	32	3.1	18.8	78.2	4.22	4.00	.870
Q <sub>3</sub> = I will confidently recommend X Co. UAE to others	32	3.1	6.3	90.7	4.47	5.00	.761

1= Strongly Disagree, 2=Disagree, 3=Undecided, 4= Agree, and 5= Strongly Agree

**Table 3: The Distribution of Respondents' Evaluation of Internal Operation (Y<sub>3</sub>) and Customer Satisfaction (Y<sub>4</sub>) Questions**

Questions	N	% Very Poor and poor (1 & 2)	% Average (3)	% Good and Very Good (4 & 5)	Mean	Median	Standard Deviation
<b>Internal Operation (Y<sub>3</sub>)</b>							
Q 1= Meeting schedule needs	32	0	28.1	79.1	4.06	4.00	.801
Q 2= On-time cargo delivery	32	9.4	9.4	81.2	4.03	4.00	.999
Q 3= Meeting and understanding customer's expectation	32	3.1	9.4	87.5	4.25	4.00	.762
<b>Customer Satisfaction (Y<sub>4</sub>)</b>							
Q <sub>1</sub> = Overall Satisfaction with your contact in X Co. UAE	32	0	6.3	93.7	4.47	5.00	.621
Q <sub>2</sub> = Overall Satisfaction with the way your queries dealt with/resolved	32	0	18.8	81.2	4.34	5.00	.787
Q <sub>3</sub> = Overall Satisfaction with XUAE	32	3.1	9.4	87.5	4.38	5.00	.793
<i>1=Very Poor, 2=Poor, 3= Average, 4= Good, and 5=Very Good</i>							

Moreover, in the survey, respondents were asked (in Section C in the questionnaire form) to list other companies that they deal with and which they consider as direct competitors to XUAE. Responses show that direct competitors are international companies with worldwide branches that are larger than XUAE in terms of total turnover, number of staff, and infrastructure. Furthermore, XUAE competitors seem to have strong corporate images in the market. In reaction, XUAE management decided to work on improving its image by printing a new brochure and distributing it to existing and potential customers.

The next section tests for causal relationships amongst the five variables (Y<sub>1</sub> – Y<sub>5</sub>) incorporated in this study (Objective 3).

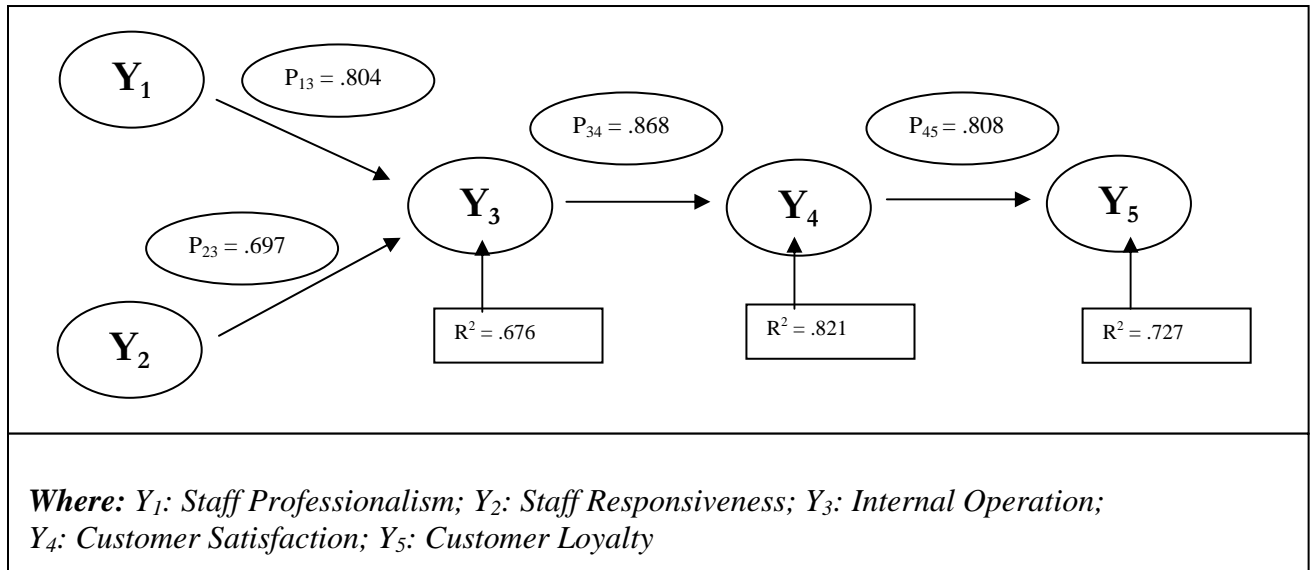
### Testing for Causal Relationships (Objective 3)

The third objective of this study is to construct a model that depicts cause- and- effect relationships amongst the five incorporated variables (Y<sub>1</sub> – Y<sub>5</sub>), especially in relation to the four hypotheses that were to be tested in light of the proposed causal model as shown in Figure 1. The proposed model, also, indicates, mathematically, the percentage of change encountered in one variable that is attributed to changes in its antecedent variables. A path analysis technique was deployed, using SPSS 14, to examine for the above relationships. Path analysis is a “method for tracing out the implications of a set of causal assumptions

which the researcher is willing to impose upon a system of relationships” (Nie, Hull, Jenkins, Steinbrebber and Bent, 1975, p 389). It is based on sound theoretical reasoning and tests causal models whereas it forces researchers to make explicit the causal relationships, though it cannot confirm the underlying causal structure, amongst incorporated variables (De Vaus, 1996; Bryman and Cramer, 2001; and Abdel-Maksoud, 2007). It also utilises multiple-regression technique as it makes use of R<sup>2</sup>, thus enables an evaluation of how good the model is. It uses beta weights (standardised path coefficients) and pinpoints the total effect, direct and indirect, each variable has. It, however, imposes certain requirements on the relationships amongst variables incorporated, these are (Norreklit, 2000 and Luft and Shields, 2003): (a) a causal relationship is presented in a one way arrow going from the cause to the effect; and (b) variables incorporated need to have a definite time order. The results of path analysis are presented in Figure 2.

One can conclude, from Figure 2 below, that findings of this study validate the causal model proposed in Figure 1. Figure 2 concludes that all hypotheses in this study are accepted as noticed by the all significant associations amongst variables in the diagram. Figure 2 also depicts that most of changes (73%) in their evaluation of questions relating to customer loyalty (Y<sub>5</sub>) are explained by changes in respondents' evaluation of prior variables in the model (Y<sub>1</sub> – Y<sub>4</sub>).

**Figure 2: The Path Diagram for the Hypothesised Causal Order amongst Value Creating Variables**



One of the advantages of using a path analysis technique in testing for causality is that it enables researchers to compute the total effect, direct and indirect, of preceding variables in the path diagram on the preceding ones.

Table 4 shows the total effect incorporating

both direct and indirect effects of variables (Y<sub>1</sub>-Y<sub>4</sub>) on Y<sub>5</sub>.

Table 4 also shows that a one unit change in Y<sub>4</sub> leads to .808 unit change in Y<sub>5</sub>, and a one unit change in Y<sub>3</sub> leads to .701 unit change in Y<sub>5</sub>, etc.

**Table 4: Calculations of Total Effects of Y<sub>1</sub>-Y<sub>4</sub> on Y<sub>5</sub>**

Preceding variables	Total direct effect (1)	Total indirect effect (2)	Total effect (1 + 2)
Effect of Y <sub>1</sub> on Y <sub>5</sub>	-	$P_{13} * P_{34} * P_{45} = .697 * .868 * .808 =$	.489
Effect of Y <sub>2</sub> on Y <sub>5</sub>	-	$P_{23} * P_{34} * P_{45} = .804 * .868 * .808 =$	.564
Effect of Y <sub>3</sub> on Y <sub>5</sub>	-	$P_{34} * P_{45} = .868 * .808 =$	.701
Effect of Y <sub>4</sub> on Y <sub>5</sub>	$P_{45} = .808$	-	.808

**Summary and Conclusions**

The highly competitive forwarding and logistics market in United Arab Emirates (UAE), especially Dubai, drove firms in the sector to continually improve their services offered to customers, i.e. shippers, in order to maintain their loyalty and boost firms' financial returns. The company under study,

referred to as XUAE, is one of 13 offices of X Co., an international freight forwarding and logistics firm. This paper presents findings of a case study carried out in 2008 on XUAE. The paper has three main objectives: first, to identify the main value creating variables in XUAE, starting with the operational ones, of which increased sales turnover is attributed to; second, to assess customers' perceptions with regard to the way the identified variables are offered by XUAE; and third, to construct a

cause- and- effect model that depicts causal relationships amongst the above identified variables.

Five variables were identified (Objective 1) in this study as value creating. These are: staff professionalism ( $Y_1$ ); staff responsiveness ( $Y_2$ ); internal operation ( $Y_3$ ); customer satisfaction ( $Y_4$ ); and customer loyalty ( $Y_5$ ). The identification of these variables was not arbitrary, but based on thorough understanding of the logic of the balanced scorecard (BSC) and its causal links in addition to XUAE management expertise. The researcher then evaluated customers' perceptions of these five variables (Objective 2). This step was not easy as XUAE did not have a history of any kind of customers' assessments/perceptions of its services prior to the commencement of this study. A customer survey was carried out to achieve this objective, where questionnaire forms were handed to managers of 38 sample firms using XUAE services in early 2008. The questionnaire forms consisted of questions addressing the five variables. 32 usable responses were received giving 84% response rate. The study findings, interestingly, show that most of the respondents highly rated all of the five variables identified.

A proposed causal model linking the identified five variables ( $Y_1 - Y_5$ ) was then developed (Objective 3). The model proposes that staff responsiveness and professionalism lead to better performance of the internal operations of XUAE which results in more satisfied, hence, more loyal customers. The more customers are loyal, the more the financial returns/profitability of XUAE. The causal links amongst these five variables were tested utilising the statistical path analysis technique. The results validated the proposed causal model.

The findings of this study could be seen as both contributing to the management accounting literature and having practice implications. First, findings significantly contribute to enhancing international freight forwarding and logistics firms' awareness of the importance of identifying their value creating variables. Second, they also contribute to a better understanding and implementation of how freight forwarding firms, especially in emerging economies, could utilise the causal links concept in a

better management of their value creating variables.

Third, the causal model developed in this study, (Figure Two), could be useful in bringing to management attention the importance of giving equal weights to its identified value creating variables. In other words, the model could be seen as focusing management's attention on any lack of coordination or completeness amongst its identified value creating variables, for instance, management could be putting an immense weight of importance on measuring levels of customer satisfaction in relation to measuring other important variables such as internal operations and staff related ones.

Fourth, the model has potential usefulness as a schema for communicating management strategy, whether short-term or long-term, across the firm.

Finally, the findings highlight the importance of monitoring the level of performing value creating variables in a freight forwarding and logistics firm as they are perceived by its customers.

The study recommends further research studies to be carried out on how to benchmark measures of effectiveness in meeting customers expectations in the transportation field. It must be noted, however, that the findings of this study need to be read in light of their limitations. First, the use of BSC causal logic has been criticised in the literature. For instance, Norreklit (2000) argues that the four BSC perspectives are interdependent and that "there are no causal relationships between measures from the four perspectives" (p 75). Also, Brignall (2002) argues that these causal relationships are "not always linear and one-way, but are commonly a fuzzy mess of interactions and interdependencies that inevitably fail to capture the unintended consequences that many performance improvement initiatives may have" (p 89). Second, the statistical technique used to test for causality in this study, i.e. path analysis, whilst based on sound theoretical reasoning, still cannot confirm the underlying causal structure amongst incorporated variables. Third, the conventional limitation of using questionnaire forms in data collection and the scope of data analysis must

be considered. Fourth, generaliseability of the study conclusions is questionable as they were based on a case study of a single freight forwarding and logistics firm and its customers. Fifth, the identification of the study's value creating variables could, to an extent, be affected by management characteristics, especially the short-termism of concentrating on achieving/maintain required financial returns.

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**Appendix One: Questions in the Questionnaire Form**

The following statements pertain to the customer service representative *you dealt with most recently*.

**Part A:**

On a scale from 1 (Strongly Disagree) to 5 (Strongly Agree), please encircle the number that best depicts your disagreement/agreement with the following statements:

Statement	1 Strongly Disagree	2 Disagree	3 Undecided	4 Agree	5 Strongly Agree
1) The customer service representative was knowledgeable and easy to understand	1	2	3	4	5
2) The customer service representative handled my call quickly	1	2	3	4	5
3) The customer representative was courteous and professional	1	2	3	4	5
4) The waiting time for having questions addressed was satisfactory	1	2	3	4	5
5) My phone call was quickly transferred to the person who could best assist me	1	2	3	4	5
6) The time it took customer service to answer my questions and resolve my issues was satisfactory	1	2	3	4	5
7) If I could go back in time, I would still choose XUAE	1	2	3	4	5
8) I will choose XUAE the next time I have similar requirement	1	2	3	4	5
9) I will confidently recommend XUAE to others	1	2	3	4	5

**Part B:**

On a scale from 1 (Very Poor) to 5 (Very Good), please encircle the number that best rate your levels of satisfaction with the following statements.

	1 Very Poor	2 Poor	3 Average	4 Good	5 Very Good
1) Meeting scheduling needs	1	2	3	4	5
2) On-time cargo delivery	1	2	3	4	5
3) Meeting and understanding customer's expectations	1	2	3	4	5
4) Overall satisfaction with your contact in XUAE	1	2	3	4	5
5) Overall satisfaction with the way your queries were dealt with/resolved	1	2	3	4	5
6) Overall satisfaction with XUAE	1	2	3	4	5

