

**SUPPLY CHAIN PERFORMANCE OF DOMESTIC  
AIRLINES IN KENYA**

**BY**

**REUBEN EBEI**

**D61/60284/2011**

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE AWARD OF MASTERS DEGREE OF  
BUSINESS ADMINISTRATION (MBA), SCHOOL OF BUSINESS,  
UNIVERSITY OF NAIROBI**

**OCTOBER, 2013**

## DECLARATION

This research project is my original work and has never been presented in any other University.

Signature: .....

**REUBEN EBEI**

**D61/60284/2011**

This research project has been submitted for examination with my approval as the University supervisor.

Signature: .....

**ONSERIO NYAMWANGE**

**LECTURER,**

**DEPARTMENT OF MANAGEMENT SCIENCE,**

**SCHOOL OF BUSINESS,**

**UNIVERSITY OF NAIROBI**

## **DEDICATION**

This is a dedication to my Loving parents; Benson Ebei and Rebecca Ebei. My loving Brothers Charles, Chris, Steve and Sisters Nelly, Hilda and Joy and my loving wife Winnie for their support in doing the MBA Project.

## **ACKNOWLEDGEMENT**

I would like to thank the entire University of Nairobi Postgraduate team especially the MBA academic team .I would also like to thank my moderator, the Chairman of Management Science department, Dr. Njihia for his advice and assistance on the research methodology, Onserio Nyamwange my supervisor for his professional guidance on the project who assisted me in doing the thematic and content analysis for the project.

I would like to express my great appreciation to my Loving Parents who provided both financial and mutual support for my MBA project. My gratitude also goes to my siblings for providing me with emotional and psychological support through the whole MBA process.

## **ABSTRACT**

The purpose of this study was to determine the Supply Chain performance in Domestic Airlines. The research design used for the study was the descriptive design. The target population of the study was composed of the supply chain personnel working at the two busiest airports (Jomo Kenyatta and Wilson Airport Respectively). The researcher used the questionnaire to gather data from respondents. The data collected was analysed by use of statistical techniques which include, inferential statistics of correlation and regression analysis. The study found the following factors were reported to affect supply chain performance in the organizations: the unexpected changes of customer, supplier, competitor, and technology; the increase of outsourcing activities in the industry; lack of enough government support especially in importing raw materials or products from overseas or using domestic materials; Social uncertainties such as religion, environment, language, cultural issues, limitations of communication and also the technology; political uncertainties; Monopoly and competition among local airlines. The study also concluded that the local airlines in Kenya use Information Communication Technology as most companies and indeed most of the local airlines in Kenya have an established Customer-Supplier Relationship. The study also observed that the airlines corporate culture is conducive for the supply chain performance since management of most airlines has a supply chain quality policy. The study recommends that there should be a clear process of selecting suppliers that are credible, have an established relationship department.

# TABLE OF CONTENTS

<b>DECLARATION .....</b>	<b>ii</b>
<b>DEDICATION .....</b>	<b>iii</b>
<b>ACKNOWLEDGEMENT.....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>LIST OF TABLES.....</b>	<b>viii</b>
<b>LIST OF FIGURES.....</b>	<b>ix</b>
<b>CHAPTER ONE: INTRODUCTION.....</b>	<b>1</b>
1.1 Background of the Study .....	1
1.2 Problem Statement .....	5
1.3 Research Objective.....	7
1.4 Value of the study .....	7
<b>CHAPTER TWO: LITERATURE REVIEW .....</b>	<b>9</b>
2.1 Introduction.....	9
2.2 Theories of Supply Chain Management .....	9
2.3 Elements of Supply Chain Management .....	10
2.4 Supply Chain Performance .....	13
2.5 Conceptual Frame Work.....	20
2.6 Empirical Review .....	21
2.7 Summary of Literature Review .....	23
<b>CHAPTER THREE: RESEARCH METHODOLOGY .....</b>	<b>25</b>
3.1. Introduction.....	25
3.2. Research design.....	25
3.3. Study Population and Sampling .....	25
3.4 Data Collection .....	25
3.5 Data Analysis and Presentation .....	26

<b>CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION .....</b>	<b>27</b>
4.1 Introduction.....	27
4.2 Basic information .....	27
4.3 Factors affecting the supply chain performance .....	29
4.5 Hindrances of successful performance in supplies chain in organizations .....	35
4.6 Factors that affect supply chain performance in the organization .....	35
4.7 Challenges experienced in the supplies chain performance process.....	35
4.8 Correlation analysis.....	36
4.7 Regression Analysis .....	37
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS...</b>	<b>42</b>
5.1 Introduction.....	42
5.2 Summary of Findings .....	42
5.3 Conclusion .....	44
5.4 Recommendations .....	45
5.5 Limitations .....	46
5.6 Suggestions for Further Research .....	46
<b>REFERENCES .....</b>	<b>47</b>
<b>APPENDICES .....</b>	<b>52</b>
<b>Appendix I: Letter of Introduction .....</b>	<b>52</b>
<b>Appendix II: Questionnaire .....</b>	<b>53</b>

## **LIST OF TABLES**

Table 4.2: Statements on Customer-Supplier Relationship .....	30
Table 4.3: Material Flow Processes.....	32
Table 4.4: Statements regarding Corporate Culture .....	33
Table 4.6: Pearson Correlation coefficients Matrix .....	36
Table 4.7: Strength of the model.....	38
Table 4.8: Analysis of variance.....	39
Table 4.9: Coefficients of regression equation .....	40



## LIST OF FIGURES

Figure 2:1: Conceptual Framework..... **Error! Bookmark not defined.**

## **CHAPTER ONE: INTRODUCTION**

### **1.1 Background of the Study**

Chin et al (2004) notes that back in the 1960s, the cornerstone to every successful company is to make customers, keep customers, and maximize customer profitability. Later, the focus moved away from low costs and low quality product markets to high quality products markets at lower costs with greater responsiveness. Numerous quality initiatives have been initiated by many companies, including total quality management (TQM), ISO certification and just-in-time (JIT) for quality assurance and measurement (Chandra and Kumar, 2000). By the early 1990s, intense competition and global markets forced organizations to get a product and service to the right customer, at the most opportune time and at the lowest cost (Altekar, 2005; Li et al., 2003).

More and more organizations are promoting supply chain competitiveness to attain organizational efficiency, as present competition is between effective supply networks rather than individual organizations. In the 21st century, supply chain management (SCM) shapes a new paradigm of organizational sustainability and competitiveness (Gunasekaran, 2004). SCM is progressively recognized as a key and vital corporate strategy, which links both suppliers and customers in order to enhance overall flight flexibility. Besides, successful SCM is a prominent tool to reduce cost of operation by eliminating all non-value added activities in the flow of various kinds of materials from supplier to end customer (Chan and Lee, 2005).

A supply chain is a bidirectional flow of information, products and money between the initial suppliers and final customers through different organizations (Nurmilaakso, 2008). It can be both internal and external in its nature. In an internal context, the elements of a SC are represented by various intra-organizational functions (such as for example sales and marketing, procurement, production planning, warehouse and transport management), whereas the external supply chain further encompasses movements of material, information and funds between companies and their suppliers, customers and various business partners.

Supply chain management is an issue of great concern in many industries as companies realize the importance of creating an integrated relationship with their supplier and customers. The objective of SCM is to maximise value in the supply chain. The value of supply chain generates is the differences between what the final product is worth to the customer and the will in-cure to fulfil the customer's request (Chopra and Meimdl, 2010). SCM is about competing on value, collaborating with customers and suppliers to create a position of strength in the market place based on value derived from the end consumer (Chopra and Meindl, 2007) Within the organisation, customer value is created through collaboration and cooperation to improve efficiency (lower cost) or market effectiveness (add benefits) in ways that are most valuable to key customers. Value is not inherent in products or services but rather is perceived or experienced by the customer (Hadfield ,Moncka Guinipero and Petterson, 2009 ) . The ultimate goal of SCM process is to create customer and shareholders value, thus often called a value delivery system.

SCM encompasses planning, manufacturing and operations management necessary to bring a product to the market place, from the sourcing of materials to the delivery of completed product. Some of the issues to consider when developing or managing a supply chain include integration, information technology, collaboration, customer and supplier relationships, partnership outsourcing and global issues as well as social and environmental issues (Borade and Nadsod, 2007).

### **1.1.1 Supply Chain performance**

SCM performance is defined as the operational excellence to deliver leading customer experience (Simchi-Levi et al., 2003). Beamon (1999) mentions some features present in ineffective performance measurement systems and these include the following: inclusiveness (measurement of all pertinent aspects), universality (allows for comparison under various operating conditions), measurability (data required are measurable), and consistency (measures consistent with organization goals). Also, the strategic goals include key elements such as the measurement of resources (generally cost), output (generally customer responsiveness) and flexibility. Stevens (1990) states that to build up an integrated supply chain requires the management of material flow from three perspectives: strategic, tactical, and operational. From these perspectives, the use of systems, facilities, and people must be seen as a whole and work in a coordinated manner. He also mentions that a company can measure the supply chain performance by inventory level, service level, throughput efficiency, supplier performance, and cost.

Lear-Olimpi (1999) also stated that logistics play an important role in pursuing supply chain excellence which will lead to improved business performance (Lear-Olimpi, 1999).

### **1.1.2 Airline Supply Chain**

Simchi levi et al (2000) notes that the convectional objective of an airline supply chain is to get the right material to the right place at the right time. The secondary objective has been to manage the parts procurement and supply chain function as efficiently as possible. Beamon (1999) adds that in today's highly competitive airline market and increasingly in the future- Efficiency in supply chain operations has reached a new and more critical dimension. This has been emerging over the years with the customers' requirements and how the need to be addressed. Airlines breaks down its service into seven areas: Parts trading, distribution, surplus remarketing, initial provisioning and sourcing, inventory leasing, repair management, warehouse and logistics. With the integrated supply chain concept, instead of providing these functions on an individual or piecemeal basis, it is offering a support option that embraces the entire spectrum of its various services.

Simchi levi at al (2000) argues that the airline supply chain can only be possible with integrating both the internal and external suppliers the factors to put into consideration include but are not limited to: partnership emphasis, total aircraft support, pool access and component maintenance in one fully integrated programme, daily support, consignment stocking and integrated consumable management.

### **1.1.3 Domestic Airlines in Kenya**

Domestic airlines in Kenya are 14 in number and include the following : Kenya Airways, 748 Air Services, African Express Airways , Air Kenya Express, Bluebird, CMC Aviation, Delta Connection, East African Safari Air, Fly540, Express Kenya, Aviation, Mombasa Air Safari, ALS-African Leasing Services, Astral aviation, Jet Link Express and Safari Link Aviation . Some of the supply chain challenges that face domestic airlines include: commercial Challenges, planning challenges, technical spares challenges, warehousing and distribution challenges, logistics and network support challenges and catering services.

### **1.2 Problem Statement**

Enhancing supply chain performance has become one of the critical approaches for sustaining competitive advantages for companies (Cai et al., 2009). The airlines are trying to achieve good supply chain performance in order to outperform its competitors. However, the problem the company is faced with is what to do with supply chain inefficiency under its organizational control. A key problem for the airline is the management of customer relationship. Customers demand faster and timelier delivery of services. The company is in the high levels of demand variation of flights that causes the demand changes that are always hard to anticipate (Lummus and Vokurka, 1999). Failure to meet customers demand could result in lost revenues, lower customer satisfaction and potential claims for poor service. In addition, the company finds itself locked-in to its supplier. This lock-in is dominated by the suppliers by imposing restricted terms and

conditions to the company order of spare parts. The order is non-cancellable, non-returnable and cannot be rescheduled to a later date. Another problem is the relative lack of information communication and technology (ICT), both inside and outside the company (Ayers, 2001). Substantial ICT differences between the company and its suppliers can hinder the coordination activities for transactions, the quality of information sharing and information visibility. As a result, supplier response time for a purchase order is increased.

Globally, a number of studies have been done in the area of supply chain performance. Sanchez et al (1990) identified some of the factors that affect supply chain performance as: environmental uncertainty, Information Technology, supply chain relationship and value added processes. A study by wong (2011) on lean supply chain performance measures in the automotive SME's found that cost, quality, flexibility, delivery and reliability were the main supply chain performance measures in the automotive SME's.

Locally, a few studies have been done in the area of supply chain performance. Orukoh (2007) study on SCM practices in Numerical Machining Complex Ltd- a manufacturing company tried to establish SCM practices and experiences in SCM. He established that the company had not institutionalized a collaborative relationship with its supplier base and suggested that effective communication, continuous improvement, competitiveness culture, quality control and review were required as good SCM practices. Mwirigi (2007) went a step further to study green supply chain management practices by manufacturing

firms in Kenya. Ngari (2008) study on SCM practices at the University of Nairobi established that the university is yet fully embrace the SCM practices. Awino (2009) in her study on SCM best practices used in large private manufacturing sector in Kenya found out that these practices are universal, since they compared well with other studies of SCM best practices globally. From these global and local studies, it is evident that very few studies have focused on the supply chain performance of domestic airlines. This study seeks to explore the factors that affect supply chain performance of airlines in Kenya. The study sought to answer the following research question: how does customer supplier relationship, ICT, material flow, corporate culture and performance measurement affect the supply chain performance?

### **1.3 Research Objective**

The objective of the study was to determine the supply chain performance of domestic airlines in Kenya.

### **1.4 Value of the study**

The findings from the study may particularly be useful in providing additional knowledge to existing and future organizations on determine the supply chain performance of domestic airlines in Kenya. This study may also be beneficial to all Domestic Airlines since they would enhance the realization on supply chain performance measures that are majorly employed. With a good Supplier Chain performance, Domestic Airline's management can lower operational expenses with timelier planning for procurement, and



improvement in services. The findings may also provide a useful reference document to stake holders in the supply chain performance and academic institutions in their endeavors to formulate work plan to meet the performance.

Academic may also find the study helpful to identify further areas of research built on the findings of this research. The study may be a source of reference material for future researchers on other related topics; it may also help other academicians who undertake the same topic in their studies. The study may also highlight other important relationships that require further research; this may be in the areas of relationships between supply chain management practices and service delivery

It may help the policy makers within Domestic Airlines to identify crucial areas in their organizations and make appropriate decisions on supply chain performance. Domestic Airlines can also improve margins through better coordination with business partners and manufacturers of parts. This tight connection with trading partners keeps the supply chain aligned with current business strategies and priorities, thereby improving the organization's overall performance and achievement of goals

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The purpose of literature review was to enable the researcher benefit from previous studies done in the related fields. In particular this chapter deals with both theoretical and empirical literature. It also contains the conceptual framework.

Supply chain management is applied by companies across the globe due to its demonstrated results such as delivery time reduction, improved financial performance, greater customer satisfaction, building trust among suppliers, and others. According to D'Amours, Ronnqvist, and Weintraub (2008), companies resort to supply chain practices to improve their performance.

### **2.2 Theories of Supply Chain Management**

The study will utilize the resource based view and systems theory to analyze the factors that affect supplies chain performance in Kenya Airlines.

#### **2.2.1 A Resource Based Theory.**

A basic tenet of the resource based view (RBV) is that top-performing organizations are those that are able to develop, obtain, and/or exploit strategic resources that are rare, valuable, difficult to substitute or imitate and organizationally. Such strategic resources include both tangible resources and capabilities. A resource is an observable but not

necessarily tangible asset that can be valued and traded, however, a capability is not observable and not necessarily tangible, and also cannot be valued, and transferred only as part of its whole entity. Hence, important quality of resources that influences their ability to contribute to competitive advantage of the organizations deals with resource tangibility. RBV view seeks to address the issue of how to manage the supply chain to address real value creation and in so doing provide a sustainable competitive advantage.

### **2.2.2 Systems Theory of Supply Chain performance**

Supply chain management can be viewed as a system using the format of the general systems model. There are four categories of such indicators: productivity, cost control, accuracy, and customer service. Combinations of these indicators are used to provide direction to the supply chain management system and each of its subsystems. Management benefits by viewing the supply chain as a system. By taking a systems view of the supply chain, attention is focused on the elements that are key to good system performance.

## **2.3 Elements of Supply Chain Management**

### **2.3.1 Supply Chain Design**

Supply chain design involves making decision about number of suppliers participating in supply chain, selecting and evaluating suppliers, proximity to suppliers, planned capacities in each facility, definition of contractual terms, and reactions to the possible disagreements between channel members. A properly designed supply chain is a crucial

factor in providing competitive advantage for the firms within that particular supply chain (Meier et al., 2004). The airline supply chain with increase with average passengers air transport (revenue passengers kilometers') has been growing at a minimum of 5 and 6 percent over the last 6 percent over the last 40 years. Thus reliance on firms' suppliers' raw materials, components, subassemblies and even finished products of aircrafts is increasing (Pigels et al, 2005)

### **2.3.2 Supply Chain Information Sharing**

Information sharing is the ability of the firm in sharing knowledge with supply chain partners in an effective and efficient approach. Effective information sharing is considered as one of the most important abilities of supply chain process. Information sharing is one of the most important tools for achieving an integrated and coordinated supply chain .In this study supply chain information sharing is associated with the amount of information shared among supply chain partners in downstream and upstream side of the supply chain and also the information intensity. (Krajewski & Ritzman 2002). A study carried out by Tim (2007) states that through the use of communication tools, such as the web sites, industrial organizations can build value in their supply chain relationships. According to Turner (1993), another key for supply chain management success is the use of planning tools. He also mentions that without the use of information systems, companies cannot handle costs, offer superior customer service and lead in logistics performance.

Turner (1993) indicates that firms cannot effectively manage cost, offer high customer service, and become leaders in supply chain management without the incorporation of top of-the-line information technologies. Li (2001) identified 14 such information technology tools, among them electronic data interchange (EDI), enterprise resource planning (ERP), internet, and extranets. Li grouped these tools into three groups in terms of their primary purpose: communication tools, resource planning tools, and supply chain management tools. Given this classification, two sub factors are considered in this research: communication and planning tools.

### **2.3.3 Flexibility**

Flexibility is associated with firm's ability in changing its production volume and /or capacity; chain performance must be evaluated together with the design considerations. Therefore, the design of the supply chain can affect its performance through influencing information sharing within the supply chain. In other words, supply chain's performance and competitiveness depends on its design which determines its information sharing as well (Krajewski & Ritzman 2002). In the context of supply chain literature flexibility is generally referred to as firm's response to uncertainties. Airlines regardless of whether or not this is true, use the benchmarking process to reduce the quality of product or a service rather than improve the overall quality. The airlines offer less while at the same time increasing the prices (Pigels et al 2005).

### **2.3.4 Delivery**

Prior studies describe delivery as reliability of firm's promises to deliver the product more promptly and on time to their customers in comparison to competitors. However, delivery can be described in two categories as delivery reliability and delivery speed. Therefore, delivery reliability is explained as Firm's capability to fulfill its commitments to delivery and delivery speed is described as firm's ability to rapidly deliver its products to customers faster than competitors. Krajewski & Ritzman (2002) Suggests that the issue about delivery reliability and delivery speed arises only when the time necessary to accumulate the order plus the necessary time to process the order completion exceeds the time of delivery which the customer expects. In this study delivery is associated with diminishing manufacturing lead time controlling lead time of order providing speedy deliveries and meeting delivery dates (Krajewski & Ritzman 2002).

### **2.4 Supply Chain Performance**

Supply chain performance is associated with delivery Cycle times of delivery performance, of the aircrafts parts from manufacturer to the organization. Supply chain performance is a two dimensional definition which consists of effectiveness & efficiency (David *et al.* 2006). Effectiveness is about 'doing the right things' & efficiency is about 'doing things right'. Supply chain effectiveness relates to the preference of the end-consumer & the sole indicator is consumer satisfaction. Conversely, supply chain efficiency relates to the objective performance of processes. Efficiency indicators measure an output level against an input level (Wang & William 2007).

The four (4) indicators used in the supply chain performance such as parts quality, responsiveness, efficiency & flexibility (Beamon 1999; Li 2002; Luning et al. 2002; Gunasekaran, *et al.* 2004; Aramyan *et al.* 2006). Flexibility means the agility of a supply chain in responding to marketplace changes to gain or maintain competitive advantage (SCOR 2006). Another definition is the ability to respond to changes in the environment such as customer demand (volume flexibility). Responsiveness is the velocity at which a supply chain provides services to the customer (SCOR, 2006).

The main benefits from making these changes are improved performance in delivering on time and lower inventory levels. Kenya Airlines can also benefit from better responsiveness to unforeseen events, machine failures, staff absences, delivery delays, the receipt of wrong or faulty goods, missing goods, urgent customer orders and human error.

#### **2.4.1 Factors Influencing Supply Chain Performance**

Chandra and Kumar (2000) describe other factors that affect the supplier chain performance as the following:

##### **2.4.1.1 Relationship with customer and supplier**

The foundation of a business alliance is the relationships between supply chain partners, that is, customer and supplier. Effective partnership is dependent upon an environment grounded in mutual trust, loyalty, positive sum game, fairness in negotiations, goal and

intent revelation, and commitment among partners (Chandra and Kumar, 2000). Spekman et al. (1998) claimed that sustainable business success relates to the strength of the relationship between firm and its supply chain partners. Good partnerships have regarded as strategic decisions in expanding revenue and reducing cost. Therefore, a company's long-term success is primarily dependent on customer satisfaction and the supplier reliability (Chandra and Kumar, 2000; Choy et al., 2003). Various studies (Fearne and Hughes, 1999; Humphreys et al., 2001; Valsamakis and Sprague, 2001; Vereecke and Muylle, 2006; Bartlett et al., 2007; Ounna et al., 2007) have addressed the needs of close collaborative linkages through the entire supply chain. According to Alfred Wong (2002), firms with a high supplier satisfaction and contribution achieve a higher level of customer satisfaction and SCM performance outcomes than those that show weaker supplier value focus.

Companies are inclined to work with different suppliers in different ways. It is important that the relationship with suppliers satisfies their company needs. Hines (2004) mentioned that in commodity products, it is common to find an adversarial relationship mainly based on price between buyer and supplier. This type of relationship with suppliers does not allow for cost reduction in the supply chain. It may be beneficial to network the supplier, to develop partnerships and alliances that will benefit both partners. This could be based on production, personal, and or symbolic networking, that will turn on strategic alliances (Hines, 2004), allowing the information sharing, risk sharing,



obtaining mutual benefits and coordinating plans, permitting the improvement of the supply chain.

#### **2.4.1.2 Information and communication technology (ICT)**

ICT is an enabling strategic vehicle for supply chain performance that facilitates inter- and intra-organizational communications (Boubekri, 2001; Yu et al., 2001; Jonsson and Gunnarsson, 2005). Information technology (IT) is seen as the key ingredient to business survival and information quality (Gunasekaran and Ngai, 2004; Auramo et al., 2005). Dawson (2002) found that a seamless supply chain network demonstrates high productivity and high customer satisfaction, also allow firms to communicate with other partners, with online and timing information to improve visibility to orders. Being able to adopt new IT in SCM is a strategic imperative for all successful businesses (McLaughlin et al., 2003). The right SCM information system can enhance firms 'operational efficiency and operational flexibility (McLaren et al., 2004).

#### **2.4.1.3 Material flow management**

Effective logistics network is the crucial link between market and production. The implementation of material flow management aims at reducing costs of non-value adding efforts and the stocks while simultaneously achieving long-term sustainability (Spath and Baumeister, 2001). Childerhouse et al. (2003) studied the best practices on how to re-engineering a construction supply chain by using material flow control system, providing examples of nine different companies. Therefore, the development of creative solutions

to material flow offers firms a high potential for realising new economic competitive advantages. In this context, logistic capability is expected to result in improved supply chain efficiency. The capabilities include timely materials delivery, global delivery capabilities, shipments accuracy and good knowledge of logistics (Meier et al., 2004).

#### **2.4.1.4 Corporate culture**

Corporate culture is defined as common expectations practices and goals that are shared by the majority of the organisation (Deresky, 2008). Management support has become a critical factor for successful supply chain performance (Van Hoek et al., 2002). Meier et al. (2004) supported the importance of management support and pointed out that leadership management is an important element in the SCM. Leadership management requires shared culture, privacy protection, accountability, high management expertise, good mindset and professional, decisive in decision making, ethical and continuous performance measurement. Mello and Stank (2005) found that firms have inappropriate or inadequate cultural elements (for example, shared assumptions, values and artifacts) are inclined to fail when adopting SCM practices. According to Fawcett et al. (2006), a successful supply chain is driven by organisational commitment and governance. There are four types of managerial support required to achieve high supply chain performance: from upper management support to departmental support, channel support and infrastructural support.

## **2.4.2 Performance measurement**

Gunasekaran et al. (2001) stressed the importance of supply chain performance measurement for a successful SCM. Using customer satisfaction measurement has enabled a business to compete more effectively in its targeted mission. Customer feedback provides a platform for the strategic alignment of organizational resources to meet customer expectations (Swinehart and Smith,2005). In addition, as suggested by Liang et al. (2006), suitable supply chain performance metrics are important for a successful company. Shepherd and Gunter (2006) reviewed numerous literatures of supply chain performance measurement techniques and suggested several issues that further studies should address. The issues include success factors that influence the actual implementation of supply chain performance measurement metrics, the forces shaping their evolution over time and problems related to their continuous improvement.

### **2.4.2.1 Supply chain relationships**

Supply chain relationships play an important role in achieving the firm's goals. The coordination and integration of activities with suppliers and understanding of customer's needs results in greater benefits for companies. According to Fraza (2000), supply chain management is directly related to relationship management, which includes suppliers and customers. Strategic supplier partnerships and customer relationships are main components in the supply chain management practices (Li et al., 2005), leading to information sharing, which is one of the five pillars in achieving a solid supply chain relationship (Lalonde, 1998).Two sub-factors are considered in the model relationship with suppliers and customers.

#### **2.4.2.2 Relationships with suppliers**

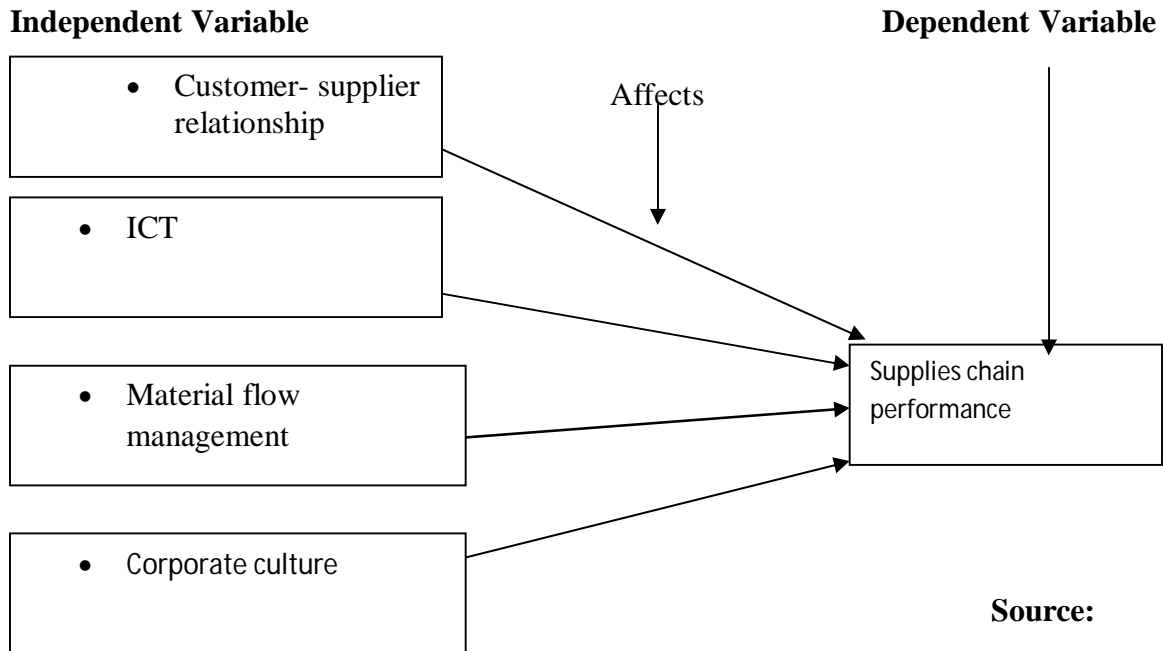
Companies are inclined to work with different suppliers in different ways. It is important that the relationship with suppliers satisfies their company needs. Hines (2004) mentioned that in commodity products, it is common to find an adversarial relationship mainly based on price between buyer and supplier. This type of relationship with suppliers does not allow for cost reduction in the supply chain. It may be beneficial to network the supplier, to develop partnerships and alliances that will benefit both partners. This could be based on production, personal, and or symbolic networking, that will turn on strategic alliances(Hines, 2004), allowing the information sharing, risk sharing, obtaining mutual benefits and coordinating plans, permitting the improvement of the supply chain.

#### **2.4.2.3 Relationships with customers**

The global markets offer a variety of products of different quality and cost. As a result, companies are always competing and trying to reduce costs and improve quality. According to Burgess (1998) and Hoek (1999), customers look for more choices, better service, higher quality, and faster delivery. The relationship with customers has turned a strategic issue for today's companies.

## 2.5 Conceptual Frame Work

The conceptual framework is presented as in below in figure 2.1



Source: Author 2012

The study is out to find out factors that have hindered successful supplies chain performance in Kenya domestic Airlines. This was the dependant variable of the study. This dependent variable was affected by user corporate culture, customer- supplier relationship, ICT, material flow management and performance measurement.

### 2.5.1 Measurement of Variables

Supply chain performance is maximized when the relationship between the firm and its customers and suppliers is well maintained. Key elements of this relationship include the integrity of the process of selection of suppliers, how quickly the firm responds to the complaints of its customers and take corrective measures, involvement of customers in

quality control, Customer comfort, prompt payment of suppliers, real time communication with customers and suppliers among others

ICT is another important component of supply chain performance. Efficiency and promptness can barely be achieved without the use of adequate ICT Infrastructure. Key elements of ICT in this case are the use of modern ICT equipment, a competent and well trained ICT staff, Adoption of new ICT technology.

Material flow management will be measured in term of the following elements: control of pathways for material use and industrial processes, creating of loop-control industrial practices, Dematerialisation of industrial output, systematizing patterns of energy use among others

Corporate culture is the extent to which the employees and management of the company, acknowledge and advance the cause of supply chain performance. It includes such elements as the creation of an independent department dealing with supply chain issues, the training given to the staff in this department, the general knowledge and attitude of the company in as far as supply chain performance is concerned among others.

## **2.6 Empirical Review**

The recent memorable crises and catastrophes and their impact on the supply chains have shaken up the academics and practioners for the supply chain risk management matter (cavinato 2004) . Terrorist acts such as the world Trade center attack from September 11,2001 epidemics like SAR in south- east Asia in 2003, and natural disasters such as

Hurricane Katrina, devastating New Orleans in 2005 are violent reminders that firms and their supply chain operate in an unpredictable and increasing uncertain environment . In consequence of this, there has been a surge in the number of publications on supply chain performance during the last years. According to McCabe (1998), the legacy airline industry is no longer a choice of many investors today because of its economic performance of the past. This is because their revenues cannot meet the high cost of operations thereby leaving a deficit in the budget year after year.

Airlines pursue four competitive priorities as follows: Regularity, quality, cost, and efficiency (Kotler, 2005). Legacy airlines pursue regularity and quality as their main priorities while the low cost airlines prefer to pursue cost and efficiency priorities.

The case study from Higuchi and Trouh ( 2004 ) mentioned above deals with the aspect of new products introduction. Based on the scenario –based simulation model comprising three echelons of this case, it concluded that introduction of new products should be preceded by the thorough quantitative analyses including assessments of various design options and different scenario for customers and consumer behavior .The authors state that determination of product and SC specification is more important than later adjustments ,which might be limited by the short PLC. Based on the example of globally operating FMCG manufacturer Van Hoek and Chapman ( 2006 ) elaborated on alignment between SCM and NPI regarding forecasting and capacity planning in order to avoid disadvantageous out-of stock ( OOS) situations and significant cost of adjustment.

Other empirical studies evaluate the impacts of inventory management on the financial performance of firms Capkon et al (2009) elaborate on the coherence of inventory performance and the financial performance in statistical analysis of US-based manufacturing firms between 1980 and 2005. Across a broad array of manufacturing industries, a strong correlation between both the performance criteria is indicated. The result of this analysis further more shows that compared to raw material and work in progress , finished good inventory shows the strongest link to financial performance.

## **2.7 Summary of Literature Review**

In today's highly unsteady and competitive markets, rivalry among companies is transformed from competing on the basis of own capabilities to competing with the whole supply chain. Airline Supply chain consists of the whole activities associated with products and services movement which are consumable by customers. This movement includes financial and information flow as well as material flow (Gunasekaran and Ngai, 2004; Auramo et al., 2005). In other words, supply chain is a network consisting of downstream and upstream organizations which are involved in different processes and activities that create value for end customers in the form of products or services. Shapiro (2007) points out that SCM decision making must be integrated to the financial decisions about asset investments, profits growth and sales increase as these factors affect shareholders value, which in turn indicates the financial health of the company.



This definition emphasizes on satisfying customer's needs through all the activity levels of supply chain. The performance of the supply chain is affected by different factors.

The previous studies carried out as recorded in the literature review had major gaps existing on supplies chain performance in the airlines. Many studies adopted a general approach and the studies do not recommend how good supplies management practices can be sustained in various airlines considering they differ in size, culture and structure. Thus this study will be geared towards filling this gap by adopting factors affecting supply chain performance of airlines in Kenya. This will give rich information on the factors affecting supplies chain performance. Thus this study intends to focus on the factors affecting success in supply chain performance. The researcher assumes that the findings of the research will apply to all other airlines in the Kenya.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1. Introduction**

This chapter describes the methodology that was adopted in carrying out the study. The first sub-section provides the research design followed by the target population as well as the sampling design and the sample size, Data collection instruments, data collection procedure, location of the study, data analysis and expected output.

### **3.2. Research design**

The research design used for the study was the descriptive design. Descriptive design is most appropriate where the researcher is fairly knowledgeable about the key aspects of a phenomenon but has little knowledge, if any, regarding their characteristics, nature or details (Ritchie, 2003).

### **3.3. Study Population and Sampling**

The target population of the study is composed of the supply chain personnel working at the two busiest airports (Jomo Kenyatta and Wilson Airport Respectively). Due to the small number of the population of study; all of the 14 airlines will be studied.

### **3.4 Data Collection**

The primary data was obtained after obtaining authority letter from the university permitting the researcher to collect data (Appendix II). The researcher used the questionnaire to gather data from respondents. The questionnaire was semi-structured; consisting of both open and close ended questions to help the researcher get specific information while non-structured helped the respondent to express his or her opinion. The drop-and- pick- later method was adopted for the study. This method was appropriate

as it enabled the respondent to dedicate enough time to fill the questionnaire. The questionnaire was piloted before the data collection. It was pretested in pilot survey using 5 airlines employees who were not considered for the main research. Pre-testing of the questionnaires was directed towards ascertaining validity and reliability. The respondents were assured that the information obtained would be treated for research purpose and no other purpose (Kombo and Tromp, 2006).

### **3.5 Data Analysis and Presentation**

The data collected was analysed by use of Statistical Package for Social Science (SPSS). Quantitative Data was analysed with the help of electronic spread sheet –SPSS program which has analysis tools. SPSS has been instrumental in establishing the data associations which eventually has led to conclusions on the objectives of the study. Quantitative data was presented by use of statistical techniques which include, correlation and regression analysis. The regression model was as follows:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

**Where:**

y = Supplies chain performance

$\beta_0$  = Constant Term

$\beta_1$  = Beta coefficients

$X_1$  = Customer- supplier relationship

$X_2$  = ICT

$X_3$  = Material flow management

$X_4$  = Corporate culture

## **CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION**

### **4.1 Introduction**

This chapter provides a summary of the data analysis, results of the study and the discussion of the results of the study. The chapter is organized as follows: section 4.2 describes the data presentation, analysis and the results of the study and section 4.3 discusses the implication of findings of the study with regard to the objective of the study which was to establish is to determine the supply chain performance of domestic airlines in Kenya.

### **4.2 Basic information**

The study sought to establish the information on the respondents employed in the study with length of period of work at the airline, kind of work task carried out in the organization, highest level of education attained, skills possessed in the area of supplies management and the position held in the organization in which the respondents were. These bio data points at the respondents' appropriateness in answering the questions.

When asked the duration of time they had worked for the airline, 7% of all respondents reported to have worked for less than 1 year, 21% had worked for a period of between 1 to 5 years, 36% between 6 to 10 years and the remaining 36% had worked for more than 10 years. 43% of all the respondents reported that their work task at their organization was processing while 36% were doing ordering and 21% of the respondents were involved in acquisition at their respective work stations.

As pertaining to their highest level of education attained, 57% of the respondents had undergraduate degree education, 29% had masters degree level while 14% had reached up to diploma level in education. 50% of the respondents had attained a diploma in supplies management, 29% had a degree in supplies management while 21% had a certificate in supplies management. When asked what position they held in the organization, 57% of the respondents were supervisors, 29% were managers while 14% were officers in their organizations.

The respondents were asked to indicate the extent in which their air line perform in Supplies chain, 72% of the respondents indicated to a moderate extent, 21% said to a large extent while only 7% indicated to a little extent.

#### 4.2.1 Reliability and Validity of data

**Table 4.1: Reliability Statistics**

Measurement Scale	Number of Items	Cronbach's Alpha ( $\alpha$ )
Supplies chain performance	5	0.731
Customer- supplier relationship	5	0.757
ICT	5	0.751
Material flow management	5	0.730
Corporate culture	5	0.737

Source: Reseacher (2013)

Reliability is a fundamental issue in any measurement scale. Scale reliability is considered as the proportion of variance attributed to the true score of the latent construct. Considering the small number of items used to measure each of the 5 values and their necessary heterogeneity, even reliabilities of 0.5 are reasonable. It is usually measured by internal consistency reliability that indicates the homogeneity of items comprising a measurement scale. Internal consistency gives the extent at which items in a model are inter-correlated. Thus, high inter-item correlations explain that the items of a scale have a strong relationship to the latent construct and are possibly measuring the same thing. Usually, the internal consistency of a measurement scale is assessed by using Cronbach's coefficient alpha. It is generally recommended that if a measurement scale having a Cronbach's coefficient above 0.70 is acceptable as an internally consistent scale so that further analysis can be possible. Thus measuring Supplies chain performance against Customer- supplier relationship, ICT, Material flow management and corporate culture was reliable and valid since alpha value is above 0.731, the study instruments yielded fairly reliable data for this research.

#### **4.3 Factors affecting the supply chain performance**

The respondents were issued with various statements regarding the factors affecting the supply chain performance in their organization. The respondents were asked to indicate the extent to which they agreed with the given statements on a likert scale of 1 to 5 with 1 being 'strongly disagree', 2 being 'disagree', 3 being 'neither agree nor disagree', 4 being 'agree' and 5 being 'strongly agree'. Mean and standard deviation were calculated and are shown below in Tables 4.2, 4.3, 4.4 and 4.5. The factors affecting supply chain

performance were categorised into Customer-suppliers relationship, Information Communication Technology, Material flow processes and Corporate Culture.

### 4.3.2 Customer-Supplier Relationship

**Table 4.1: Statements on Customer-Supplier Relationship**

<b>Statements on Customer-Supplier Relationship</b>	<b>Mean</b>	<b>Std. Deviation</b>
Suppliers are paid Promptly	4.2741	.5241
The company responds to complaints from suppliers and customers promptly	4.0132	.1442
Communication with customers and suppliers is on real time	3.7821	.7686
There is a clear process of selecting suppliers that is credible	3.2170	.2966
The company has an established relationship department that ensures the relationship between suppliers and customers is smooth	3.1820	.5902
Enough is done to ensure customer comfort	2.9378	.2341
Customers are involved in quality control mechanisms	2.3408	.6898

Source: Reseacher (2013)

The respondents were asked whether the suppliers were paid promptly where most agreed that they were paid promptly (mean of 4.2741). When asked if company responded to complaints from suppliers and customers promptly, most respondents agreed (mean=4.0132). they were also to indicate if communication with customers and suppliers was on real time and it was found out that most respondents agreed to it (mean =3.7821). Moreover, the respondents were asked if there was a clear process of selecting suppliers that was credible or if the company has an established relationship department that ensured the relationship between suppliers and customers was smooth or if enough

was done to ensure customer comfort, most respondents could neither agree nor disagree on these 3 statements. Finally, they were asked if customers were involved in quality control mechanisms and most respondents indicated that they disagreed with that statement (mean=2.3408).

From the findings above it was found that there was a reliable relationship between the airlines with customers and suppliers as reported by respondents and as indicated by Chandra and Kumar (2000), a company's long-term success is primarily dependent on customer satisfaction and the supplier reliability.

### 4.3.3 Information Communication Technology

**Table 4.3 Statements on Information Communication Technology**

<b>Statements on Information Communication Technology</b>	<b>Mean</b>	<b>Std. Deviation</b>
The company has a functional ICT department	4.6170	.2126
The company has incorporated ICT in its strategic plans	4.1672	.7342
The Company's ICT Department is well staffed	3.8408	.5508
The company has up to date ICT Infrastructure	3.7378	.4341
The Company's ICT staff undergo regular training on new technological development	3.4741	.6241

Source: Reseacher (2013)



The respondents were asked if their organizations had a functional ICT department where most strongly agreed there were (mean=4.6170). When asked whether the company had incorporated ICT in its strategic plans, if the company's ICT Department was well staffed and if the company had an up to date ICT Infrastructure, most respondents agreed to all these statements. However, the respondents could not agree or disagree when they were asked if the Company's ICT staff undergo regular training on new technological development (mean=3.4741).

The findings in the study pointed out that ICT was in use in many airlines with adequate staff and an updated infrastructure, however it was not clear if the staff underwent regular training on new technological development. As highlighted by McLaughlin et al., (2003) being able to adopt new IT in SCM is a strategic imperative for all successful businesses.

#### 4.3.4 Material Flow Processes

**Table 4.2: Material Flow Processes**

<b>Statements on Material Flow Processes</b>	<b>Mean</b>	<b>Std. Deviation</b>
Key operational processes involved in stock flow, movement, control and management	4.2678	.0641
The company controls pathways for material use and industrial processes	4.0356	.1162
The company Dematerializes output	3.9408	.9458
The company follows loop-control industrial practices	3.3227	.5642

Source: Reseacher (2013)

When asked whether the Company controlled pathways for material use and industrial processes or if the Company dematerialized output and if there were key operational processes involved in stock flow, movement, control and management, most respondents agreed to all these statements (with a mean of 4). However most of the respondents could neither agree nor disagree when asked whether the company followed loop-control industrial practices (mean=3.3227).

It was found out that the material flow processes in the airlines was smooth since there was control of key operational processes involved in stock flow, movement, control and management. The implementation of material flow management aims at reducing costs of non-value adding efforts and the stocks while simultaneously achieving long-term sustainability (Spath and Baumeister,2001).

#### 4.3.5 Corporate Culture

**Table 4.3: Statements regarding Corporate Culture**

<b>Statements regarding Corporate Culture</b>	<b>N</b>	<b>Mean</b>	<b>Std. Deviation</b>
Management has a supply chain quality policy	14	4.0224	.2126
Management understands and appreciates the importance of supply chain performance	14	3.9227	.7342
All members of staff are trained on smooth supply chain procedures	14	3.8468	.5508
The company reviews supply chain procedures regularly	14	3.6278	.5941

Source: Reseacher (2013)

With regards to the corporate culture, four questions were asked: whether the management had a supply chain quality policy, if the management understood and appreciated the importance of supply chain performance, if all members of staff were trained on smooth supply chain procedures, and if the company reviewed supply chain procedures regularly, and to all these questions most respondents (with a mean of 4) agreed to them.

As put by Van Hoek et al., (2002) management support has become a critical factor for successful supply chain performance Meier et al. (2004) supported the importance of management support and pointed out that leadership management is an important element in the SCM. The findings in this study indicated the management in the airline supported supply chain performance.

#### **4.4 Organization's values and identity that may affect performance in supplies chain**

Most of the respondents indicated that the Company environment which related to the company's relationship with suppliers and clients affects performance in supplies chain, also other values and identities such as air traveling rates, aggressive outsourcing bids, information about aviation logistics, environmental uncertainty, modern procurement techniques; planning tools and communication tools were mentioned to affect performance in supplies chain

#### **4.5 Hindrances of successful performance in supplies chain in organizations**

When asked about hindrances that affected successful performance in supplies chain in their organizations, most respondents indicated the following: Monopoly in some airlines; poor planning methods; ineffective communication methods; ineffective use of information technology which allows suppliers, manufacturers, distributors, retailers, and customers to reduce lead time, paperwork, and other unnecessary activities; and inadequate spacious warehouses in airline industry.

#### **4.6 Factors that affect supply chain performance in the organization**

The following factors were reported to affect supply chain performance in the organizations: the unexpected changes of customer, supplier, competitor, and technology; the increase of outsourcing activities in the industry; lack of enough government support especially in importing raw materials or products from overseas or using domestic materials; Social uncertainties such as religion, environment, language, cultural issues, limitations of communication and also the technology; political uncertainties; Monopoly and competition among local airlines.

#### **4.7 Challenges experienced in the supplies chain performance process**

The respondents indicated that main challenges that face local Kenyan airlines were the dominance of few competitors in the market, retaliation from competitors when an airline changes strategy, low cost services from competitors; price wars with competitors, strong brand name of competitors and wider branch networks of competitors. The least felt challenges were loss of customers to other airlines; competitors offering a wider range of

services, the services offered by competitors being unique, loss of staff to competitors, challenges from the major customers and high costs of customers switching from a competitor to your airlines.

#### 4.8 Correlation analysis

The Pearson product-moment correlation coefficient (or Pearson correlation coefficient for short) is a measure of the strength of a linear association between two variables and is denoted by  $r$ . Basically, a Pearson product-moment correlation attempts to draw a line of best fit through the data of two variables, and the Pearson correlation coefficient was conducted to examine the relationship between variables,  $r$ , indicates how far away all these data points are to this line of best fit (how well the data points fit this new model/line of best fit).

**Table 4.4: Pearson Correlation coefficients Matrix**

Pearson Correlation	Supplies chain performance	Customer-supplier relationship	ICT	Material flow management	Corporate culture
Supplies chain performance	1.000	.733*	.712*	.654*	.534*
Customer- supplier relationship	.733*	1.000	.536*	.752*	.467*
ICT	.712*	.536*	1.000	.118*	.247*
Material flow management	.654*	.752*	.118*	1.000	.247*
Corporate culture	.534*	.467*	.247*	.247*	1.000

Note: \*Correlation significant at the level 0.01 (two-tailed)

The Pearson correlation coefficient,  $r$ , can take a range of values from +1 to -1. A value of 0 indicates that there is no association between the two variables. As cited in Wong and Hiew (2005) the correlation coefficient value ( $r$ ) range from 0.10 to 0.29 is considered weak, from 0.30 to 0.49 is considered medium and from 0.50 to 1.0 is considered strong. However, according to Field (2005), correlation coefficient should not go beyond 0.8 to avoid multicollinearity. Since the highest correlation coefficient is (0.752) being indicated between Material flow management and Customer- supplier relationship which is less than 0.8, there is no multicollinearity problem in this research. From the table below all the predictor variables were shown to have a positive association between them; with the strongest (0.752) being indicated between Material flow management and Customer- supplier relationship, while the weakest (0.118) between Material flow management and ICT.

#### **4.7 Regression Analysis**

The regression analysis is concerned with the distribution of the average value of one random variable as the other variables which need not be random are allowed to take different values. A multivariate regression model was applied. The regression model specifically connects the average values of  $y$  for various values of the  $x$ -variables. A regression equation is in no way a mathematical linking two variables but serves as a pointer to questions to be answered. Basically, the regression analysis is used in two distinct ways; (1) as a means of considering data taking into account any other relevant variables by adjustment of the random variable; and (2) to generate mathematical forms

to be used to predict the random variable from the other (independent) variables. The regression model was as follows:

$$y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon$$

**Where:**

y = Supplies chain performance

$\beta_0$  = Constant Term

$\beta_1$  = Beta coefficients

$X_1$  = Customer- supplier relationship

$X_2$  = ICT

$X_3$  = Material flow management

$X_4$  = Corporate culture

**Table 4.5: Strength of the model**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.993	.985	.983	1.55342

Source: Reseacher (2013)

Analysis in table 4.7 shows that the coefficient of determination (the percentage variation in the dependent variable being explained by the changes in the independent variables) R<sup>2</sup> equals 0.985 that is, Corporate culture, ICT, Material flow management, Customer-supplier relationship leaving only 1.5 percent unexplained. The P- value of 0.000 (Less than 0.05) implies that the model of Supplies chain performance is significant at the 5 percent significance.

**Table 4.6: Analysis of variance**

<b>Model</b>		<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
1	Regression	93.144	4	23.286	79.730	.000 <sup>a</sup>
	Residual	53.739	10	.292		
	Total	146.884	14			

a. Predictors: (Constant), Customer- supplier relationship, ICT, Material flow management and Corporate culture

b. Dependent Variable: Supplies chain performance

ANOVA findings (P- value of 0.00) in table 4.8 show that there is correlation between the predictor's variables (Corporate culture, ICT, Material flow management, Customer-supplier relationship) and response variable (Supplies chain performance). An F ratio is calculated which represents the variance between the groups, divided by the variance within the groups. A large F ratio indicates that there is more variability between the groups (caused by the independent variable) than there is within each group, referred to as the error term (Pallat, 2005). A significant F test indicates that we can reject the null hypothesis which states that the population means are equal. The P value is 0.000 which is less than 0.005 significance level.

The study found that Corporate culture, ICT, Material flow management, Customer-supplier relationship have significant influence on Supplies chain performance since Customer- supplier relationship  $\beta = .297$ ,  $t = 3.798$ ,  $p < .000^*$ ;  $\beta = .188$ ,  $t = 3.290$ ,



$p < .001^*$ : Material flow management  $\beta = .013$   $t = .215$   $p < .001^*$ : Corporate culture  $\beta = .406$ ,  $t = 5.445$ ,  $p < .000^*$ .

**Table 4.7: Coefficients of regression equation**

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	T	Sig.
1 (Constant)	.240	.258		.930	.354
Customer- supplier relationship	.294	.077	.297	3.798	.000*
ICT	.230	.070	.188	3.290	.001*
Material flow management	.013	.062	.013	.215	.001*
Corporate culture	.421	.077	.406	5.445	.000*

a. Dependent Variable: Supplies chain performance

**\* Significant value when Sig Value is less than 0.005**

The established multiple linear regression equation becomes:

$$Y = 0.240 + 0.294X_1 + 0.230X_2 + 0.013X_3 + 0.421X_4$$

**Where**

Constant = 0.240, shows that if Corporate culture, ICT, Material flow management, Customer- supplier relationship all rated as zero, Supplies chain performance would be 0.240

$X_1 = 0.294$ , shows that one unit change in Customer- supplier relationship results in 0.294 units increase in Supplies chain performance

$X_2 = 0.230$ , shows that one unit change in ICT results in 0.230 units increase in Supplies chain performance

$X_3 = 0.013$ , shows that one unit change in Material flow management results in 0.013 units increase in Supplies chain performance

$X_4 = 0.421$ , shows that one unit change in Corporate culture results in 0.421 units increase in Supplies chain performance.

## CHAPTER FIVE

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### **5.1 Introduction**

This chapter presents a summary of the study findings discussion, conclusions and recommendations. The findings are summarized in line with the objectives of the study which was to determine the supply chain performance of domestic airlines in Kenya.

#### **5.2 Summary of Findings**

The study sought to determine the supply chain performance of domestic airlines in Kenya. Among the respondents involved in the study, 72% of them had worked for the airline for more than 5 years, 21% for a period of 1-5 years while 7% had worked for less than a year in the airline. 43% of all the respondents reported that their work task at their organization was processing while 36% were doing ordering and 21% of the respondents were involved in acquisition at their respective work stations. All the respondents indicated they had acquired skills in supply management by indicating they had done certificate, diploma or degree in supplies management. Of all the respondents, 57% of the respondents were supervisors, 29% were managers while 14% were officers in their organizations.

The study sought to establish the Customer-Supplier Relationship in various airline companies in Kenya, from the findings in the study, it was evident that most respondents agreed that suppliers were paid promptly on time, the company responded to complaints from suppliers and customers promptly and that communication with customers and suppliers was on real time. However it could not be established whether there was a clear process of selecting suppliers that was credible; the company has an established

relationship department that ensured the relationship between suppliers and customers was smooth and whether enough was done to ensure customer comfort in the airline industries. Meanwhile most of the respondents disagreed that customers were involved in quality control mechanisms.

On the part of the use of Information Communication Technology in the organizations, most of the respondents agreed that their company had a functional ICT department, had incorporated ICT its strategic plans and ICT Department was well staffed and that the company had an up to date ICT Infrastructure however, it was not established if the Company's ICT staff undergo regular training on new technological development as most respondents could neither agree nor disagree. On material flow processes in local airlines companies, the companies controlled pathways for material use and industrial processes; the Companies dematerialized output and that there are key operational processes involved in stock flow, movement, control and management. Despite this, it was not clear whether the company followed loop-control industrial practices as most of the respondents indicated they could neither agree nor disagree to that statement.

The study also targeted to determine how the corporate culture of airline industry impacts on the supply chain performance of the organizations; it was found out that the management of most airlines had a supply chain quality policy; the management understood and appreciated the importance of supply chain performance; all members of staff were trained on smooth supply chain procedures and that the company reviewed supply chain procedures regularly.

### **5.3 Conclusion**

On the basis of the findings, the study concludes that indeed most of the local airlines in Kenya have an established Customer-Supplier Relationship as indicated by most of the respondents. The study also concludes that the local airlines in Kenya use Information Communication Technology as most companies has a functional ICT department, incorporated ICT in its strategic plans, company's ICT Departments are well staffed and that the companies have an up to date ICT Infrastructure. The study also observes that the airlines corporate culture is conducive for the supply chain performance since management of most airlines has a supply chain quality policy; management understand and appreciate the importance of supply chain performance and all members of staff are trained on smooth supply chain procedures. The Organization's values and identity that affected performance in supplies chain are the Company environment, air traveling rates, aggressive outsourcing bids, information about aviation logistics, modern procurement techniques, planning tools and communication tools. Hindrances to supply chain performance includes monopoly in some airlines; poor planning methods; ineffective communication methods, competition and ineffective use of information technology.

Finally the study concludes that there are several factors that affect supply chain performance in the organizations such as the unexpected changes of customer, supplier, competitor, and technology; the increase of outsourcing activities in the industry; lack of enough government support especially in importing raw materials or products from overseas or using domestic materials; Social uncertainties; political uncertainties; Monopoly and competition among local airlines.

#### **5.4 Recommendations**

The study recommends that there should be a clear process of selecting suppliers that was credible, have an established relationship department that ensures the relationship between suppliers and customers is smooth and enough should be done to ensure customer comfort in the airline industries and customers should be involved in quality control mechanisms. Company's ICT staff should undergo regular training on new technological development that are up to date and the use of information technology should be maximized. The companies should also follow loop-control industrial practices.

The study also recommends that those Organization's values and identity that affects performance in supplies chain should be improved to ensure efficiency, those hindrances to supply chain performance as reported by respondents should be controlled in an effective manner such as improving planning tools, communication methods. If these factors among others are improved, performance in supply chain will be enhanced. Finally the study concludes that major stakeholders in airline industry should control the level of fierce competition inorder to control the major challenges in the local airline industry.

In view of the conclusions from this study, those domestic airlines do have a smooth supply chain; the study recommends that for domestic airlines to achieve a smooth supply chain, there is need for them to improve on the way they manage customer and supplier

relationships, they should improve on their corporate culture and ensure smooth flow of materials.

### **5.5 Limitations**

Every study encounters several limitations due to a number of factors. Limitation of the study has to do with process-related factors that may have an impact on the result of the study. The process related factors encountered included the willingness of the respondents to give the required information. This study was subject to both time and resource constraints.

### **5.6 Suggestions for Further Research**

This study sought to determine the supply chain relationship of domestic airlines in Kenya. Supply chain performance was measured by the extent to which these airlines embraced certain key aspects of supply chain that include management of customer supplier relationship, use of ICT, corporate culture and smooth material flow. The researcher acknowledges that there are many more aspects of the supply chain in the airline industry which would equally form the basis of measuring supply chain performance, however, due to time and resource constraints, the researcher concentrated on only the above aspects. The study recommends that the performance of domestic airlines be examined on the basis of other additional aspects other than the ones that have been included in this study.

## REFERENCES

- Altekar, R. V (2005). Supply chain management: concepts and cases. New Delhi:Prentice Hall of India.
- Ayers, J. B (2001). Handbook of supply chain management. United States of America: CRC Press
- Barney, J. (1986). "Organizational Culture: Can It Be a Source of Sustained Competitive Advantage?" *Academy of Management Review*, 11: 656-665.
- Barney, J. (1999). "Firm Resources and Sustained Competitive Advantage," *Journal of Management*, 17(1): 99-120
- Beamon, B.M. (1999). "Measuring supply chain performance" *International of Operations and Production Management*. 3: 275-292.
- Bensaou, M. (1999). Portfolios of buyer-supplier relationships. *Sloan Management Review*, 40(4): 35 - 44.
- Boubekri, N. (2001). Technology enablers for supply chain management. *Journal of Manufacturing, Technology and Management*. 12(6): 394 - 399.
- Cai J., Liu X., Xiao, Z., & Liu, J. (2009). Improving supply chain performance management: a systematic approach to analyzing iterative KPI accomplishment. *Proquest Decis. Support Syst.*, 46(2): 512.
- Cavinato, Joseph (2004 ): Supply Chain Logistics risk: from the back room to the board room *International Journal of physical Distribution & Logistics Management* , Vol 34 , No 5 ,PP 383-387.



- Chan C.K., & Lee, H.W (2005). Successful strategies in supply chain management. United States of America: Idea Group Inc.
- Chan, F. (2003). Performance measurement in a supply chain. *International Journal of Advance Manufacturing Technology*, 21: 534-548.
- Chandra C.& Kumar, S. (2000). Supply chain management in theory and practice: a passing fad or a fundamental change? *Ind. Manag. Data Syst.*, 100(3): 100 - 113.
- Childerhouse P., Lewis J., Naim M.,& Towill, D. R (2003). Re-engineering a construction supply chain: a material flow control approach. *Supply Chain Management*. 8(4): 395-406.
- Chin, K.S., Tumala V.M., Leung, J.P., & Tang, X .(2004). A study on supply chain management practices: the Hong Kong manufacturing perspective. *Int. J. Phys. Disturb. Log. Management*. 34(6): 505 - 524.
- Chopra, S. & Meindl, P. (2007). "Supply chain management", Prentice-Hall publication.
- Deresky, H. (2008). *International management: managing across borders and cultures* (6th ed.). Upper Saddle River, N.J.: Pearson Education, Inc.
- Dierickx, I.& Cool, K(1989). "Asset Stock Accumulation and Sustainability of Competitive Advantage," *Management Science*, 35: 1504-1511.
- Ghemawat, P. (1986). "Wal-Mart Stores' Discount Operations," Harvard Business School case no. 90:-387-018
- Grant, R. M. & Baden-Fuller, C. (1991). A knowledge-based theory of inter-firm collaboration. *Academy of Management Journal*.

- Gunasekaran, A. and E. W. T. Ngai, E. W.(2004). Information systems in supply chain integration and management. *European Journal of Operational Research*, 159 (2): 269-295.
- Hartmann, E., & Grahl, A. D. (2011). "The Flexibility of Logistics Service Providers and Its Impact on Customer Loyalty: An Empirical Study," *Journal of Supply Chain Management*, (47(3): 63-85.
- Issac, S. & Michael, M. (1995). *Handbook in research and evaluation or education and the behavioral science*. San Diego: Edit Publisher.
- Iyer, A., Seshadri, S.& Vasher, R. (2009). *Toyota Supply Chain Management: A Strategic Approach to the Principle of Toyota's Renowned System*, McGraw Hill Education, New York.
- Krajewski, L & Ritzman, L 2002, 'Operations Management: Strategy and Analysis', 6th edn, Prentice-Hall, New York, NY.
- Lambert, D. M, & Cooper, M.C (2000). Issues in supply chain management. *Ind. Mark. Manag.*, 29: 65 - 83.
- Lippman, S., & Rumelt, R.(1982). "Uncertain Imitability: An Analysis of Interfirm Differences in Efficiency under Competition," *Bell Journal of Economics*, 13:418-438.
- Lummusand, R.R.& Vokurka, R.J (1999). Defining supply chain management: a historical perspective and practical guidelines. *Ind. Manag. Data Syst.*, 99(1): 11 17.

- McLaren, T.S., Head, M.M., & Yuan, Y (2004). Supply chain management information systems capabilities: an exploratory study of electronics manufacturers. Springerlink.Com, 2(2): 207-222.
- McLaughlin, J., Motwani, J., Madan, M. S. & Gunasekaran, A. (2003). Using information technology to improve downstream supply chain operations: a case study. Bus. Proc. Manag. J., 9(1): 69-80.
- Meier, R.L., Williams, M.R., & Singley, R.B (2004). Supply chain management: strategic factors from the buyers' perspective. J. Ind. Technol.
- Mello, J.E,& Stank, T.P (2005). Linking firm culture and orientation to supply chain success Int. J. Phys. Distrib. Log. Manag., 35(8): 542-554.
- Narasimhan, R., & Jayaram, J. (1998). Causal linkage in supply chain management: An exploratory study of north American manufacturing firms. Decision Sciences, 29(3):579–605.
- Naylor, J. B., Naim, M. M., & Berry, D. (1999). Leagility: Integrating the lean and agile paradigms in the total supply chain. International Journal of Production Economics, 62(1): 107–118.
- Nurmilaakso, J. M. (2008). Business frameworks in supply chain integration. International Journal of Production Economics, 113(2):721-733.
- Polanyi, M. (1962). Personal Knowledge: Towards a Post Critical Philosophy, Routledge & Kegan Paul, London.
- Ritchie, J. & Lewis, J. (2003). Qualitative Research Practice: A Guide for Social Science Students and Researchers. Sage Publications, London.

- Rousel, D.N (2005). Does corporate culture contribute to performance? American Int. College J. Bus.
- Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2000). Designing and managing the supply chain: Concepts, strategies, and cases. New York: McGraw-Hill.
- Spath, D. & Baumeister, M.(2001). Synchronisation of material flow and assembly in hybrid and modular systems. *Assembly Automat.*, 21(2): 152-157.
- Tromp, L.A. (2006) proposal and thesis writing. Pauline publications: Makuyu
- Van Weele A. J (2005). Purchasing & supply chain management: analysis, strategy, planning and practice (4th ed.). Australia: Thompson International.
- Van, H. R., Chatham R, & Wilding, R. (2002). Managers in supply chain management, the critical dimension. *Supply Chain Manag.* 7(3): 119-125.
- Wang, M., Liu, J., Wang, H., Cheung, W. K., & Xie, X. (2008). On demand e-supply chain integration: A multi-agent constraint-based approach. *Expert Systems with Applications*, 34:2683–2692.
- Weber J U Bramsemann, C Heike and B Hirsk ( 2004) . Value –based management : concepts –implementation statement from practice.
- Weintraub B. 2008. A resource-based view of the firm. *Strategic Management Journal* 5(2): 171–180.
- Winker ,H and B Kaluza ,( 2006) . Integrated performance and risk management in supply chains . How to build reliable collaboration in logistics ,ed W, Kersten and T Blecker 19-36 , Berlin Eric smitch Verlag.

## **APPENDICES**

### **Appendix I: Letter of Introduction**

University Of Nairobi,  
Department of Business Administration,  
P.O. Box 30197,  
Nairobi.

Dear Sir/Madam,

**RE: REQUEST TO CARRY OUT RESEARCH PROJECT IN YOUR ORGANISATION.**

I am a post graduate student at University of Nairobi. I am currently undertaking a Masters of Business Administration research in the supply chain performance of Domestic Airlines. Kindly assist me by completing the questionnaire as freely and honestly as possible. Any information given will be used for academic purpose only and it will be treated in strict confidence.

Thank you in advance.

Yours faithfully,

**Reuben Ebei**

## Appendix II: Questionnaire

This research is meant for academic purpose. You are kindly requested to provide answers to these questions as honestly and precisely as possible. Responses to these questions will be treated as confidential. Please tick where appropriate or fill in the required information on the spaces provided.

### PART A

Please tick as appropriate

1. How long has the have you worked for the Airline?

Less than I year ( )

1-5 years ( )

6-10 years ( )

More than 10 years ( )

2. What kind of work task do you carry out in the organization

Ordering ( )

Processing ( )

Acquisition ( )

Others specify.....

3. What is your highest level of your education

Masters Degree ( )

Undergraduate Degree ( )

Diploma ( )

Other .....

4. What skills do you possess in the area of supplies management?

Certificate in supplies management ( )

Diploma in supplies management ( )

Degree in supplies management ( )

Masters Degree in supplies management ( )

Others specify.....

5. What positions do hold in the organization?

Manager ( )

Supervisor ( )

Officer ( )

Others ( )

**Part B: Introduction to section B**

8. To what extent does your air line performance in Supplies chain? Use the following

scale:

No extent..... ( )

Little extent..... ( )

Moderate extent ..... ( )

Large extent..... ( )

Very large extent.... ( )

**The following are factors affecting the supply chain performance. Please indicate on a scale of 1-5 (where 1 is strongly disagree; 2 moderately disagree; 3 Agree ; 4 Moderately agree; 5 strongly agree)**

<b>A</b>	<b>Customer-Supplier Relationship</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	There is a clear process of selecting suppliers that is credible					
2	The company responds to complaints from suppliers and customers promptly					
3	Customers are involved in quality control mechanisms					
4	Suppliers are paid Promptly					
5	Enough is done to ensure customer comfort					
6	Communication with customers and suppliers is on real time					
7	The company has an established relationship department that ensures the relationship between suppliers and customers is smooth					
<b>B</b>	<b>Information Communication Technology</b>					
1	The company has a function ICT department					
2	The company has incorporated ICT in its strategic plans					
3	The Company's ICT Department is well staffed					



4	The Company's ICT staff undergo regular training on new technological development					
5	The company has up to date ICT Infrastructure					
<b>C</b>	<b>Material Flow Processes</b>					
1	The company controls pathways for material use and industrial processes					
2	The company follows loop-control industrial practices					
3	The company Dematerializes output					
4	Key operational processes involved in stock flow, movement, control and management.					
<b>D</b>	<b>Corporate Culture</b>					
1	Management has a supply chain quality policy					
2	Management understands and appreciates the importance of supply chain performance					
3	All members of staff are trained on smooth supply chain procedures					
4	The company reviews supply chain procedures regularly					

**Part C -To be filled by all the respondents.**

Please fill the space provided.

E. What are some of your organization's values and identity that may affect performance in supplies chain in the institution...

.....

F. What hinders successful performance in supplies chain in the organization?

.....

.....

G. Kindly indicate the factors that affect supply chain performance in the organization.....

.....

.....

H. What are the challenges experienced in the supplies chain performance process?

.....

.....

.....

.....

**THANK YOU.**