2016

An assessment of airline disruptions on passenger perceptions and expectations of service quality – a case of passengers at Jomo Kenyatta International Airport

Mugai, Faith Marigu
School of Management and Commerce
Strathmore University

AN ASSESSMENT OF AIRLINE DISRUPTIONS ON PASSENGER PERCEPTIONS AND EXPECTATIONS OF SERVICE QUALITY: A CASE OF PASSENGERS AT JOMO KENYATTA INTERNATIONAL AIRPORT

FAITH MARIGU MUGAI

MASTER OF COMMERCE

JUNE, 2016

AN ASSESSMENT OF AIRLINE DISRUPTIONS ON PASSENGER PERCEPTIONS AND EXPECTATIONS OF SERVICE QUALITY: A CASE OF PASSENGERS AT JOMO KENYATTA INTERNATIONAL AIRPORT

FAITH MARIGU MUGAI

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF MASTER OF COMMERCE (MCOM) OF STRATHMORE UNIVERSITY

SCHOOL OF MANAGEMENT AND COMMERCE
STRATHMORE UNIVERSITY
NAIROBI, KENYA

JUNE 2016

Declaration

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

© No part of this thesis may be reproduced without the permission of the author and Strathmore University

Student's name: Faith M. Mugai

Student's signature: ……………

Date: 22nd June 2016

Approval

The thesis of Faith M. Mugai was reviewed and approved by the following:

Dr. Hellen N. Otieno

Research Director, School of Management and Commerce

Strathmore University

Dr. David Wang'ombe

Dean, School of Management and Commerce

Strathmore University

Prof. Ruth Kiraka

Dean, School of Graduate Studies

Strathmore University

Abstract

The purpose of this study was to analyse the influence of airline disruptions on passengers' expectations and perception of service quality for the airlines operating at JKIA. The respondents of this study were passengers and management of airlines. This study sampled a total of 196 passengers and 10 airlines. However, 106 passengers and 8 representatives of management responded. This study employed quantitative methods to analyse the effect of airline disruptions on passengers' expectations and perception of service quality. Percentages, mean and standard deviations were computed which aided in analysis of data collected. Qualitative data collected was coded so as to be analysed using factor analysis. Majority of the passengers (81%) believe that delays are the major type of disruptions they faced.

Causes of airline disruptions experienced at JKIA in the past one year included maintenance problems, crew problems, extreme weather conditions, fire outbreak and runway closures. Seventy five percent of the management of the airlines ranked the highest the following ways of responding to disruptions: use of state of the art forecasting systems; rescheduling delayed operations among others. This study also established that the following strategies were found be commonly employed by the airlines to mitigate the effects of disruptions: use of state of the art forecasting systems; use of appropriate system redundancy during disruptions; training employees on how to effectively handle disruptions; pre-treating runways overnight to eliminate closures among others.

The study found out that airline disruptions affect passengers' perception and expectations of service quality. Passengers' expectations of service quality namely: Responsiveness, Empathy and Assurance were established to be affected by airline disruptions with an average mean factor loadings of 0.836, 0.825 and 0.814 respectively. For perception of service quality, three components were found to be affected by airline disruptions. These components included Assurance, Empathy and Reliability with average factor loading values of 0.944, 0.899 and 0.609 respectively.

Table of Contents

List of Figures

List of Tables

List of Abbreviations

JKIA: Jomo Kenyatta International Airport

KQ: Kenya Airways

KLM: Royal Dutch Airlines

BTS   Bureau of Transport Statistics

UAE: United Arab Emirates

KAA: Kenya Airport Authority

SPSS: Statistical Package for Social Sciences

NAS: National Airport Services

Acknowledgements

I would like to acknowledge all those who supported me throughout my studies and towards this thesis development who include friends, colleagues, and relatives who have contributed in countless ways. While it may be impossible to mention everyone by name I wish them to know that am truly grateful. Dr. Hellen Otieno my supervisor is worth a special mention as without her input, advice, sacrifices on her time and her patience this would not have come to be.

CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

Air transportation is crucial for global business development and tourism enrichment. Aviation is one of the most important services to offer both significant social and economic benefits. By serving tourism and trade, it contributes to economic growth and provides jobs and increased tax revenues to the governments (Montgomery, Lipshitz and Brehmer, 2011). According to Ball, Barnhart, Dresner, Hansen, Neels and Odoni (2010), airlines operate as per set timetable. A timetable is typically optimized from the revenue management point of view and all airline resources are allocated to the timetable with the least possible cost (Ibid, 2010). In an ideal world, when nothing prevents an airline to operate the schedule exactly as planned, the airline will maximize its profit. However, there are plenty of internal and external events, which can disrupt smooth schedule execution (Ball, et al. 2010). Airline disruptions are categorized into two: delays and cancellation.

Service quality is an enduring construct that encompasses quality performance in all activities undertaken by management and employees. According to Berry and Parasuraman (2011) "The proof of service quality is in its flawless performance." Parasuraman et al. (2011) propose that passengers' perceptions of service quality are a function of the difference between service expected and passenger perceptions of the actual service delivered. The service expectations are normative expectations indicative of passengers' expectations for what should happen during the service encounter. While airlines are logging record passenger-miles and enjoying record revenue, passenger satisfaction with airline service is at an all-time low due to effects of disruptions on service quality (Cunningham et al., 2012). Service quality is characterised as both intrinsic and extrinsic (Mels, Boshoff and Nel, 1997). This is similar to the technical and functional theory of service quality which states that technical quality refers to the result or the outcome of the service, while functional quality refers to the process or the way the service has been delivered (Grönroos, 1984).

Guitteye (2010) reported that in West African airline industry, most airlines operating in Africa were not passenger focused. Guitteye (2010) further noted that disruptions had little effect on service quality a phenomenon attributed to lack of consumer enlightenment, low expectation and the lack of competition due to government bureaucracy and support. Guitteye (2010) concluded that there was no effect of disruption on service quality for airlines operating in Africa though he

noted that profitability was impacted negatively due to increased costs. This is in contrast to a research by Shavell (2010) which established that airline disruptions produce a lower service quality and higher costs since disruptions requires more block time, more aircrafts, more crew, more fuel, more stands and more equipment thus always pushing costs up. At the same time, Baluch (2012) showed disruptions had a negative effect on service quality.

Maliga (2010) in his case study on the effect of industrial action and disruptions on KQ performance established that the disruption had a huge impact on the company's financial performance with share prices plummeting by over 40% in three days. He also established that passenger satisfaction had reduced from 80% to 38% during the period. Employee satisfaction also dropped by 52%. In another study on KQ by Bosire (2011) on the effect of power outages, it was established that prolonged power outages increased airline costs by up to 40% on the affected days. These disruptions also had a significant effect on passenger satisfaction with reductions of 48% that was mainly driven by poor passenger service. Bosire (2011) concluded that airline disruptions had a negative effect on airline financial performance and passenger satisfaction.

Omolo (2013) carried out a case study on the effect of the 7 August 2013 JKIA fire break out on KQ operating costs and passenger satisfaction. He established that the complete shutdown of East Africa's busiest airport resulted into un-parallel disruptions in the Kenyan airspace. Within the first four days the national carrier Kenya Airways whose hub had been immensely impacted had lost US $ 4 million in revenue as a result of the fire. The non-financial effect was also high with passenger satisfaction declining by approximately 45% driven mostly by poor passenger handling. He concluded that airline disruption had a positive effect on airline costs and negative effect on passenger satisfaction.

It is worth noting that the studies carried out in Kenya (Omollo, 2013; Bosire, 2011 and Maliga, 2010) focused on KQ only as an airline operating at JKIA. This study extended beyond KQ and focused on the top ten airlines operating at JKIA. The top ten airlines include: Kenya Airways and KLM; Fly540; Emirates Airlines; Ethiopian Airlines; British Airways; South African Airways; Qatar Airways; Turkish Airlines; Etihad Airways; and Rwandair (Muhoho, 2012).

1.2. Problem Statement

Airline schedules are usually subject to disruptions due to adverse weather conditions, aircraft breakdown, crew delays and security breaches among others (Stockman, 2012). Disruptions can either be internal or external. Due to the increased air traffic, flight disruptions are taking a greater

toll than ever before, both on airlines and passengers (Barber and Lyon, 2012). JKIA has not been left out as it has experienced disruptions too. According to the Kenya Civil aviation 16% of the flights operated within JKIA were disrupted in the year 2012. This is 5% above industry standards. The increase in disruption was attributed to the increased operation of airlines within JKIA and adverse weather (Muhoho 2012). Baluch (2012) conducted a research on causes of airline disruptions in Africa. He concluded that the main causes of disruptions were: industrial action; power failure; and runway closure.

Although the negative impact of disruptions on financial performance has been researched on (Maliga, 2010; Shavell, 2010; Omolo, 2013), the effect of these disruptions on passengers' perceptions and expectations of service quality has received little attention. There are limited empirical studies conducted on airline disruptions and passengers' perceptions and expectations in the Kenyan context. In addition, the studies that exist for example Baluch (2012), Shavell (2010) and Guitteye (2010) show conflicting findings on the effect of flight disruptions on passengers' perceptions and expectations of service quality. Baluch (2012) shows disruptions had a negative effect on service quality whereas Guitteye (2010) shows disruptions had no effect on service quality.

Furthermore, it is worthwhile noting that the research findings noted above cannot be generalized to all airlines operating in different geographic regions. This is due to varying infrastructure, weather conditions, government regulation, competition, passenger expectations and perceptions and social cultural differences which have effect on passengers' expectations and perceptions (Cheung and Lee, 2012). Further, studies by Omollo (2013), Bosire (2011) and Maliga (2010) focused on effects of disruptions on passenger satisfaction on Kenya Airways alone. This study sought to fill this gap by examining the effects of disruptions on passengers' perceptions and expectations of service quality by airlines operating from JKIA. In this study, service quality was taken to be both intrinsic and extrinsic as measured by SERQUAL and disruptions to be both external and internal.

1.3. Objectives of the Study

The purpose of the study was to examine the influence of airline disruptions on passengers' perceptions and expectations of service quality for airlines operating from Jomo Kenyatta International Airport.

1.3.1. Specific Objectives

The following were the specific objectives:

1. To identify the type and causes of disruptions experienced by airlines and passengers at JKIA.
2. To analyze the strategies employed by the airlines in responding to the disruptions they experienced and to examine how airlines are working with authorities at JKIA to mitigate these disruptions.
3. To examine how the airline disruptions affect passengers' perceptions and expectations of service quality of airlines operating at JKIA.
4. To examine how airline strategies can enhance passengers' perceptions and expectations of service quality.

1.4. Research Questions

The study was guided by the following research questions:

1. What types and causes of disruptions do airlines and passengers experience at JKIA?
2. What strategies do airlines employ in responding to the disruptions they experience, and how do airlines work with the authorities at JKIA to mitigate these disruptions?
3. How do disruptions affect passengers' perceptions and expectations of service quality for airlines at JKIA?
4. How do airline strategies enhance passengers' perceptions and expectations of service quality?

1.5. Significance of the study

A review of the literature has revealed that, to date, minimal research has been conducted in the world and indeed in Africa on the influence of airline disruptions on service quality. Hence the study would be of great significance to the following parties:

Airline managers will gain insight into consumers' perception on how airlines can improve their service quality so as to meet the consumers' needs. This will lead to development of more effective solutions and strategies to manage disruptions. Thus passenger's loyalty can be redeemed which in turn will lead to increased profitability. The study findings will also contribute to the global knowledge of aviation in terms of highlighting the effect of airline disruptions on service quality more so in developing countries. Knowledge will be gained in causes and frequency of disruptions in developing countries and also on effective strategies to address airline disruptions.

The aviation policy makers (Africa Civil Authorities, Africa Airport Authorities and Kenya Airport Authority) stand to benefit from the research findings since they will be able to identify the internal causes of disruptions and how management of airlines are mitigating them and hence be able to come up with appropriate policies to guide in mitigating those disruptions. In addition, the employees of airlines will benefit from the study's recommendations as they will have better processes and procedures in place so as to manage disruption more effectively hence ensuring consistent service quality.

The airline passengers stand to benefit once their suggestions are incorporated into various strategies to be implemented by the aviation industry as this improves the service quality. Finally, the suppliers of the aviation industry will also benefit from the study since they will have an insight on how airlines are mitigating disruptions they experience hence being in a good position to supply appropriate goods and services that the airlines require in mitigating those disruptions. This can be adopted on how they manage their supplies so as to ensure they support airlines in managing service quality. The suppliers include: National Airport services (NAS), ground handlers, security services and fuel providers.

1.6. Scope of the study

The study sought to establish the influence of airline disruptions on service quality. In order to achieve this, the researcher sought to identify the causes of airline disruptions at Jomo Kenyatta International airport, to examine the effect of airline disruptions on service quality and to find out how airlines are responding to disruptions. Only the top ten commercial airlines operating at JKIA were studied. This is because these airlines have extensive networks hence are more susceptible to disruptions (Maliga, 2010). The study was carried out at Jomo Kenyatta International Airport. The study was targeted to airline passengers and employees.

CHAPTER TWO

LITERATURE REVIEW

2.1. Introduction

In this chapter literature has been reviewed under the following sections: theories on service quality, airlines operating at JKIA, types of airline disruptions, causes of airline disruptions, effects of disruptions on service quality, how airlines are responding to disruptions, conceptual framework and the operationalization of variables.

2.2. Theories on Service Quality

Defining and measuring quality in services might be difficult due to the intangible nature of the service offering. Despite considerable work undertaken in the area of service quality, there is no consensus as yet with regards to which measurement scales are robust enough for measuring and comparing service quality (Jain and Gupta, 2004, 2010). The service literature proposes a number of models, the most popular being SERVQUAL and SERVPERF. Numerous studies have tried to assess the superiority of the two scales with no conclusive evidence as to which one is a better scale. However, over the years, SERVQUAL has emerged as the most popular standardised measure of service quality (Hoffman, and Woods, 2011).

2.2.1. Application of SERVEQUAL Theory to airline industry

Many of the researches on service quality have been carried out within the framework of widely accepted service quality model (SERVQUAL instrument) developed by extensive research of Parasuraman et al. (1998, 2010). Since then, many researchers have used this 22-item scale to study service quality in different sectors of the services industry. In the airline industry, the study on service quality using SERQUAL model has been undertaken for example by Yavas, Zeithaml, Berry and Parasuraman (2010); Bahia and Nantel (2010); Lassar, Manolis and Winsor (2012); Duncan and Elliott, (2012); Jabnoun and Al-Tamimi, (2011); and Arasli, Abdeghany and Ekollu (2012).

In a study of service quality in the airline sector in Turkey, Yavas, Zeithaml, Berry and Parasuraman (2011), focused on the relationship between service quality on consumer satisfaction, complaint behaviour and commitment. Their study found that overall service quality was a significant determinant passenger satisfaction, complaint behaviour and commitment. On the other hand, Lassar, Manolis and Winsor (2010) studied service quality using two major service quality constructs, SERVQUAL and Technical/Functional Quality models to the private

airline industry. They found that Technical/Functional Quality-based model of service quality is better suited compared to SERVQUAL-based model.

Duncan and Elliot (2012) however explored the relationship between passenger service quality and financial performance in Australian airlines. They found that there was significant relationship between financial performance and passenger service quality scores. Jabnoun and Al-Tamimi (2012) examined service quality at UAE Airlines using SERVQUAL model and included thirty items in the five dimensions of SERVQUAL. When they tested the developed instrument for reliability and validity, they found that the instrument had only three dimensions.

Finally, Arasli et al. (2012) studied service quality perceptions of Greek airline passengers using SERVQUAL model. They however, extend the study by looking at the relationship between service quality, passenger satisfaction and positive word of mouth. They found that the expectations of airline passengers were not met where the largest gap was obtained in the responsiveness-empathy dimension. In addition, the reliability items had the highest effect on passenger satisfaction, which in turn had a statistically significant impact on the positive word of mouth. Contrary to the large number of studies of service quality in the airline industry in the west, studies are still considered scarce in Developing countries. In South Africa, for example, studies on service quality were conducted by Sudin, Rajendran and Kamalanabhan (2010) and Izah and Wan Zulqurnain (2011). These two studies were conducted on budget airlines and adopted the CARTER model as suggested by Othman and Owen (2010; 2011). Further research on effect of airline disruption on service quality in African airports is rare.

2.2.2. SERVPERF Model

The SERVPERF Model was carved out of SERVQUAL by Cronin and Taylor in 1992. SERVPERF measures service quality by using the perceptions of passengers.

Cronin and Taylor argued that only perception was sufficient for measuring service quality and therefore expectations should not be included as suggested by SERVQUAL (Baumann et al, 2010). Illustrating that service quality is a form of consumer attitude. They argued that SERVPERF was an enhanced means of measuring the service quality construct. Their study was later replicated and findings suggest that little if any theoretical or empirical evidence supports the relevance of the E-P= quality gap as the basis for measuring service quality.

2.3. Empirical review

This section discusses the airlines operating from JKIA, types and causes of airline disruptions, how airlines are working with authorities to mitigate on disruptions and strategies airlines employ in mitigating the disruptions. This section also presents the effects of airline disruptions on perceptions and expectations of passengers on service quality.

2.3.1. Airlines industry

Rupp and Holmes (2012) posit that the use of commercial aviation has grown significantly over the last few decades, estimated to be more than seventy-fold since the first jet airliner flew in 1949. They attribute the rapid growth to a number of factors: disposable income, globalisation, bilateral agreements, air safety and airline competition leading to reduced fares. Simons (2010) states that rising disposable income and quality of life in many parts of the world have encouraged more people in these areas to travel and explore opportunities overseas. Secondly, deregulation of aviation laws, and bilateral and open-sky agreements between governments have opened new markets for airlines, which make travel easier and cheaper. Third, demand is increasing because of growing confidence in aviation as a safe mode of travel. Fourth, increased efficiency and growing competition have reduced world airfares and the cost of travel. Finally, globalization has increased the average distance travelled, as people do business in countries which now have improved political and social environments. Montgomery et al, (2011) adds that the impact of these factors is expected to continue, however, at different levels in different parts of the world. According to Muhoho (2012), airline operations at JKIA are dominated by Kenya airways (KQ) as shown in table 2.1 below.

Table 2.1: Top ten airlines operating at JKIA

Airline	Passengers (millions)	Destinations	Alliance
Kenya Airways & KLM	2.87	134	Sky Team
Fly 540	0.37	13	
Emirates	0.28	162	
Ethiopian Airlines	0.21	89	Star Alliance
British Airways	0.18	120	
South African Airways	0.17	87	Star Alliance
Qatar	0.13	56	
Turkish	0.12	80	
Etihad	0.07	41	
Rwandair	0.03	24	

Source: Muhoho (2012)

JKIA is the hub of KQ which uplifts 65% of all passengers at the airport. Maliga (2010) adds that the liberalisation of the Kenyan airspace has seen increased competition. Lack of political will,

lack of cooperation and alliance among African airlines and the desperate survival reactions of some loss making flag carriers have militated against the rapid implementation of the Yamoussoukro Decision (Guitteye, 2012). The Yamoussoukro Decision established the arrangement among State Parties for the gradual liberalization of scheduled and non-scheduled intra-Africa air transport services.

Kenya Airways, Ethiopian Airlines, and South African Airways, are the few International African carriers recording encouraging results in JKIA (Oketunji, 2013). Akhuimen (2013) adds that the few and recent timid co-operations between African airlines like South African Airways taking equity in Air Tanzania and Kenya Airways in Precision air, coupled with the membership of South African Airways and Ethiopian Airlines and Kenya Airways to the Star and Sky Team alliances respectively, are good developments for JKIA as it means more passengers will flow through the airport. Passenger and cargo traffic are projected to continue to grow in JKIA as air transport become more liberalised in Africa, the economy keeps growing and nations become more stable politically (Muhoho, 2012).

2.3.2. Types of Airline Disruptions

Most commercial airlines operate according to a published schedule (time table). A schedule is typically optimized from the revenue management point of view and all airline resources should be allocated to the schedule with the least possible cost (Ball, et al., 2010). In an ideal world, when nothing prevents an airline to operate the schedule exactly as planned, the airline will maximize its profit. In the real world, however, there are plenty of internal and external events, which can disrupt smooth schedule execution (Ball, et al. 2010).The types of disruptions include flight delays and flight cancellations as discussed below.

2.3.2.1. Flight Delays

A flight delay is noted when an airline flight takes off and/or lands in the time not scheduled. This usually happens when the flight takes off/land in a time later than scheduled. The Federal for Aviation Administration (2012) considers a flight to be delayed when it is 15 minutes later than its scheduled time. According to the Department of Transportation's Bureau of Transport Statistics in July 2013 30 percent of the flights in the U.S. domestic market was delayed, an increase from 20 percent in July 2011. Flight delays adversely affect all passengers scheduled to travel on that day (Tyler, 2013). In Kenya, flight delays have occurred at JKIA as Omolo (2011) noted that KQ experiences 51% delays that are reactionary. JKIA as a whole has faced numerous

disruptions ranging from power outages, fire break out, and industrial unrest among others (Baluch, 2012).

Delays are the most visible evidence of the effects of disruptions on the airlines service quality. Generally, each of these results in aircraft and crews being out of position relative to planned itineraries (Teodorovic, 2010). Suchman (2013) adds that passengers are inconvenienced as arrivals are delayed and scheduled connections missed. As a result, an airline may become responsible for the cost of alternative transportation, lodging, food and, if the delay is sufficiently long, a cash payment to compensate the passenger for any inconvenience, so as to recover on service quality.

Airlines report the causes of delays in two broad categories: Internal and External Factors (Shavell, 2010). The internal causes are cancellations or delays due to circumstances within the airlines' control and they include maintenance problems, crew problems, aircraft cleaning, and baggage loading, and fuelling issues (Shavell, 2010). External factors on the other hand are disruptions attributed to external factors, such as environmental calamities, and are often associated with random events or events over which the firm is not expected to be able to exert much control. These include extreme weather conditions, National Aviation Systems and security issues.

A flight delay is a when an airline flight takes off and/or lands later than its scheduled time. The Federal for aviation Administration (2012) considers a flight to be delayed when it is 15 minutes later than its scheduled time. Delays occur because airport capacity (i.e., runways and gates) is a scarce resource and, at key airports, airlines are scheduling more flights than that capacity can support. As a result, more and more flights are delayed. Solutions for ameliorating an increasingly untenable situation are needed, especially as more airports are forecast to be capacity-constrained in the near future. Airlines' private incentives to schedule flights to serve more destinations and offer passengers more choice in departure times do not take into account the delays that their many flights impose upon other airlines because airlines do not face the proper price incentives to use scarce airport capacity efficiently. Consequently, airlines schedule too many flights, generating delays that ripple across the highly integrated airline network and adversely affect all passengers (Tyler, 2013).

The rising number of delays as researched by Chopra and Meindl (2011) can easily be confirmed by viewing delay statistics collected by the Department of Transportation's Bureau of Transport Statistics (BTS). In July 2013, for example, the BTS reports that 30 percent of the flights in the

U.S. domestic market arrived late, up from 20 percent in July 2011. Performance at the most capacity-constrained airports is significantly worse: at JF Kennedy Airport, for example, 43 percent of the arrivals were late in July 2007, while at LaGuardia, 40 percent were late (Tyler, 2013). This rise in delays, not surprisingly, correlates with a significant increase in the number of flights across the world (Taylor, 2010).

Currently, no efficient constraint is imposed on the number of flights that can be scheduled at a given time at an airport where scheduled flights would exceed the maximum number the FAA would allow for safety reasons. In fact, at heavily demanded airports, either no mechanism is being used to ration demand or the rationing mechanism has allocated too many landings and take-offs (Chopra and Meindl, 2011).

2.3.2.2. Flight Cancelations

A cancellation occurs when the airline does not operate the flight at all for a certain reason. A cancellation is a more stressful and uncertain experience for the passenger. If a flight early in the day is delayed, passengers would normally be able to fly once the problem is resolved. If the flight was cancelled instead, passengers on the original flight would only be able to travel if and when seats were available on later flights or on other airlines (Shavell, 2010). Tyler (2013), found that 12% flights of flights were cancelled in 2012, a 14% increase compared to 2010 figures. A research conducted by Maliga (2010) at JKIA found that 14% of flights were cancelled.

2.3.3. Causes of airline disruptions

Airlines depend on their ability to meet the requirements of their published schedules. However, various events inhibit their ability to always satisfy their schedules. Airlines report the causes of delays in two broad categories: Internal and External Factors (Shavell, 2010). The internal causes are cancellations or delays due to circumstances within the airlines' control and they include maintenance, crew problems, aircraft cleaning, and baggage loading, and fuelling issues (Shavell, 2010). External factors on the other hand are disruptions attributed to external factors, such as environmental calamities, and are often associated with random events or events over which the firm is not expected to be able to exert much control. These include extreme weather conditions, National Aviation Systems and security issues.

2.3.4. Service Quality

Quality itself has been a subject of intense debate in the literature. Kasper (2011) defines quality as "the extent to which the service, the service process and the organization can satisfy the expectations of the user". Understanding service quality must involve acknowledging the characteristics of service which are intangibility, heterogeneity and inseparability, in that way, service quality would be easily measured (Parasuraman et al., 1985, 2010). Passenger's expectation serves as a foundation for evaluating service quality because, quality is high when performance exceeds expectation and quality is low when performance does not meet their expectation (Gronroos, 2010). Expectation is viewed in service quality literature as desires or wants of consumer that is what they feel a service provider should offer rather than would offer (Parasuraman et al., 1988, 2010). Perceived service is the outcome of the consumer's view of the service dimensions, which are both technical and functional in nature (Gronroos, 2010).

There are various dimensions of service quality in the airline industry. Parasuraman, Zeithaml and Berry (1998, 2010, 2011) identified five service dimensions that are capable of discriminating well across respondents having differing quality perceptions about firms in several categories, and these are: tangibles which encompass physical facilities, equipment, and appearance of personnel; reliability which implies ability to perform the promised service dependably and accurately; responsiveness which means the willingness to help passengers and provide prompt services; assurance which is the knowledge and courtesy of employees and their ability to inspire trust and confidence; and finally empathy implying caring, individualised attention the firm provides its passengers.

Service quality is an enduring construct that encompasses quality performance in all activities undertaken by management and employees. According to Berry and Parasuraman (2011) "The proof of service quality is in its flawless performance." Parasuraman et al. (2011) propose that passenger perceptions of service quality are a function of the difference between service expected and passenger perceptions of the actual service delivered. The service expectations are normative expectations indicative of passenger expectations for what should happen during the service encounter. While airlines are logging record passenger-miles and enjoying record revenue, passenger satisfaction with airline service is at an all-time low due to effects of disruptions on service quality (Cunningham et al., 2012).

2.3.5. Effects of disruptions on service quality

The number of air travellers and the volume of air cargo are expected to continue to grow, increasing the pressure on all the contributors to the air transportation service to take advantage of opportunities and efficiently manage their service (Tyler, 2013). The fundamentals of airline operations are no different from those of any other firm operating in an open market: control costs to earn a profit within the price structure imposed by the market place. On the cost side of the equation, each firm faces two categories of cost: fixed and variable. Fixed costs are those that managers cannot change in time to affect the outcome of events. On the other hand, management is able to control variable costs to shape events to their liking (Shavell, 2010). Yu and Qi (2011) noted that manufacturing firms and some service providers, when confronted with disruptive events, are able to react to preserve the uninterrupted flow of product and service to their passengers. The passengers of airlines, on the other hand, are either trying to board or are already on the airplanes when flights are cancelled, delayed or diverted.

Jiang (2010) posits that inherent uncertainty in airline operations makes delays and disruptions inevitable. Because the airline system operates as a closely interconnected network, it is subject to 'network effects', that is, a disruption in one place can quickly propagate to multiple other parts of the network. Air traffic delays have received much attention from researchers and policymakers during recent years (Yan and Yang, 2010). Air traffic delays are the most common source of complaints by airline passengers.

Shavell (2010) further adds that severe disruptions in the National Airspace System (NAS) significantly affect the economics of airline operations. Because hubs only function effectively when passengers are able to make scheduled connections and are often located at congested airports, the effects of disruptions are magnified when hubs are affected. These effects become most visible when the disruptions occur during peak arrivals or departures (Westrum, 2011).
The increasing numbers of commercial airline companies have put more pressure on the management to continually seek profits, reduce cost, and increase revenues while at the same time ensuring good service quality (Sherry, Wang and Donohue, 2011). The airline industry has seen an increase in existing infrastructure hence resulting to airline disruptions that influence airline performance and service quality.

Lassar et al (2010), posits that during 2007 several long delays at various airports (both on the terminal and on the tarmac) attracted the attention of consumer groups and the U.S. Congress who were concerned about their effects on service quality. In addition, record lows in on-time

flight departures and arrivals had drawn the ire of passengers and caused them to push for greater regulation of the airline industry in order to improve service levels (Cunningham et al., 2012). Disruptions have multiple causes, many of which are systemic but passengers view the airline as the chief culprit (Bitner, 2010). Bitner adds that, one challenge faced by the airlines is how to avoid letting events they cannot control erode schedule integrity, skyrocket operational costs, and ultimately hurt service quality.

Disruptions are problematic because the airlines can control only a few factors in the web of problems to gain a competitive advantage. Moreover, even in these areas, the ability to manoeuvre can be limited. Regulations largely determine crew availability, airport hours, flying routes, and maintenance constraints. This leaves only a few areas where airlines can improve schedule integrity and passenger experience to distinguish themselves from their competitors and maintain the loyalty of long-time passengers. One of the areas where airlines can be most responsive is detecting problems early and preventing their escalation and disruption of the schedule (Ashford and Wright, 2012).

On-time performance of airlines schedule is a key factor in maintaining current passenger satisfaction and attracting new ones. However, flight schedules are often subjected to irregularity. Due to the tight connection among airlines resources, these delays could dramatically propagate over time and space unless the proper recovery actions are taken (Mueller, et al., 2012). Lassar et al., (2010), add that maintaining schedule integrity, in particular, is a competitive advantage that resonates with passengers more than many other benefits. In addition to the passenger satisfaction component, dealing with unscheduled disruptions is expensive.

Flight delays are obviously frustrating to air travellers and costly to airlines. Airline companies are the most important passengers of the airport (Ashford and Wright, 2012). A well-known phase 'the airplane earns only when flying' holds true. On-time performance of airlines schedule is key factor in maintaining current passenger satisfaction and attracting new ones. Flight schedule of the airport is the key to planning and executing airlines' operation (Wu, 2010). With each schedule, the airline defines its daily operations and commits its resources to satisfying its passengers' air travel needs. Therefore, one of the basic requirements all airlines place on the ground handling is to ensure high efficiency of handling activities so as to avoid delays and hence improve on service quality (Mueller, et al., 2011). Addressing service levels during disruptions could improve passenger loyalty and firm's profitability (Chidambaram, 2012).

2.3.6. How Airlines respond to disruptions

Today's major airlines and airports are highly complex with increasingly significant limitations on capacity. The ability to make the most effective use of that capacity is a daily operational priority. When an event disrupts capacity, airlines resilience is exposed (Muller, Abdi and Hanlon, 2011). Airlines respond to disruptions in the following ways prevention, management of disruptions and recovery as discussed below.

2.3.6.1.Prevention of disruptions

It is indeed possible to prevent, or at the very least, mitigate, the extent of disruption from an event. The researcher is not suggesting that the event itself can always be prevented (as much as airport and airline management would certainly like that power), but rather that the negative implications can be minimized. If an event is accurately forecasted, an airline can prepare accordingly – positioning employees and equipment in the right place at the right time to ensure operational continuity (Tyler, 2010).

Prevention is achieved through the use of state of the art forecasting systems such as SABRE airline management systems. However there is need for collaboration between the airlines and other stakeholders in order to achieve prevention. In the case of a well-forecast snowfall, overnight pre-treating of runways may eliminate the need for closures for snow clearing. And airlines and their ground handlers can plan ahead for de-icing requirements as well and advice passengers before they leave their homes through short messages, emails and phone calls (Tyler, 2010). This has been implemented by major airlines like Emirates, Kenya Airways and British Airways. Further passengers who arrive early at the airport are given access to the lounge.

Similarly, a scheduled industrial action can be planned for and mitigated. Of course an inaccurate forecast or an event that is not forecast at all presents the greatest challenge. But with adequate preparation, including collaborative planning, robust contingency protocols, a clear understanding of the potential system weaknesses, appropriate system redundancy and employees training, significant operational disruption from an event can be limited if not prevented altogether (Sieber, 2011).

2.3.6.2.Managing disruptions

Once a disruptive event is underway, the airport, together with its stakeholders, should be able to effectively manage it. Incident or crisis response protocols should be executed, contingency plans need to be followed, additional employees may need to be deployed and all participants must

adhere to clear roles and responsibilities. Perhaps most important is the required collaboration to manage and address the situation. Major airports are complex webs of operational and non-operational stakeholders. It is rare that a disruption of any significance can be managed by just one stakeholder alone. Indeed, isolated and uncoordinated responses by airports and airlines are likely to make situations worse (Mueller, et al., 2011).

Airports, airlines and other stakeholders must be prepared to work together to manage the event and maximize operational continuity. Planning tools which allow real time trade-off analysis can help decision-makers understand the "least bad" course of action (e.g. proactively cancelling a flight when disruption is threatened can avoid stranding passengers from a flight that might otherwise be cancelled during an event) (Shavell, 2010). Airlines have senior managers and captains apologies to passengers during disruption. There is consistent update of the delay plus passengers have access to lounge facilities as practiced by Singapore airline (Tyler, 2013).

2.3.6.3. Recovery from disruptions

So much effort and attention is given to managing events, that the third component of operational resilience is often overlooked. However just as there must be contingency plans for how to manage a disruptive event, there should also be clear plans for how to transition the airport and airline community back to business-as-usual. Response protocols should be gradually stood down and robust communications and situational awareness should ensure key operational issues have indeed all been addressed.

The trade-off planning tools can help to identify the best sequence for rescheduling delayed operations. And then becomes an invaluable opportunity that is often mishandled: the 'wash-up' or 'hot wash' as many call it – the consolidation of what happened, how well the airline and airport community responded and the lessons learned. Truly resilient airports and airlines take full advantage of the opportunity to learn from experience, refine ways of working and be better prepared for the next event (Tyler, 2010).

When recovering the schedule, several objectives are considered by the airline. For example, the airline must minimize the deviation from the planned schedule by minimizing flight delays, cancellations, and crew swapping. In addition, it must not only adhere to the maintenance requirements of different aircraft at the right time, but also follow the regulations that govern the work rules of the crew on different flights. Furthermore, the airline must comply with air traffic control regulations and programs that manage traffic in the airspace and at airports. Last but not least, it must minimize the total cost of recovery by avoiding expensive decisions such as flight

cancellations, calling additional crew, and passenger rebooking on other airlines (Hoffman and Woods, 2011).

In Service recovery, monetary compensation is given by such airlines like British Airways. More important a personal apology from the Captain and senior managers, lounge access, cards offering delayed travellers a discount on future flights, hotel bookings and transfer, and rebooking of the next flight. In extreme disruptive events, to survive in business airlines may be forced to cut schedules, reduce fares; lay off employees, and cut salaries and benefits. For example, in the US markets following the September 11, 2001 (9/11) terrorist attack, airlines flying to or within the US experienced major disruptions that impacted on passenger demand, revenue, average fare, and average yield (revenue per seat mile). At that time, most domestic airlines considered significant actions such as cutting capacity, lowering fares, and discharging employees to respond to these market changes (Barber and Lyon, 2010).

Other proposed solutions to the airline delay problem seem to have a common theme: eliminate the problem by expanding the airports and improving the air traffic control systems to, in effect, eliminate the capacity scarcity. For example, current popular proposals include the spending of billions of dollars to add runways and expand other physical capacity (such as gates) at airports to accommodate more concurrent flight operations, and to improve air traffic control systems to allow for more intensive usage of existing capacity (by, e.g., shortening the distance between aircraft in airspace). Those methods of dealing with the problem are, as their price tags indicate, costly, providing a prime illustration of the economic axiom, "There is no such thing as a free lunch." Moreover, plans to expand capacity will not — under even the most optimistic projections — ameliorate the problem of delays in anything but the very long term (Ashford, 2010).

2.4. Conceptual Framework

The SERVEQUAL Model analysis of quality, developed by Zeithaml, Bitner, and Parasuraman (1985,1988,1991,2010), will be utilised in order to analyse the effect of airline disruptions on service quality at JKIA, and to suggest remedial measures and strategies for preventing or minimising the specific effects, and revamping the various strategic elements already in place. The researcher proposed to adopt SERQUAL Model in line with several researchers who previously used it in the service industry while studying service quality in various fields. Researchers who have previously adopted the model to the airline industry include Yavas et al. (2010), Bahia and Nantel (2010); Lassar et al., (2012); Duncan and Elliott, (2012); Jabnoun and Al-Tamimi, (2011); and Arasli et al., (2012).

SERVQUAL represents service quality as the discrepancy between a passenger's expectations for a service offering and the passenger's perceptions of the service received, requiring respondents to answer questions about both their expectations and their perceptions Parasuraman et al., (1988). The use of perceived as opposed to actual service received makes the SERVQUAL measure an attitude measure that is related to, but not the same as, satisfaction (Parasuraman et. al., 1988). The difference between expectations and perceptions is called the gap which is the determinant of passengers' perception of service quality as shown on figure 2.1 below.

Independent variables   **Dependent variables**

Disruptions	**Perceptions & Expectations**
• Nature	• Reliability • Responsiveness • Assurance • Empathy • Tangibles
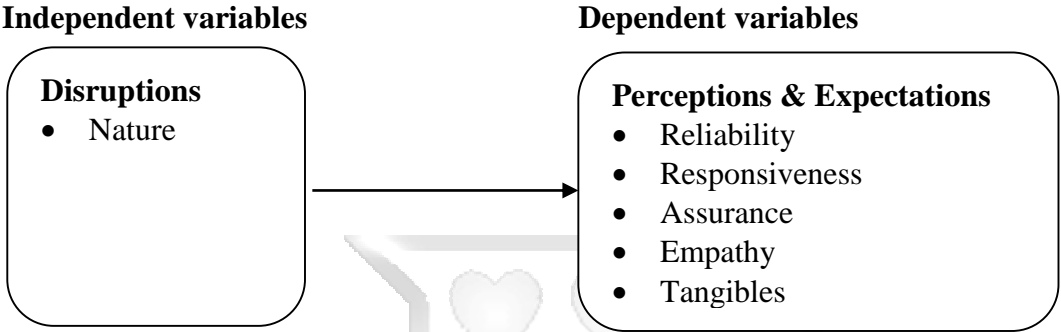
Adopted from Zeithaml, Bitner, and Parasuraman (2010)
Figure 2.1: Conceptual Model showing relationship between Disruptions and Perception and Expectations of Service Quality

The conceptual model is adopted from a modified SERVQUAL Model with five of the dimensions as service quality; Reliability, Responsiveness, Assurance, Tangibles and Empathy with the addition of disruptions, similar to the one used by Kumar et al (2010). Service quality is defined as the expectations of passengers and the passenger perceptions of an airlines service which are subject to external factors. This study focuses on the difference between airline passengers' expectations and perceptions of service quality during disruptions.

In this study, the initial 22 items of SERVQUAL model are modified and additional items are included to measure disruptions and the perceived service quality of services offered to passengers during airline disruptions at JKIA. The service gap will be measured with the application of a summarized 27-items research instrument.

Table2.1: Operational definition of variables

Variable	Explanation	How the variable was measured	Source
Independent variables			
Disruptions • Nature	Interference of normal operation at the airport that are within the control of airlines. These disruptions can either be controllable or non-controllable by management of airlines. This is measured in three dimensions: Nature; frequency and magnitude of the Disruptions	• The nature of disruptions is measured by a delay and a cancellation which can either be controllable or non- controllable.	(Ling et al., 2010)
Dependent variables			
Passengers' perception and expectations of service quality	**Reliability** Ability of the airline employees to perform the promised service to passengers dependably and accurately during disruptions	• The researcher used five elements measured on a Likert scale of 1-5; these are promises of correct services, quality information relayed and infrequent disruptions.	(Tyler, 2010)
	Assurance Knowledge and courtesy of employees and their ability to inspire trust and confidence in passengers during disruptions at JKIA.	• The researcher used six elements measured on a Likert scale of 1-5; these are well understood passenger needs, correctly answered questions, passenger safety, passenger confidence, ease of obtaining information and accurate booking records.	(Nantel, 2010)
	Responsiveness Willingness of the airline employees to help and give prompt service to passengers during disruptions.	• The researcher used six elements measured on a Likert scale of 1-5; these are correct information provided promptness of service, willingness to help by staff, availability of staff to assist and number of hours worked.	(Shavell, 2010)

Variable	Explanation	How the variable was measured	Source
	Empathy Caring and individualized attention given to passengers by airline employees during disruptions.	• The researcher used six elements measured on a Likert scale of 1-5; these are correct and appropriate information relayed, accurate problem solving ability, polite staff, individualized attention provided, availability of staff to assist, best service provided and compensation of passengers.	(Bauckham, 2012)
	Tangibles Appearance of physical facilities and equipment, internet, press release during disruptions.	• The researcher used four elements measured on a Likert scale of 1-5; these are modern equipment available, physical facilities available, well dressed staff and clean physical environment	(Arasli et. al.,2012)

2.5.Chapter Summary

As highlighted in the literature above, conflicting findings have been established by various authors on the effect of airline disruptions on passengers' perceptions and expectations of service quality. For instance Baluch (2012) established negative relationship between disruptions and service quality while Guitteye (2010) established no relationship exists between disruptions and service quality. In this regard therefore this study tried to establish the effect of disruptions on service quality in the Kenya context. Further to this, Tyler (2010) established that globally in 2013, 12% of disruptions were reported whereas in Kenya, Maliga (2010) notes that 14 % of disruptions were reported at JKIA. This is higher than the global average. With this consideration, this study tried to establish the types of disruptions experienced at JKIA and their effects thereof on passengers' perceptions and expectations of service quality given the fact that JKIA experienced more disruptions as compared to the entire world.

<div align="center">

CHAPTER THREE

RESEARCH METHODOLOGY

</div>

3.1.Introduction

This chapter sets out various stages and phases followed in completing the study. It involves a blueprint for the collection, measurement and analysis of data. This section is an overall scheme, plan or structure conceived to aid the researcher in answering the raised research question. In this stage, most decisions about how research was executed and how respondents were approached, as well as when, where and how the research would be completed. Therefore in this section the research identified the procedures and techniques that were used in the collection, processing and analysis of data. Specifically the following subsections are included; research design, target population, data collection instruments, data collection procedures, research quality and finally data analysis.

3.2. Research design

This study sought to establish the influence of airline disruptions on passengers' perceptions and expectations of service quality at Jomo Kenyatta international airport. This study adopted a survey research design. The design was preferred since it enabled the researcher to collect data from a sizeable and representative cross-section population (Cooke and Rousseau, 2010). Sieber (2011) emphasized the importance of a survey by acknowledging that it is a powerful form of qualitative analysis that involves careful and complete observation of social unit irrespective of what type of unit is under study.

In addition, a descriptive research design was used since the researcher expects to collect information from passengers about their attitude and experience during disruptions without changing the natural set up. According to Mugenda and Mugenda (1999) this design was important and appropriate to use data where subjects are observed in natural set ups without manipulating the environment. It can also be used when collecting information about people's attitudes and opinions. In addition, this study adopted a correlation analysis research design since the researcher expected to show the relationship between the key variables adopted in the study.

3.3. Target population

According to Ngechu (2004), a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated. The target population for the research was the top ten airlines operating at Jomo Kenyatta International Airport and their respective passengers. This population was picked because these airlines have extensive networks hence are more susceptible to disruptions (Maliga, 2010). JKIA serves a daily average of 19,000 passengers from Africa, Europe and Asia (KAA Report, 2014).

3.4. Sample size and sample design

JKIA serves a daily average of 19,000 passengers (KAA Report, 2014). Based on this daily passenger number, the sample size for this study was 196 passengers. This sample size was calculated using the following sample size formula adopted from Macorr Research, (2015):

$$SS = \frac{Z^2 \times P \times (1-P)}{C^2}$$

Where SS is the sample size

Z is z-value of 1.96 for 95% confidence level

Percentage picking a choice expressed as a decimal (0.5)

C is confidence level expressed as a decimal (0.07)

Therefore; SS= {1.96^2 × 0.5 × (1-0.5)}/ 0.07^2

= 196

This sample was selected from the passengers already at the departure lounge awaiting boarding. This was because they were easily accessible as they were all in one place. The sample population was span on different airlines with different origin and destinations. For the airlines, 10 airlines were picked from the top ten airlines and one Operations Manager per airline was identified to complete the questionnaire. This was considered representative of the airlines at JKIA.

The unit of analysis was the individual airline passengers of top ten airlines operating at Jomo Kenyatta International Airport. It was virtually impossible to draw probability samples for majority of studies, including this one due to complexity of the airline's networks (Maliga, 2010; Egesa, 2011). Consequently, most studies conducted in airlines consumer research have usually had to rely on convenience (non-probability) sampling procedure samples (Tuncalp 2012; Abdul-Muhmin 2010). This study also adopted this sampling technique for ease of selecting passengers whom the researcher thought were willing to provide research data.

3.5. Data description and collection methods

Primary data was collected through the use of a structured self-administered questionnaire instrument which reflects the conceptual framework depicted in Figure 2.1. Two sets of questionnaires were prepared; one to be completed by operation managers of airlines and the other to be completed by passengers of these airlines.

Drop and pick method was be used to administer the questionnaire that was completed by the airlines' operation managers. This method allowed the respondent to fill in the questionnaire at his or her convenience and deliver it the researcher. The questionnaire consisted of structured questions which were mostly close ended.

For the passengers, the researcher was allowed to access the boarding lounges in which the questionnaires were provided to the check-in passengers and later collected at their respective boarding gates. The researcher spent two days at the check-in and boarding gates of the each of the 10 airlines giving out 20 questionnaires to the passengers of these airlines in their respective gates. The questionnaire was pilot tested on twenty passengers so as to correct any mistakes that existed. In line with the research model in Figure 1.1, the questionnaire designed for this study was based on the widely accepted SERVQUAL model. A total of 27 attributes were categorized under six dimensions as follows: Tangibility (4 attributes); Reliability (5 attributes); Responsiveness (6 attributes); Assurance (6 attributes); Empathy (6 attributes); and Disruptions (2 attributes).

The questionnaire consisted of four parts; the first part consisted of passenger's responses on demographic characteristics including; age, gender, educational level and occupation. The second part included general questions pertaining to passengers travel and disruptions. The third part was designed to measure the respondents' expectations (E) regarding service quality of the airlines operating at JKIA during disruptions. The fourth part sought to establish respondents' perceptions (P) of service quality actually provided by the airlines operating at JKIA during disruptions.

A five-point Likert Scale ranging from strongly disagree = 1, agree=2, neutral=3, disagree=4 to strongly agree = 5 was used to measure the 27 attributes under six dimensions mentioned above. Secondary data was obtained from the airport operating records, airline records and reports. The researcher collected this information within a period of one month.

3.6. Description of data analysis procedure

The data collected through questionnaires was edited, coded, tabulated and statistical inference drawn. Descriptive statistics such as mean and percentages were applied in analysing the preliminary findings. In addition, Statistical Package for Social Sciences (SPSS) and Microsoft Excel were used to analyse quantitative data and present it in tables. Cross tabulation which is a statistical procedure that involves organising data by groups, categories or classes was used to enable the inspection of differences among groups and to make comparisons. This analysis helped in determining the form of relationship between two variables (Sieber, 2010). Various critical aspects of the questionnaire were cross tabulated to determine the level of association.

Data reduction techniques (iterated principal factor analysis using SPSS) was used to extract the factors that affect service quality. The factors with latent roots greater than unity were extracted from the factor loading matrix. Only items with loadings >0.5 were regarded as being significant.

Furthermore, when these items are significantly loaded on more than one factor, only those with the highest value will be selected. Additionally, the descriptive statistics (mean and standard deviation) were used to analyse the data.

3.7. Reliability and validity

Reliability and validity was assured by the researcher's measurement instruments and in the construction of research samples. The researcher used a structured questionnaire and convenience sampling method that resembled Patton's (2010). External validity of the study was strengthened through the use of a sample population that spanned on different airlines with different origin and destinations. The reliability of the research tool was also established by the use of Cronbach's Alpha statistic. It is understood that the Cronbach's Alpha value of more than 0.7 shows greater reliability of the tool (Nunnally, 1978).

3.8. Ethics

The researcher sent a letter (see Appendix 1) to the management of JKIA and the airlines targeted seeking permission to carry out the research. Respondents were assured that the information collected would be treated with outmost confidentiality. The questionnaire guaranteed anonymity through avoidance of personal questions.

3.9. Limitations of the study

The researcher faced numerous challenges while undertaking this study. First, data collection was difficult as majority of the airlines were reluctant to grant the research permission to distribute research questionnaires to their passengers. This challenge was overcome by constant appeals to the management of the various airlines which later on granted permission. The other challenge faced was reluctance of the respondents to complete the questionnaires. The researcher overcame this by extending the period for data collection from the estimated one month to two months so as to reach as many passengers as possible as per the sample size.

CHAPTER FOUR
PRESENTATION OF FINDINGS

4.1.Introduction

This chapter presents the findings of the study. The findings of each of the research objectives are presented. This section also highlights the preliminary findings of this study by giving the response rate of study based on the data collected and other bio data.

4.2.Preliminary findings

Data was collected from two categories of the target population namely; airline passengers and the management of the selected airlines. The target population for this study was the airline passengers and management of airlines operating from JKIA. A sample of 196 passengers was taken and 106 responded representing 55.79% response rate. At the same time the management of the top airlines operating from JKIA was targeted. The sample was 10 representatives of management and 8 of them responded representing 80% response rate.

On the reliability of the research tool Cronbach's alpha value was computed. This value was established to be 0.805 which is more than 0.7 showing that the research tool was reliable in undertaking the study as suggested by Nunnally (1978).

4.3.Respondents demographics

In relation to gender, 42% of the respondents in this study were male while 58% were female. Regarding age, 55% of the respondents were between 25-40 years of age while 25% were less than 25 years of age. Passengers who had education of primary and below represented 1%; high school represented 4%; college graduates represented 67% while post graduate represented 28%. The findings for the respondents' demographics are as are summarized in table 4.1 below.

Table 4.1: Demographic profile of respondents

Demographic	Category	Frequency	Percentage
Gender	Male	44	42%
	Female	62	58
Age	Less than 25 years	27	25
	25-40 years	58	55
	More than 40 years	21	20
Race	African	44	42
	Asian	33	31
	European	17	16
	American	12	11
Education	Primary and below	1	1
	High school	4	4

Demographic	Category	Frequency	Percentage
	College graduate	71	67
	Post graduate	30	28

4.4. Types of disruptions

The findings indicate that on average 75% of the airline management pointed that they had experienced a cancellation over the last one year. At the same time 50% of them indicated that they had experienced a delay. The passengers who experienced a cancellation were 50% while 81% experienced a delay. From these findings, delays are therefore the most common type of disruptions experienced by both the passengers and management of the airlines operating from JKIA.

4.5. Disruptions experienced by airlines

The findings indicate that KQ and KLM had a mean score of 3.25; Fly540 had a mean score of 3.04 while Rwandair had a mean score of 2.36. The Emirates had the lowest mean score of 1.69 followed by Etihad Airways which had a mean score of 1.91. British Airways, South African Airlines, Qatar Airways, Ethiopian Airlines and Turkish Airlines have mean scores of 2, 2.52, 2.21, 2.09 and 2.25 respectively. These findings are shown in the table below.

Table 4.2: Mean score of disruptions per airline

Airline	Mean	Stdev
Kenya Airways and KLM	3.25	1.24
Fly 540	3.04	1.36
The Emirates	1.69	1.02
Ethiopian Airlines	2.09	1.16
British Airways	2.00	0.84
South African Airlines	2.52	0.58
Qatar Airways	2.21	0.80
Turkish Airlines	2.25	0.84
Etihad Airways	1.91	0.83
Rwandair	2.36	0.93

4.6. Disruptions as per management

Seventy five percent of operations managers of airlines stated that they sometimes faced the disruptions while 25% of them stated that they experienced disruptions many times.

4.7. Costs of disruptions

An average 92% of the passengers stated that disruptions cost them their time while 54% stated that it cost them their money. Only 19% of the passengers felt that the disruptions affect them emotionally. On the side of airline management, 87.5% felt that disruptions cost them their time while 12.5% stated that disruptions cost them their money.

4.8.Disruptions and management control

Of all the disruptions experienced by passengers, 75% of them were within the control of management while only 25% were not within management control.

4.9.Causes of disruptions

The major cause of disruption at JKIA in the past one year was found to be the fire outbreak which was pointed out by 75% of the airlines. Other causes were: maintenance problems, crew problems, extreme weather conditions and runway closure which were pointed out by 25% of the airlines.

4.10.   How airlines are responding to disruptions from JKIA.

Table 4.3: How airlines are responding to disruptions

Strategy	Frequency	Percent
Used state of the art forecasting systems such as SABRE airline management systems during disruptions	7	87.5
Used appropriate system redundancy during disruptions	5	62.5
Trained employees on how to effectively handle disruptions	5	62.5
Pre-treated runways overnight to eliminate closures	5	62.5
Advised passengers before they left their homes through short messages, emails and phone calls	4	50
Rescheduled delayed operations	4	50
Rebooked passengers on other airlines during disruptions	5	62.5
Offered gift cards with discounts for future flights for the delayed passengers		
Booked and transferred passengers to hotels during disruptions	6	75
Reduced flight schedules during disruptions	6	75

Operations managers of the various airlines under study were asked to state the strategies they used to mitigate the effects of disruptions experienced over the past one year. In their responses as shown in table 4.3 above, 87.5% of them stated that they used state of the art forecasting systems such as SABRE airline management systems. At the same time 62.5% of them reported that they used appropriate redundancy programmes, training of employees, pre-treating runways overnight to eliminate closures and rebooking of passengers. Reducing flight schedules and booking passengers in hotels were favoured by 75% of the respondents. Only 50% of the respondents reported that they advised their passengers before leaving their homes through text messages, emails and phone calls and rescheduling delayed operations.

It was also noted that airlines never used the following strategies, namely: reducing fares during disruptions; laying off employees during disruptions; reducing salaries and benefits for employees during disruptions; adhering to the maintenance requirements of different aircraft; following the regulations governing work rules for crew on different flights; complying with air traffic control regulations and programs managing traffic in the airspace and at airports deploying additional employees during disruptions; having senior managers and captains apologize to passengers during disruptions; consistently updating passengers on the disruptions; having passengers access lounge facilities during disruptions; having participants adhere to their roles and responsibilities during disruptions; applying collaborative planning during disruptions; employing robust contingency protocols during disruptions; and clearly understanding the potential system weaknesses during disruptions.

4.11. How airlines are working with authorities

All the airlines responded that they work with airline authorities in mitigating the disruptions they faced. All of them pointed that they work with airline authorities in the following ways: expanding the airports and improving the air traffic control systems to, in effect, eliminate the capacity scarcity; complying with air traffic control regulations and programs that manage traffic in the airspace and at airports; coordinated responses by airports and airlines to disruptions among others. Only one airline pointed that they engaged with airline authorities in collaborative decision making by all stakeholders concerned.

4.12. How disruptions affect passengers' perceptions and expectations of service quality

4.12.1. Disruptions and passengers' expectations

(a). Descriptive statistics

The passengers were asked to indicate their level of agreement with the twenty seven statements measuring their expectations on the quality of service during disruptions by the airlines operating at JKIA. The passengers were to rank each statement from strongly disagree to strongly agree as they appeared in a Likert Scale of 1 to 5. First, the descriptive analysis was performed on the passengers' responses where their mean score and standard deviations were computed using the factor analysis and then the mean values were used as an indicator of their level of agreement with the statements. The 27 service quality statements were categorized based on the classification provided by Zeithaml, Bitner, and Parasuraman (1985, 1988, 1991, and 2010) in their SERVEQUAL Model analysis of quality. The findings indicated that all the items returned a mean score of above 4 on a Likert scale of 5 for strongly agree as shown in table 4.4 below.

Reliability had the highest mean score of 4.81 with standard deviation of 0.45. However, Responsiveness had the lowest mean score of 4.65 with a standard deviation of 0.63. The overall mean score of all the items was 4.72 with the overall standard deviation of 0.54.

Table 4.4: Results of mean importance ratings for expectations

Category	No.	Service Quality Statements	Mean	Stdev
Reliability	1	I expect employees to be knowledgeable to answer my questions regardless of the disruptions.	4.9	0.31
	2	I expect airlines not to have frequent delays.	4.83	0.56
	3	I expect to be given prompt service by airline employees regardless of the disruptions.	4.79	0.43
	4	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.	4.78	0.46
	5	I expect airline employees operating hours to be convenient to me regardless of the disruptions.	4.73	0.51
Overall			**4.81**	**0.45**
Assurance	6	I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.	4.9	0.34
	7	I expect airline to keep my booking records accurately regardless of the disruptions.	4.89	0.32
	8	I expect employees of airlines to relay information to me in an appropriate language regardless of the disruptions.	4.81	0.44
	9	I expect to feel safe while transacting with the airline employees during disruptions.	4.77	0.44
	10	I expect employees of airlines to convey information about disruptions to me on a timely manner regardless of the disruptions.	4.58	0.75

Category	No.	Service Quality Statements	Mean	Stdev
	11	I expect the behaviour of the employees to be the one to instil confidence in me regardless of the disruptions.	4.54	0.73
Overall			**4.75**	**0.50**
Tangibles	12	I expect the airline physical environment of the check-in and aircraft to be clean regardless of the disruptions.	4.82	0.39
	13	I expect an ideal airline to have modern equipment regardless of the disruptions.	4.76	0.47
	14	I expect airline employees to be well dressed and appear neat regardless of the disruptions.	4.75	0.52
	15	I expect the physical facilities such as check-in and aircraft (shelves, counters, computers, and cabin) to be visually appealing regardless of the disruptions.	4.65	0.55
Overall			**4.74**	**0.48**
Empathy	16	I expect the airline employees to understand my specific needs regardless of the disruptions.	4.86	0.42
	17	I expect that there be enough employees to give me individualized attention regardless of the disruptions.	4.76	0.49
	18	I expect airlines to have my best interest at heart regardless of the disruptions.	4.68	0.59
	19	I expect airline employees to give me personalized service regardless of the disruptions.	4.67	0.63
	20	I expect airline employees to never be too busy to respond to my requests regardless of the disruptions.	4.62	0.64
	21	I expect when I have a problem, employees to show a sincere interest in solving it regardless of the disruptions.	4.48	0.73
Overall			**4.68**	**0.58**
Responsiveness	22	I expect airline employees to provide their services at the time they promise to do so regardless of the disruptions.	4.84	0.44
	23	I expect to be compensated by airlines during delays.	4.76	0.45
	24	I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions.	4.62	0.61
	25	I expect employees to be polite to me regardless of the disruptions.	4.58	0.77
	26	I expect airline employees to perform the service right the first time regardless of the disruptions.	4.56	0.79
	27	I expect airline employees to always be willing to help me regardless of the disruptions.	4.51	0.73
Overall			**4.65**	**0.63**

(b). Factor analysis and reliability analysis of expectation of service quality

Factor analysis was conducted to determine what, if any, underlying structure exists for measures on the following twenty seven variables categorized into five broad categories of Reliability; Responsiveness; Assurance; Empathy; Tangibles.

A factor analysis was conducted using data reduction, which utilized the eigenvalue criteria and varimax rotation. Applying the four methods of interpretation, the researcher examined the eigenvalues in the table of total variance (see table 4.5 below). Three components were retained since they had eigenvalues greater than 1. After rotation, the first component accounted for 35.17% of the total variance explained, the second component accounted for 26.07% and the third one accounted for 22.19%. The cumulative total variance explained was established to be 83.431%. This showed that the three components explained 83.43% of the changes in expectations as a result of disruptions indicating a reliable model.

Table 4.5: Total variance explained for expectations

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	16.133	59.753	59.753	16.133	59.753	59.753	9.496	35.170	59.753
2	4.029	14.921	74.674	4.029	14.921	74.674	7.039	26.070	74.674
3	2.365	8.757	83.431	2.365	8.757	83.431	5.992	22.192	83.431
4	0.915	3.387	86.619						
Extraction Method: Principal Component Analysis.									

The application of the eigenvalue criteria seemed appropriate since the number of variables was less than 30 and all communalities were greater than 0.7 (see table 4.6 below).

Table 4.6: Communalities for expectations

	Service Quality Statement	
No.	Tangibles	Extraction
1	I expect an ideal airline to have modern equipment regardless of the disruptions.	0.941
2	I expect the physical facilities such as check-in and aircraft (shelves, counters, computers, and cabin) to be visually appealing regardless of the disruptions.	0.917
3	I expect the airline physical environment of the check-in and aircraft to be clean regardless of the disruptions.	0.911
4	I expect airline employees to be well dressed and appear neat regardless of the disruptions.	0.898
	Reliability	
5	I expect airlines not to have frequent delays.	0.888
6	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.	0.885
7	I expect employees to be knowledgeable to answer my questions regardless of the disruptions.	0.884
8	I expect to be given prompt service by airline employees regardless of the disruptions.	0.877
9	I expect airline employees operating hours to be convenient to me regardless of the disruptions.	0.865

	Service Quality Statement	
No.	Tangibles	Extraction
	Empathy	
10	I expect when I have a problem, employees to show a sincere interest in solving it regardless of the disruptions.	0.864
11	I expect airline employees to never be too busy to respond to my requests regardless of the disruptions.	0.862
12	I expect the airline employees to understand my specific needs regardless of the disruptions.	0.861
13	I expect that there be enough employees to give me individualized attention regardless of the disruptions.	0.857
14	I expect airlines to have my best interest at heart regardless of the disruptions.	0.845
15	I expect airline employees to give me personalized service regardless of the disruptions.	0.839
	Assurance	
16	I expect employees of airlines to convey information about disruptions to me on a timely manner regardless of the disruptions.	0.836
17	I expect employees of airlines to relay information to me in an appropriate language regardless of the disruptions.	0.836
18	I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.	0.826
19	I expect airline to keep my booking records accurately regardless of the disruptions.	0.825
20	I expect to feel safe while transacting with the airline employees during disruptions.	0.813
21	I expect the behaviour of the employees to be the one to instil confidence in me regardless of the disruptions.	0.811
	Responsiveness	
22	I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions.	0.799
23	I expect airline employees to perform the service right the first time regardless of the disruptions.	0.778
24	I expect airline employees to provide their services at the time they promise to do so regardless of the disruptions.	0.772
25	I expect employees to be polite to me regardless of the disruptions.	0.708
26	I expect to be compensated by airlines during delays.	0.704
27	I expect airline employees to always be willing to help me regardless of the disruptions.	0.624

The scree plot was then assessed and indicated that the eigenvalues after five components levels off (see figure 4.1 below). Evaluation of residuals indicated that only five residuals are greater than 0.05. Although the scree plot suggested that the inclusion of the fourth and fifth components may improve the model, the residuals revealed that any model improvement would be minimal. Consequently, three components were retained.
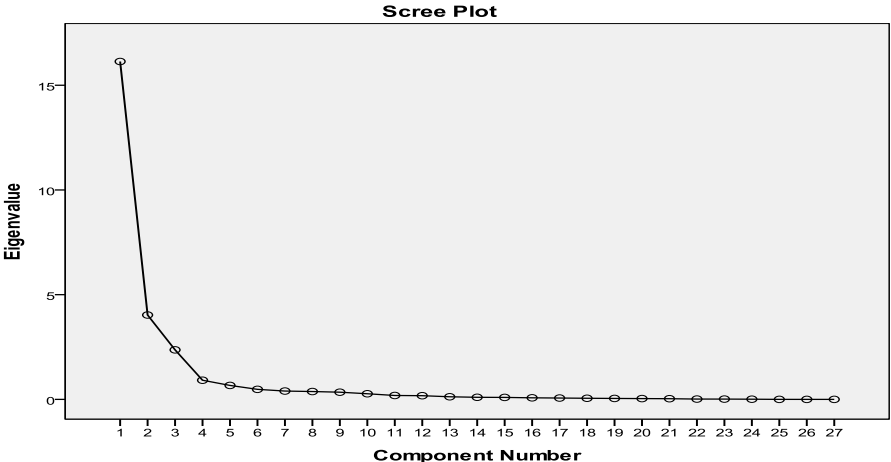
Figure 4.1: Scree Plot for expectations

Since the first rotation had a total variance explained of 35.17%, this rotation was selected for further analysis as shown below. In this rotation, only three components of service quality were retained and this encompassed: Responsiveness; Empathy; and Assurance. Responsiveness had an attribute with the highest factor loading of 0.863 which was *'I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions'* while Assurance had an attribute with the lowest factor loading of 0.860 which was *'I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.'* The average mean values for factor loadings for Responsiveness, Empathy and Assurance, are 0.836, 0.825 and 0.814 respectively. Table 4.7 below presents the factor loadings for the rotated components.

Table 4.7: Factor Loadings for the Rotated Component Matrix for expectations

Service Quality Statement	Responsiveness	Empathy	Assurance
I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions.	0.863		
I expect airline employees to perform the service right the first time regardless of the disruptions.	0.851		
I expect airline employees to provide their services at the time they promise to do so regardless of the disruptions.	0.846		
I expect employees to be polite to me regardless of the disruptions.	0.837		

43

Service Quality Statement	Responsiveness	Empathy	Assurance
I expect to be compensated by airlines during delays.	0.811		
I expect airline employees to always be willing to help me regardless of the disruptions.	0.806		
Mean value	**0.836**		
I expect airline employees to never be too busy to respond to my requests regardless of the disruptions.		0.861	
I expect the airline employees to understand my specific needs regardless of the disruptions.		0.859	
I expect that there be enough employees to give me individualized attention regardless of the disruptions.		0.857	
I expect airlines to have my best interest at heart regardless of the disruptions.		0.854	
I expect airline employees to give me personalized service regardless of the disruptions.		0.693	
Mean Value		**0.825**	
I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.			0.860
I expect airline to keep my booking records accurately regardless of the disruptions.			0.855
I expect to feel safe while transacting with the airline employees during disruptions.			0.777
I expect the behaviour of the employees to be the one to instil confidence in me regardless of the disruptions.			0.764
Mean value			**0.814**

4.12.2. Disruptions and passengers' Perception of service quality

(a). Descriptive statistics

The passengers were asked to indicate their level of agreement with the twenty seven statements measuring their perception on the quality of service during disruptions by the airlines operating at JKIA. The passengers were to rank each statement from strongly disagree to strongly agree as they appeared in a Likert Scale of 1 to 5. First, the descriptive analysis was performed on the passengers' responses where their mean score and standard deviations were computed and then the mean values were used as an indicator of their level of agreement with the statements. The 27 service quality statements were categorized based on the classification provided by Zeithaml, Bitner, and Parasuraman (1985, 1988, 1991, and 2010) in their SERVEQUAL Model analysis of

quality. The findings indicated that all the items returned a mean score of above 3 on a Likert scale of 5 for strongly agree as shown in the table below.

Tangibles had the highest mean score of 3.85 with standard deviation of 1.24. However, Assurance had the lowest mean score of 3.40 with a standard deviation of 1.28. The overall mean score of all the items was 3.57 with the overall standard deviation of 1.27.

Table 4.8: Results of mean importance ratings for perception

Category	No.	Service Quality Statements	Mean	Stdev
Tangibles	1	The airline had modern equipment to minimize the disruptions.	3.73	1.22
	2	The airline physical facilities- check-in and aircraft (shelves, counters, computers, and cabin) were visually appealing during disruptions.	3.80	1.36
	3	Airline employees were well dressed and appeared neat during disruptions.	4.03	1.05
	4	The airline physical environment of the check-in and aircraft was clean during disruptions.	3.82	1.34
Overall			**3.85**	**1.24**
Empathy	6	When I had a problem, employees showed a sincere interest in solving it during disruptions.	4.03	1.36
	7	Airline employees were never too busy to respond to my requests during disruptions.	3.82	1.35
	8	The airline employees understood my specific needs during disruptions.	3.80	1.29
	9	I expect that there be enough employees to give me individualized attention regardless of the disruptions.	3.45	1.34
	10	Airlines had my best interest at heart during disruptions.	3.45	1.35
	11	Airline employees gave me personalized service during disruptions.	3.34	1.05
Overall			**3.65**	**1.29**
Reliability	12	Airlines had no frequent delays.	4.03	1.22
	13	Airline employees made information easily obtainable by the passengers during disruptions.	3.73	1.38
	14	Employees were knowledgeable to answer my questions during disruptions.	3.56	1.38
	15	I was given prompt service by airline employees during disruptions.	3.24	1.05
		Airline employees operating hours should be convenient to me during disruptions.	3.24	1.21
Overall			**3.56**	**1.25**
Responsiveness	16	When employees promised to do something by a certain time, they did so during disruptions.	3.82	1.35
	17	Airline employees performed the service right the first time during disruptions.	3.73	1.38
	18	Airline employees provided their services at the time they promised to do so during disruptions.	3.56	1.21

Category	No.	Service Quality Statements	Mean	Stdev
	19	Airline employees were polite to me regardless of the disruptions.	3.45	1.22
	20	I was compensated by airlines during delays.	3.24	1.38
	21	Airline employees were always willing to help me during disruptions.	3.24	1.34
Overall			**3.51**	**1.31**
Assurance	22	Employees of airlines conveyed information about disruptions to me on a timely manner.	3.56	1.38
	23	Employees of airlines relayed information about disruptions to me in an appropriate language.	3.56	1.29
	24	Employees of airlines relayed quality and comprehensive information about disruptions to me.	3.34	1.21
	25	Airlines kept my records accurately during disruptions.	3.34	1.29
	26	I felt safe while transacting with the airline employees during disruptions.	3.34	1.21
	27	The behaviour of the employees was one that instilled confidence in me during disruptions.	3.24	1.29
Overall			**3.40**	**1.28**

(b). Factor analysis and reliability analysis of perception of service quality

Factor analysis was conducted to determine what, if any, underlying structure exists for measures on the following twenty seven variables categorized into five broad categories of Reliability; Responsiveness; Assurance; Empathy; Tangibles.

A factor analysis was then conducted using data reduction, which utilized the eigenvalue criteria and varimax rotation. Applying the four method of interpretation, the researcher examined the eigenvalues in the table of total variance (see table 4.9). After rotation the first component accounted for 34.12% of the total variance explained, the second component accounted for 28%, the third component accounted for 16.64% and the fourth component accounted 8.19% (see table 4.9). The cumulative total variance explained was established to be 83.431%. This showed that the three components explained 86.94% of the changes in perception as a result of disruptions indicating a reliable model.

Table 4.9: Total variance explained for perception

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	14.030	51.963	51.963	14.030	51.963	51.963	9.213	34.122	34.122
2	4.520	16.741	68.704	4.520	16.741	68.704	7.559	27.998	62.120
3	3.647	13.507	82.212	3.647	13.507	82.212	4.492	16.638	78.758
4	1.278	4.732	86.944	1.278	4.732	86.944	2.210	8.186	86.944
5	.843	3.121	90.065						
Extraction Method: Principal Component Analysis.									

The application of the eigenvalue criteria seemed appropriate since the number of variables was less than 30 and all communalities were greater than 0.7 (see table 4.10).

Table 4.10: Communalities for Perception

No.	Service Quality Statement	Initial	Extraction
Tangibles			
1	The airline had modern equipment to minimize the disruptions.	1	0.947
2	The airline physical facilities- check-in and aircraft (shelves, counters, computers, and cabin) were visually appealing during disruptions.	1	0.947
3	Airline employees were well dressed and appeared neat during disruptions.	1	0.947
4	The airline physical environment of the check-in and aircraft was clean during disruptions.	1	0.929
Reliability			
5	Airlines had no frequent delays.	1	0.929
6	Airline employees made information easily obtainable by the passengers during disruptions.	1	0.929
7	Employees were knowledgeable to answer my questions during disruptions.	1	0.924
8	I was given prompt service by airline employees during disruptions.	1	0.924
9	Airline employees operating hours should be convenient to me during disruptions.	1	0.924
Empathy			
10	When I had a problem, employees showed a sincere interest in solving it during disruptions.	1	0.912
11	Airline employees were never too busy to respond to my requests during disruptions.	1	0.912
12	The airline employees understood my specific needs during disruptions.	1	0.912
13	I expect that there be enough employees to give me individualized attention regardless of the disruptions.	1	0.878
14	Airlines had my best interest at heart during disruptions.	1	0.878
15	Airline employees gave me personalized service during disruptions.	1	0.873
Assurance			
16	Employees of airlines conveyed information about disruptions to me on a timely manner.	1	0.873

	Service Quality Statement	Initial	Extraction
No.		Initial	Extraction
17	Employees of airlines relayed information about disruptions to me in an appropriate language.	1	0.873
18	Employees of airlines relayed quality and comprehensive information about disruptions to me.	1	0.873
19	Airlines kept my records accurately during disruptions.	1	0.872
20	I felt safe while transacting with the airline employees during disruptions.	1	0.847
21	The behaviour of the employees was one that instilled confidence in me during disruptions.	1	0.847
Responsiveness			
22	When employees promised to do something by a certain time, they did so during disruptions.	1	0.84
23	Airline employees performed the service right the first time during disruptions.	1	0.832
24	Airline employees provided their services at the time they promised to do so during disruptions.	1	0.832
25	Airline employees were polite to me regardless of the disruptions.	1	0.815
26	I was compensated by airlines during delays.	1	0.615
27	Airline employees were always willing to help me during disruptions.	1	0.593

The scree plot was then assessed and indicated that the eigenvalues after six components levels off (see figure 4.2). Evaluation of residuals indicated that only five residuals are greater than 0.05. Although the scree plot suggested that the inclusion of the fifth and sixth components may improve the model, the residuals revealed that any model improvement would be minimal. Consequently, four components were retained.

Figure 4.2: Scree Plot for perception

Since the first rotation had a total variance explained of 34.122%, this rotation was selected for further analysis as shown below. In this rotation, only three components of service quality were retained and this encompassed: Assurance; Empathy; and Reliability. Assurance had an attribute with the highest factor loading of 0.965 which was *'Employees of airlines conveyed information*

about disruptions to me on a timely manner.' while Reliability had an attribute with the lowest factor loading of 0.610 which was *'Airline employees made information easily obtainable by the passengers during disruptions'.* The average mean values for factor loadings for Assurance, Empathy and Reliability are 0.944, 0.899 and 0.609 respectively. Table 4.11 below presents the factor loadings for the rotated components.

Table 4.11: Factor Loadings for the Rotated Component Matrix for expectations

Service Quality Statement	Assurance	Empathy	Reliability
Employees of airlines conveyed information about disruptions to me on a timely manner.	0.965		
Employees of airlines relayed information about disruptions to me in an appropriate language.	0.961		
Employees of airlines relayed quality and comprehensive information about disruptions to me.	0.959		
Airlines kept my records accurately during disruptions.	0.926		
I felt safe while transacting with the airline employees during disruptions.	0.926		
The behaviour of the employees was one that instilled confidence in me during disruptions.	0.926		
Mean Value	**0.944**		
When I had a problem, employees showed a sincere interest in solving it during disruptions.		0.918	
Airline employees were never too busy to respond to my requests during disruptions.		0.911	
The airline employees understood my specific needs during disruptions.		0.91	
I expect that there be enough employees to give me individualized attention regardless of the disruptions.		0.877	
Airlines had my best interest at heart during disruptions.		0.877	
Mean Value		**0.899**	
Airline employees made information easily obtainable by the passengers during disruptions.			0.610
Employees were knowledgeable to answer my questions during disruptions.			0.608
Mean value			**0.609**

4.13. How airline strategies for disruptions affect perception and expectation of service

When passengers were asked to state their agreement on the best strategy by airlines on enhancing their perception of service quality, the following was found out as shown in table 12 below.

Table 4.12: How airline strategies for disruptions affect perception and expectation of service

Strategy	Important Percent	Not important Percent
Reducing flight schedules during disruptions	9	91
Use of state of the art forecasting systems	14	86
Staff on how to effectively handle disruptions	76	24
Rebooking them on other airlines	92	8
Compensated for the delay	74	26
Used appropriate system redundancy during disruptions	90	10
Pre-treating runways overnight to eliminate closures	83	17
Advising passengers before they left their homes through short messages, emails and phone calls	71	29
Rescheduling delayed operations	75	15

The above table shows that passengers favoured strategies such as rebooking to other airlines, booking to hotels, compensation and staff training to be the most important in enhancing their perception and expectations of service quality. These strategies returned higher response percentages as opposed to the other strategies.

CHAPTER FIVE

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter highlights the discussions and conclusions based on the findings of this study. In addition, the recommendations in line with findings are presented.

5.2. Types and causes of disruptions

Two types of disruptions have been mentioned in the literature to be common in major airports worldwide. These are delays and cancellations. This study established that at JKIA delays were prevalent in the last one year. Delays are common because of the following causes as disclosed by the management of the airlines which are common at JKIA: maintenance problems, crew problems, extreme weather conditions and runway closures.

The findings of this study that delays are common at JKIA are similar to those of Yan and Yang (2010) that established flight delays are the most common type of disruptions that passengers face worldwide. On the causes of airline disruptions and to extension delays, the major causes were identified by management to include maintenance problems, crew problems, extreme weather conditions and runway closures.

Majority of the Passengers of the airlines operating from JKIA believe that delays are the major type of disruptions they faced. This represented 81% of the passengers. This is similar to the findings of Yan and Yang (2010) that established flight delays are the most common type of disruptions that passengers face worldwide. These findings are in tandem with the findings by Muhoho (2012) who established that disruptions at JKIA are caused by extreme weather conditions. However, Muhoho (2012) did not establish whether fire outbreak, runway closure, maintenance problems and crew problems caused disruptions at JKIA as compared to this study hence indicating the contribution this study has made to the body of existing literature.

5.3. Strategies for mitigating disruptions

Many airlines worldwide have in place different strategies to mitigate the diverse effects of disruptions they faced. However, at JKIA, the following strategies were found be commonly employed by the airlines: use of state of the art forecasting systems; use of appropriate system redundancy during disruptions; training employees on how to effectively handle disruptions; pre-treating runways overnight to eliminate closures; advising passengers before they left their homes

through short messages, emails and phone calls; rescheduling delayed operations; rebooking passengers on other airlines during disruptions; booking and transferring passengers to hotels during disruptions; reducing flight schedules during disruptions. These strategies are usually employed because they are not complex to apply and they take little time to put in place. Managers in these airlines, who have more experience in the organization, usually over ten years, tend to prefer these short term mitigation strategies. These strategies are applied any time a delay or a cancellation occurs.

Use of state of the art forecasting systems as a method to deal with disruptions was also found by Tyler (2010) to be useful in responding to airline disruptions. In addition, Hoffman and Woods (2011) established that hotel bookings and transfers during disruptions to be an effective way to manage the effects of disruptions. These findings are also in line with those of Hoffman and Woods (2011) as airlines ranked highest the use of hotel bookings and transfers as one of the ways they use to respond to disruptions.

This study also established that rescheduling the delayed flights was ranked highest by airlines operating from JKIA as a way of dealing with disruptions. Therefore the findings of these two studies are similar. At the same time, following the regulations that govern the work rules of the crew on different flights and complying with air traffic control regulations and programs that manage traffic in the airspace and at airports were mentioned by Hoffman and Woods (2011) as other ways of managing the disruptions which are similar to the findings of this study which ranked them among the top ways of dealing with disruptions at JKIA. Meanwhile, airlines ranked lowest laying employees and cutting employees' salaries and benefits during disruptions as some of the ways they use to respond to disruptions.

All airlines pointed out that they work with authorities in mitigating disruption. All of them mentioned that they jointly work in the following ways: expanding the airports and improving the air traffic control systems to, in effect, eliminate the capacity scarcity; comply with air traffic control regulations and programs that manage traffic in the airspace and at airports; coordinated responses by airports and airlines to disruptions; joint research and development on ways to mitigate disruptions; holding consultative forums for developing the policies to guide during disruptions; having joint facilities with the authorities like offices and equipment for rapid response during disruptions; and carrying out joint security operation to mitigate effects of disruptions.

The airlines maintained that they work with government departments and in particular Kenya Civil Aviation Authority and the Kenya Airports Authority. The airlines work with these authorities because it is provided for in the statutes and also some of the mitigation strategies are long term and requires huge investments and collaboration with the regulators. The working together with authorities usually commence after a major disruption for instance the fire outbreaks and go slows by staff of airport authorities.

These findings are similar to those of Shavell (2010) that advocated for collaboration among airports authorities, airlines and other stakeholders in mitigating the effects of disruptions in airports. However, Shavell (2010) did not go into the specifics of how the collaboration with all the stakeholders could be achieved as compared this study hence the contribution of this study to the body of existing literature in Kenya.

5.4. Disruptions and passengers' perceptions and expectations

The major finding of this study is that airline disruptions affect passengers' perception and expectations of service quality. Regarding passengers' expectations of service quality three attributes namely Responsiveness, Empathy and Assurance were established to be affected by airline disruptions in that they recorded the largest factor loading values with averages of 0.836, 0.825 and 0.814 respectively. This was caused specifically by delays that are prevalent at JKIA. Therefore, airlines should try as much as possible to better off these attributes of service quality in order for the passengers to expect better service.

Regarding perception of service quality, four attributes were found to be affected by airline disruptions. These attributes included Assurance, Empathy and Reliability with factor loading averages of 0.944, 0.899 and 0.609 respectively. The airlines can improve passengers' perception of service quality by improving on the elements of these three components of service quality.

The above findings are similar to the findings of Shavell (2010), Baluch (2012) which established that airline disruptions produced a lower service quality and higher costs since disruptions requires more block time, more aircrafts, more crew, more fuel, more stands and more equipment thus always pushing costs up. Maliga (2010) also established that the industrial action by KQ employees had passenger satisfaction reduce from 80% to 38%. At the same time, in another study on KQ by Bosire (2011) on the effect of power outages, it was established that prolonged power outages increased airline costs by up to 40% on the affected days. These disruptions also had a significant effect on passenger satisfaction with reductions of 48% that was mainly driven

by poor passenger service. Bosire (2011) concluded then that airline disruptions had a negative effect on airline financial performance and passenger satisfaction.

The findings of this study also are in contrast to those of Guitteye (2010) in the West African airline industry where it was established that most airlines were not passenger focused and that disruptions had little effect on service quality because to lack of consumer enlightenment, low expectation and the lack of competition due to government bureaucracy and support. Therefore, Guitteye (2010) concluded that there was no effect of disruption on service quality for airlines operating in West Africa though he noted that profitability was impacted negatively due to increased costs.

From the findings of this study, it is possible to redraw the conceptual framework to depict only those variables that were found to be relevant in the study. Passengers' perceptions and expectations have been separated because not all elements of them were found significant. For instance, reliability, assurance and empathy were found to significant in passengers' perceptions while responsiveness, assurance and empathy were found to be significant in passengers' expectations. The figure below therefore shows the redrawn conceptual framework in line with the findings.
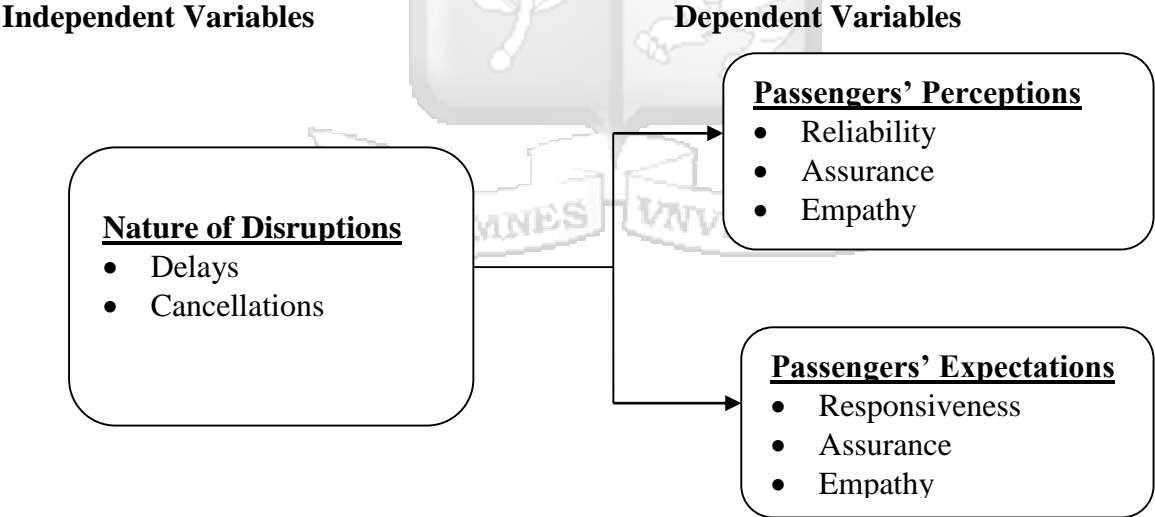
Independent Variables   **Dependent Variables**

Figure 5.1: Revised conceptual framework

5.5. How airline strategies for disruptions affect service quality

This study established that majority of the passengers believe that airlines can improve on the service quality by making sure that they train their staff on how to effectively handle disruptions. In addition, passengers believe that airlines can better of service quality by rebooking them on other airlines during disruptions and transferring them to hotels. Passengers also felt that they need to be compensated for the delay they experienced. These strategies are in concurrence with those pointed by airlines on how to mitigate the effects of disruptions.

However, there are some strategies which passengers felt that they are not important in shaping service quality. These strategies included: use of state of the art forecasting systems; use appropriate system redundancy during disruptions; pre-treating runways overnight to eliminate closures; advising passengers before they left their homes through short messages, emails and phone calls; rescheduling delayed operations; reducing flight schedules during disruptions

These findings are similar to those of Guitteye (2010) who established that passengers during disruptions preferred to be transferred to hotels and be information about disruptions relayed to them by knowledgeable staff. These findings also support those of Hoffman and Woods (2011) which stated that airlines rebooked passengers in hotels so as to improve on the how they felt about the airlines they were travelling in.

5.6. Conclusions and recommendations

One of the major findings for this study is that airline disruptions affect passengers' perception and expectations of service quality. The specific variables for service quality that are affected by disruptions as perceived by passengers include: reliability, assurance, tangibles and empathy. Similarly, the variables for service quality affected by disruptions as expected by passengers include responsiveness, assurance and empathy. Therefore airlines must put in place appropriate measures to mitigate these disruptions. Service quality for airlines is paramount as it determines whether airlines are responsive to passengers' needs or not. This finding suggests that airlines for airlines to improve on service quality they have to prevent; manage; and recover well from the disruptions they experience.

The other major finding for this study is that airlines operating at JKIA work with authorities in mitigating the causes of disruptions. This implies that authorities play a key role in ensuring that airlines operate in an environment with minimal disruptions. This relationship should be enhanced further in trying to improve service quality for airline passengers. In addition to this,

this study also established that the major causes of disruptions at JKIA are extreme weather conditions, maintenance problems, crew problems and runway closure. Some of these causes are internal while others are external. It is important for airlines to put into place appropriate measures to minimize the occurrence of these cause by using modern methods of responding to these causes of disruptions.

The other main finding of this study is that majority of the methods used to respond to disruptions are being applied at JKIA. These methods include: using of state of the art forecasting systems; rescheduling delayed operations; Adhering to the maintenance requirements of different aircraft; following the regulations that govern the work rules of the crew on different flights; complying with air traffic control regulations and programs that manage traffic in the airspace and at airports; hotel bookings and transfers during disruptions; and cutting schedules during disruptions.

Majority of the airlines however do not favour the use of employee's lay-offs and cutting employees' salaries and benefits to deal with disruptions they experienced. This implies that some of these methods of responding to disruptions are universal and can be applied from one country to another. They fit into any environment with ease although some of them cannot be duplicated across the board. JKIA authorities and airlines management should however be careful not to duplicate all that worked in a different setup to the local environment. Based on the findings of this study, the study recommends that airlines should minimize controllable disruptions in order to achieve high standards of service quality. This may lead later on bring about improved bottom line. In addition, the study recommends that airlines should work closely with airports authorities to minimize on the disruptions. This should be enhanced further to include improvement of infrastructure to help curb these disruptions.

Furthermore, this study recommends that airlines should carefully analyse the methods of mitigating disruptions with a view to ensuring only those methods that have been carefully selected and tested should be implemented. This is because some methods cannot be duplicated across different operating environments.

5.7. Suggestions for further research

Further research should be carried out on the effect of disruptions on the passengers' perception and expectations of service quality by using other different measures of service quality such as The SERVPERF Model was carved out of SERVQUAL by Cronin and Taylor in 1992 which this study did not employ. This will inform which of the service quality models is ideal in the Kenyan context. A further study can be carried out in other business contexts such as banking and

insurance industries to establish applicability of the SERVPERF Model in other sectors of the economy.

Finally, further studies should be carried out to establish the effectiveness of the strategies identified in the current study being employed by airlines in mitigating the effects of disruptions.

REFERENCES

Abdul, M. (2012). A Decision Support Framework for Airline Flight Cancellations and Delays. *Transportation Science*, 27, 266–280.

Akhuimen, M. (2013). Towards Safer Skies. *Business Journal*, 121, 44-46.

Andrade, H. (2011). Africa Aviation A New Frontier. *Aviation Journal*, 31, 24-25.

Arasli, K.F., Abdelghany, A.F. & Ekollu, G. (2012). An Integrated Decision Support Tool for Airlines Schedule Recovery during Irregular Operations. *European Journal of Operations Research*, 185, 825–848.

Asford, G., & Wright, D. (2012). *Airline Planning and Execution*. New Jersey: Prentice- Hall.

Ashford G. (2010). *Decision Making in Airline Management.* New Jersey: Ablex Publishing Corporation.

Bahia, S., & Nantel, C. (2010). An Analysis of Passenger Delays Using Flight Operations and Passenger Booking Data. *Air Traffic Control Quarterly*, 13 (1), 1-27.

Ball, M., Barnhart, C., Dresner, M., Hansen, M., Neels, K., & Odoni, A (2010). *Total Delay Impact Study: A Comprehensive Assessment of the Costs and Impacts of Flight Delay in the United States*. Washington: FAA.

Barber, B. M., & Lyon,J. D. (2012). Detecting Abnormal Operating Performance: The Empirical Power and Specification of Test Statistics. *Journal of Financial Economics*, 41, 359-399.

Barnhart, C., Fearing, D., & Vaze, V. (2010). *Modeling Passenger Travel and Delays in the National Air Transportation System*. MIT working paper .

Bauckham, D. J. (2012). Physical Distribution Development, Current Status, and Potential, *Journal of Marketing*, 33(1).

Baumann-Schuster, D., Y. Bassok, R. A. (2010). Coordination and Flexibility in Disruptions, *Manufacturing & Service Operations Management*, 4, 171-207.

Berns, R. G. (1989). *Demographics and Service Quality.* Bowling Green, OH: Bowling Green State University, Northwest Ohio Vocational Education Personnel Development Regional Center.

Bitner, D. J. (2010). Emerging Patterns of Service Organization. *Journal of Business*, 8(1), pp 46-60.

Bosire, J. (2011). Effects of Power Outages on Performance of KQ, *Africa management Journal*, 20, 14-22.

Brown, I. (2011). Africa Transport System. *Africa Management Journal,* 120, 26-28.

Brysland, P. T. & Curry, T. (2011). Service Management--Productivity, Flexibility and Innovation, *Long Range Planning*, 23(4), pp 44-48.

Buttle, F. (2012). SERVQUAL: Review, Critique, Research Agenda. *European Journal of Marketing*, 30, January, 8-32.

Cachon, G. & Fisher, M. (2012). Airline Inventory Management and the Value of Shared Information, *Management Science*, 46, 1032-1048.

Carman, M. (2011). *Supply Chain Vulnerability, Report for Department of Transport, Local Government and the Regions*. Cranfield: Cranfield University.

Cheung, K. L., & Lee H. L. (2012). The Benefit Disruption Management in an Airline, *Management Science*, 48, 300-306.

Chen, T. (1999). Critical success factors for various strategies in the banking industry, *International Journal of Bank Marketing*, 17 (2), 83-92.

Chidambaram, K. (2012). *Constructing grounded theory: A practical guide through qualitative analysis,* London: Sage Publications.

Child, D. (1970). *The Essentials of Factor Analysis*, London: Holt, Rienehart and Winton.

Chopra, S. & Meindl, P. (2011). *Airline Management: Strategy, Planning and Operation*, New Jersey: Prentice- Hall.

Cooke, D. & Rousseau, P. (2010). Africa's troubled flights, *Aviation Journal*, 42, 65-67.

Cronin, J. & Taylor, S.A. (2012). SERVPERF versus SERVQUAL: Reconciling Performance Based and Perceptions minus Expectations Measurement of Service Quality, *Journal of Marketing*, 58, January, 125-31.

Cunningham, L.F., Young, C.E. & Lee, M. (2012). Cross-Cultural Perspectives of Service Quality and Risk in Air Transportation, *Journal of Air Transportation,* 7 (1), 3-26.

Desobre, N. K. & Eccless, Y. S. (2012). *The Sage Handbook of Qualitative Research*, London: Sage Publications.

Donnelly, B. G., Peter,D. & Strauss, A. L. (2011). *The Discovery of Grounded Theory: Strategies for Qualitative Research,* Chicago: Aldine,

Duncan, D. J. & Elliot, D. K (2012). *Managerial Discretion, Organization Structure, and Corporate Performance,* Boston: Harvard Business School.

Egesa, N (2011). A New Beginning for African Airlines, *Africa management Journal*, 24, 22-27.

Fitzgerald, P., Joseph,M. & Langeard, E. (2012). *Servuction, Le Marketing des Services*, Paris: McGraw-Hill.

Furrer, O., Liu, B.S., and Sudharshan, D. (2010). The Relationships between Culture and Service Quality Perceptions: Basis for Cross-Cultural Market Segmentation and Resource Allocation, *Journal of Service Research*, 2 (4), 355-371.

Grönroos, C., (1984). A Service Quality Model and Its Marketing Implications, *European Journal of Marketing*, 18(4), 36-45.

Guitteye, O. (2012). Towards Best Airline Practices*, Aviation Journal*, 13, 10-15.

Gummerson, M. (2010). *Contemporary Services Marketing Management,* The Dryden Press.

Herzberg, F., Mausner, B., Peterson, R. O., & Capwell, D. F. (1957). *Service quality and age and gender.* Pittsburgh, PA: Psychological Service of Pittsburgh.

Hoffman, R. R.& Woods, D. D. (2011). *Simon's Slice: Five Fundamental Trade-offs That Bound The Performance Of Human Work Systems. Tenth International Conference on Naturalistic Decision Making,* Orlando, FL.

Hopkinson, G. C. & Pujari, D. (1999). A factor analytic study of the sources of meaning in hedonic consumption, *European Journal of Marketing*, 33 (3/4), 273-294

Huckman, R., Pisano, G., & Fuller, V. (2010). *JetBlue Airways: Valentine's Day 2007*, Boston: Harvard Business School.

Ingram, H. & Daskalakis, G. (2010). Measuring Quality Gaps in Hotels: The Case of Crete, *International Journal of Contemporary Hospitality Management*, 11 (1), 24-30.

Izman, G & Wan, Z. L (2011). *Memorandum Regarding Actions Needed to Minimize Long, On-Board Flight Delays. Report Number AV-2007-077, p. 8*, Washington, D.C.: Office of the Secretary of Transportation.

Jabnoun, N.,& Al-Taomimi,P. (2011). Measuring Service Quality of Travel Agents: Evidence from Northern Cyprus, *The Services Industries Journal*, 24 (3), 82-100.

Jain, S. K. & Gupta, G. (2012). Measuring Service Quality: SERVQUAL vs. SERVPERF Scales,*Vikalpa*, 29 (2), 25-37.

Jiang, H. (2010). *Dynamic Airline Scheduling And Robust Airline Schedule De-Peaking. Cambridge*, MA: Massachusetts Institute of Technology.

Juwaheer, Y. (2011). Beyond Service Fads-Meaningful Strategies for the Real World, *Sloan Management Review*, Summer, 69-77.

KAA, (2014, 10 March). *Passengers Report,* Retrieved on 12 March, 2014 from KAA website:https://www.kaa.go.ke/airports/nairobi-jomo-kenyatta-intl-airport/jomo-kenyatta-international-airport

Kagis, P. & Passa, V. (2012). Awareness of Service Charges and Its Influence on Passenger Expectations and Perceptions of Quality in Banking, *Journal of Services Marketing*, 11(2), 105-116.

Kilbourne, W., Duffy, J.A., Duffy M. & Giarchi, G.G. (2012). The Applicability of SERVQUAL in Cross-national Measurements of Health-Care Quality, *Journal of Services Marketing*, 18 (7), 524-33.

Krejcier, J.A. & Morgan, L.R. (2010). Designing Rating Scales for Effective Management in Surveys, *Survey Management and Process Quality*, 141-164.

Kumar, J., Paul,P. & Taylor, S.A. (2010). Measuring Service Quality: A Re-Examination and Extension, *Journal of Marketing*, 56, 55-67.

Larsen, A; Clausen, J., Larsen, J. & Rezanova, N.J. (2012). Disruption Management in the Airline Industry – Concepts, Models and Methods, *Computers and Operations Research*, 37, 809–821.

Lassar, W.M., Manolis, C. & Winsor, R. (2012). Service Quality Perspectives and Satisfaction in Private Banking, *Journal of Services Marketing*, 14 (3), 244-271.

Latorella, K. A. (2010). *Effects of Modality on Interrupted Flight Performance: Implications for Data Link*, HFES, 87-91.

Ling, F.I., Lin, K. & Lu, J.L. (2010). Difference in Service Quality of Cross-Strait Airlines and Its Effect on Passengers' Preferences, *Journal of Eastern Asia Society for Transportation Studies*, 6, 798-813.

Liu, B.S.C., Furrer, O. & Sudharshan, D. (2011). *The effect of culture on behavioural intentions through service quality perceptions. Rethinking Services, 40th EMAC Conference*, London, UK

Llosa, S., Chandon, J.L. & Orsingher, C. (2012). An Empirical Study of SERVQUAL's Dimensionality, *The Service Industries Journal,* 18 (2), 16-44.

Macorr Research. (2015). Retrieved October 14, 2015, from Macorr Research: http://www.macorr.com/

Magi, G., M. A. & Jalander. (2011). Contracting to Assure Supply: How to Share Demand Forecasts in an Airline, *Management Science*, 47, 629-646.

Maliga, F. A., (2010). Service Quality between Internal Passengers and Internal Suppliers in an International Airline. *International Journal of Quality and Reliability Management*, 18 (4), 371-386.

Mattila, A.S. (2010). The Role of Culture in the Service Evaluation Processes, *Journal of Service Research*, 1 (3), 250-261.

Mels, G., Christo B., and Nel, D., (1997). The Dimensions of Service Quality: the Original European Perspective Revisited, *Service Industries Journal*, 17, 173-189.

Montgomery, H., Lipshitz, R. & Brehmer, B. (2011). *How professionals make decision*, New Jersey: Lawrence Erlbaum Associates.

Mosier, K. L. & Fischer, U. M. (2011). *Informed By Knowledge: Expert Performance in Complex Situations,* New York: Taylor and Francis.

Muhoho, P (2012). Challenges of Africa Air Transportation. *Africa Aviation Journal*, 12, 04-08.

Muller, A, Abdi, K. & Hanlon, P. (2011). *Global Airlines, Competition in a Transnational Industry*. Oxford: Butterworth-Heinemann.

Naikuni, T. (2012). A Service Oriented Approach to Marketing of Services. *Africa Aviation Journal*, 10, 02-06

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). New York: McGraw-Hill.

Nantel, T. (2010). Relationship Quality in Services Selling: An Interpersonal Influence Perspective. *Journal of Marketing*, 54, July, 68-81.

Nel, A, Sunil, H. & Curry, A. (2010). Service Improvements in Public Services Using SERVQUAL. *Managing Service Quality*, 11 (6), 389-401.

Ngechu, M. (2004). *Understanding the Research Process and Methods, an Introduction to Research Methods*. Nairobi: Acts Press.

Oketunji, T. (2013). Africa Infrastructure Reliability. *Africa Management Journal*, 18, 33-37.

Omolo, J. (2013). Effects of disruptions on KQ. *Africa management Journal*, 20, 14-22.

Othman, A. T. & Owen I.C. (2011). A Catastrophe Model for Developing Service Satisfaction Strategies. *Journal of Marketing*, 56, July, 83-95.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (1998). Alternative Scales for Measuring Service Quality: A Comparative Assessment Based On Psychometric and Diagnostic Criteria. *Journal of Retailing*, 70(3), 201-29.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (2010). Refinement and Reassessment of The SERVQUAL Scale. *Journal of Retailing*, 67(4), 420-50.

Parasuraman, A., Zeithaml, V. A. & Berry, L. L. (2011). Reassessment of Expectations as a Comparison in Measuring Service Quality: Implications for Further Research. *Journal of Marketing*, 58, January, 111-24.

Patton, V. (2010). *Services Marketing Management*. New York: John Wiley and Sons.

Reinhardt, T.D. & Cook, C., K. (2011). Exploring international tourists' perceptions of hotel operations by using a modified SERVQUAL approach – a case study of Mauritius. *Managing Service Quality*, 14 (5), 350-64.

Robledo, M.A. (2011). Measuring and Managing Service Quality: Integrating Passenger Expectations. *Managing Service Quality*, 11(1), 22-31.

Rupp, N. & Holmes, G. (2012). Return on Quality: Making Service Quality Financially Accountable. *Journal of Marketing*, 59, April, 58-70.

Saravanan, A. R., & Rao, D. R. (2010). An Empirical Examination of a Model of Perceived Service Quality and Satisfaction. *Journal of Retailing*, 72 (2), 201-214.

Schmid, F., & Lindemann, M. C. (2011). International Service Variants: Airline Passenger Expectations and Perceptions of Service Quality. *Journal of Services Marketing*, 14 (3), 188-216.

Shavell, J. K. (2010). *The Effects of Schedule Disruptions on the Economics of Airline Operations*. New York: The MITRE Corporation.

Sheffi, Y. (2012). *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage,* Cambridge: MIT Press.

Sherry, L., Wang, D. & Donohue, G. (2011). Air Travel Consumer Protection: Metric for Passenger On-Time Performance. *Transportation Research Record*, 22-27.

Siber, A, M. (2011). Passenger Satisfaction, Market Share, and Profitability: Findings from Sweden. *Journal of Marketing*, 58, July, 53-66.

Simon, J. K. (2010). The Development of the Airline Industry from 1978 to 1998 – A Strategic Global Overview. *The Journal of Management Development*, 19 (6), 489-514.

Suchman, D. (2013). British Airways Plc. *International Marketing Review*, 16 (4/5), 278-91.

Sudil, G.S., Rajendran, C. & Kamalanabhan, T. J. (2010). Passenger Perceptions of Service Quality: A Critique. *Total Quality Management*, 12 (1), 111-24.

Sultan, J.D. & Simpson, G.J. (2012). Comparing Intensity and Effectiveness of Marketing Communications: Services versus Non-Services. *Journal of Advertising Research*, 61-72

Suresh C, M., Wisniewski, M., Dalrymple, J. F. & Curry, A. C. (1995). Measuring Service Quality in Local Government: The SERVQUAL Approach. *International Journal of Public Sector Management,* 8 (7), 15-20.

Taylor, A. S. (2010). An Assessment of the Relationship between Service Quality and Passenger Satisfaction in the Formation of Consumers' Purchase Intentions. *Journal of Retailing*, 70 (2), 163-178.

Teas, R. K. (2010). Expectations, Performance Evaluation and Consumer's Perception of Quality. *Journal of Marketing*, 57, 18-34.

Teodorović, D. & Guberinić, S. (2011). Optimal Dispatching Strategy on an Airline Network after a Schedule Perturbation. *European Journal of Operations Research*, 15, 178–182.

Tuncalp, J. P.(2012). Quantifying the Relationship between Airline Load Factors and Flight Cancellation Trends. *Transportation Research Record*, 2106, 39-46.

Tyler, T. (2013). Aviation Unveiled. *Aviation journal*, 162, 22-31.

Welch, A.M. & Ahamed, Y. (2010). Malaysia Airlines' Corporate Vision and Service Quality Strategy. *Managing Service Quality,* 4 (6), 11-15.

Westrum, R. (2006). A *Typology of Resilience Situations, Resilience Engineering: Concepts and Precepts,* Ashgate, Farnharm, UK, 55-65.

Westrum, V.A. (2011). Consumer Perceptions of Price, Quality and Value: A Means-End Model and Synthesis of Evidence. *Journal of Marketing*, 52, July, 2-22.

Wirtz, J. & Johnston, R. (2010). Singapore Airlines: What It Takes To Sustain Service Excellence – A Senior Management Perspective. *Managing Service Quality*, 13 (1), 10-19.

Yan, S. & Yang, D. (2010) A Decision Support Framework for Handling Schedule Perturbation. *Transportation Research*, 30, 405–419.

Yavas, P, D., Zeithaml,V.A., Berry L.L. & Parasuraman, A. (1988). Communication and Control Processes in the Delivery of Service Quality. *Journal of Marketing*, 52, April, 35-48.

Yu, G. & Qi, X. (2011). *Disruption Management: Frameworks, Models and Applications.* Singapore: World Scientific Publishing.

APPENDICES

Appendix I: Letter of Introduction

Faith Mugai

MCOM Candidate

Strathmore University

12 February 2014

The Human Resource Manager

(Airline Name *** and Authorities)

Nairobi, Kenya.

Dear Madam/ Sir,

RE: Request to undertake academic research project.

I am a student at Strathmore University, Nairobi pursuing a Master of Commerce (MCOM) degree. I am undertaking a research in partial fulfilment of the stated degree.

The research title is An Assessment of the Nature and Magnitude of Airline Disruptions on Passengers' Perception and Expectations of Service Quality: A Case of Jomo Kenyatta International Airport. Data collection is aimed at obtaining data about the: passenger's demographic characteristics; passenger's experience of disruption frequency and types; passenger's expectation and perception of airline service quality during disruptions at JKIA.

The information collected will be treated with outmost confidentiality and is for academic purpose only. The findings and recommendations of the research will be availed to you upon request on completion of the research.

Thanks for your cooperation and assistance.

Yours sincerely,

Signed

Faith Mugai

Student I.D 056452

NB: Kindly find enclosed a copy of the questionnaire.

Appendix II: Questionnaire for Passengers

Purpose of the questionnaire

This questionnaire is to enable the researcher collect data on the above mentioned topic as part of her study for Masters in Commerce course.

The information obtained here will be used for the purposes of the research only. The researcher appeals to you to fill the questionnaire objectively and with honesty. Your answers will be treated with confidence.

Please answer the following question.

1. Have you ever experienced an airline disruption? If yes, please continue with Section 1 and If No, thank you for your time.

    Yes ( )   No ( )

    Section I: Personal Background of respondents (please cross where appropriate).

2. Kindly indicate your age group?

    Less than 25 years: (   )   25-40 years: (   )   Greater than 40 years: (   )

3. What's your gender?

    Male: ( )   Female: ( )

4. What's your marital status?

    Single (   )   Married ( )

5. What is your race of origin?

    African ( )   Asian ( ) European ( ) American   (   )   others   (please   specify)
    _____

6. Please indicate your highest education level.

    Primary and below ( ) High School: ( ) College Graduate: ( )   Post graduate: ( )

7. What is your current occupation?

    Employed   ( )   Unemployed ( ) Business man (   ) Student ( )   others
    (please specify) _____

8. What's your occupation status?

    Low level employees ( ) Middle level Management ( )   High level Management ( )

    Section II: Respondent's Airlines disruption experience

9. Please indicate the type of airline disruption you have experienced. (Please cross where appropriately)

Airline disruption type	Yes	No
Flight Cancelation		
Flight Delay (time)		
Others		

10. Kindly state how many times you have experienced a disruption with each of these airlines at JKIA in the last one year

Airline	Frequency					
	Never	Rarely	Sometimes	Many times	Highly	Extremely High
Kenya Airways and KLM						
Fly540						
Emirates						
Ethiopian Airways						
British Airways						
South African Airways						
Qatar Airways						
Turkish Airlines						
Etihad Airways						
Rwandair						

11. What kind of loss did you suffer during the last disruption you experienced? Tick as appropriate. Multiple responses possible

Time (   ) Monetary: (   )   Emotional (   )

12. Do you perceive the last disruption you experienced to be within the control of airline management?

Yes (   ) No (   )
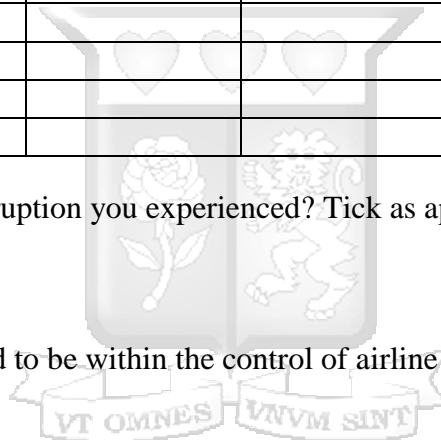
Section III: Passengers expectations of airlines service quality during the last disruptions at J.K.I.A.

13. Expectations Regarding Disruptions: The following statements deal with the expectations of service experienced in airlines during disruptions. Please, indicate the extent to which these statements reflect your expectations of service actually received from airlines at J.K.I.A during disruptions. (Cross where appropriate). You should rank each statement as follows: Strongly Disagree = 1, Disagree =2, Neutral=3, Agree=4, Strongly Agree=5

		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
	Service Quality Statement					
	Tangibles					
1	I expect an ideal airline to have modern equipment regardless of the disruptions.					
2	I expect the physical facilities such as check-in and aircraft (shelves, counters, computers, and cabin) to be visually appealing regardless of the disruptions.					
3	I expect the airline physical environment of the check-in and aircraft to be clean regardless of the disruptions.					
4	I expect airline employees to be well dressed and appear neat regardless of the disruptions.					
	Reliability					
5	I expect airlines not to have frequent delays.					
6	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.					
7	I expect employees to be knowledgeable to answer my questions regardless of the disruptions.					
8	I expect to be given prompt service by airline employees regardless of the disruptions.					

		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
9	I expect airline employees operating hours to be convenient to me regardless of the disruptions.					
	Empathy					
10	I expect when I have a problem, employees to show a sincere interest in solving it regardless of the disruptions.					
11	I expect airline employees to never be too busy to respond to my requests regardless of the disruptions.					
12	I expect the airline employees to understand my specific needs regardless of the disruptions.					
13	I expect that there be enough employees to give me individualized attention regardless of the disruptions.					
14	I expect airlines to have my best interest at heart regardless of the disruptions.					
15	I expect airline employees to give me personalized service regardless of the disruptions.					
	Assurance					
16	I expect employees of airlines to convey information about disruptions to me on a timely manner regardless of the disruptions.					
17	I expect employees of airlines to relay information to me in an appropriate language regardless of the disruptions.					
18	I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.					
19	I expect airline to keep my booking records accurately regardless of the disruptions.					
20	I expect to feel safe while transacting with the airline employees during disruptions.					
21	I expect the behaviour of the employees to be the one to instil confidence in me regardless of the disruptions.					
	Responsiveness					

		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
22	I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions.					
23	I expect airline employees to perform the service right the first time regardless of the disruptions.					
24	I expect airline employees to provide their services at the time they promise to do so regardless of the disruptions.					
25	I expect employees to be polite to me regardless of the disruptions.					
26	I expect to be compensated by airlines during delays.					
27	I expect airline employees to always be willing to help me regardless of the disruptions.					

Section IV: Respondents Perceptions of airlines service quality during disruptions at J.K.I.A.

14. Perceptions Regarding Disruptions: The following statements deal with the perceptions of service experienced in airlines during disruptions. Please, indicate the extent to which these statements reflect your perception of service actually received from airlines at J.K.I.A during disruptions. (Cross where appropriate). You should rank each statement as follows: Strongly Disagree = 1, Disagree =2, Neutral=3, Agree=4, Strongly Agree=5

	Service Quality Statement		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
	Tangibles						
1	The airline had modern equipment to minimize the disruptions.						
2	The airline physical facilities- check-in and aircraft (shelves, counters, computers, and cabin) were visually appealing during disruptions.						
3	Airline employees were well dressed and appeared neat during disruptions.						
4	The airline physical environment of the check-in and aircraft was clean during disruptions.						

	Service Quality Statement		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
	Reliability						
5	Airlines had no frequent delays.						
6	Airline employees made information easily obtainable by the passengers during disruptions.						
7	Employees were knowledgeable to answer my questions during disruptions.						
8	I was given prompt service by airline employees during disruptions.						
9	Airline employees operating hours should be convenient to me during disruptions.						
	Empathy						
10	Airlines had no frequent delays.						
11	Airline employees made information easily obtainable by the passengers during disruptions.						
12	Employees were knowledgeable to answer my questions during disruptions.						
13	I was given prompt service by airline employees during disruptions.						
14	Airline employees operating hours should be convenient to me during disruptions.						
15	Airlines had no frequent delays.						
	Assurance						
16	Employees of airlines conveyed information about disruptions to me on a timely manner.						
17	Employees of airlines relayed information about disruptions to me in an appropriate language.						
18	Employees of airlines relayed quality and comprehensive information about disruptions to me.						
19	Airlines kept my records accurately during disruptions.						
20	I felt safe while transacting with the airline employees during disruptions.						

	Service Quality Statement		Strongly Disagree 1	Disagree 2	Somewhat Agree 3	Agree 4	Strongly Agree 5
21	The behaviour of the employees was one that instilled confidence in me during disruptions.						
	Responsiveness						
22	When employees promised to do something by a certain time, they did so during disruptions.						
23	Airline employees performed the service right the first time during disruptions.						
24	Airline employees provided their services at the time they promised to do so during disruptions.						
25	Airline employees were polite to me regardless of the disruptions.						
26	I was compensated by airlines during delays.						
27	Airline employees were always willing to help me during disruptions.						

15. Indicate how important are the following strategies used by airlines to mitigate disruptions enhances your perception and expectation of service quality offered by the airlines during disruptions. Please tick where appropriate.

Strategy	Important	Not Important
Reducing flight schedules during disruptions		
Use of state of the art forecasting systems		
Staff on how to effectively handle disruptions		
Rebooking them on other airlines		
Compensated for the delay		
Used appropriate system redundancy during disruptions		
Pre-treating runways overnight to eliminate closures		
Advising passengers before they left their homes through short messages, emails and phone calls		
Rescheduling delayed operations		

Thank you for completing the questionnaire.

Appendix III: Questionnaire to be filled by the Management of Airlines

Purpose of the questionnaire

This questionnaire is to enable the researcher collect data on the above mentioned topic as part of her study for a Masters in Commerce course.

The information obtained here will be used for the purposes of the research only. The researcher appeals to you to fill the questionnaire objectively and with honesty. Your answers will be treated with confidence.

Please answer the following questions.
  Section I: Personal Background of respondents.
1. Name of the airline (Optional)…..

2. For how long has your airline operated from JKIA?
   1 year ( ) less than 5 years ( )   more than 5 years (   ) Other (please specify)
   …..
   ....

  Section II: Respondent's Airlines disruption experience
3. Has your airline experienced an airline disruption in the last one year?
   Yes ( )   No ( )

4. If yes, please indicate the type of airline disruption your airline has experienced. (Please cross where appropriately)

Airline disruption type	Yes	No
Flight Cancelation		
Flight delay		
Others		

5. What were the causes of the last disruption that your airline experienced? Tick as appropriate. (Multiple answers possible)

Maintenance problems	
Crew problems	
Delayed aircraft cleaning	
Baggage loading delays	
Fuelling problems	
Bad/extreme weather conditions	
Problems with National Aviation Systems	
Insecurity	
Fire outbreak	

Others(please specify)……………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………

……
………………………………………………………………………………………

6. Kindly state how often your airline experienced disruptions at JKIA in the last one year

Airline	Frequency				
	Never	Rarely	Sometimes	Many times	Very many times
	1	2	3	4	5
Kenya Airways and KLM					
Fly540					
Emirates					
Ethiopian Airways					
British Airways					
South African Airways					
Qatar Airways					
Turkish Airlines					
Etihad Airways					
Rwandair					

7. What kind of loss did your airline suffer during these disruptions?

    Time ( ) Monetary: ( )

8. For the disruptions experienced above, were they within your control?

    Yes ( )   No ( )

9. How did your airline respond to the last disruptions? Tick as appropriate. Rank them as follows: 1-Never; 2-Rarely; 3 Often; 4 Very Often; 5 All the time

Factor	Rank					
	1	2	3	4	5	N/A
Used of state of the art forecasting systems such as SABRE airline management systems during disruption						
Collaborated with other departments and authorities during disruptions						
Implemented robust contingency protocols during disruptions						
Mitigating potential system weaknesses during disruptions						
Implemented appropriate system redundancies during disruptions						
Continuously train employees on how to deal with disruptions						
Overnight pre-treating of runways to eliminate closures						
Advised passengers before they leave their homes through short messages, emails and phone calls						
Deployed additional employees during disruptions						
Management apologised to passengers during disruptions						
Consistently provided updates of the disruptions to passengers						
Allowed passengers to access the lounge facilities during disruptions						
Aligned all participants to adhere to clear roles and responsibilities during disruptions						
Rescheduled the delayed operations						
Aligned adherence to the maintenance requirements of different aircraft						

Factor	Rank					
	1	2	3	4	5	N/A
Followed the regulations that govern the work rules of the crew on different flights						
Airlines to complied with air traffic control regulations and programs that manage traffic in the airspace and at airports						
Allowed passengers rebooking on other airlines during disruptions						
Offered gift cards to delayed travellers and discount on future flights						
Made hotel bookings and transfer during disruptions						
Cut schedules during disruptions						
Reduced fares during disruptions						
Laid off employees during disruptions						
Cut salaries and benefits during disruptions						

Others(please specify)…………………………………………………………………………………………
………
………
………
………………………………………………………………………………………………..

10. Do you work with authorities to mitigate the effects of disruptions at JKIA?

    Yes ( )   No ( )

11. If yes, how do you work with authorities in the airline industry to respond to these disruptions?

Expanding the airports and improving the air traffic control systems to, in effect, eliminate the capacity scarcity	
Comply with air traffic control regulations and programs that manage traffic in the airspace and at airports.	
Coordinated responses by airports and airlines to disruptions	
Joined research and development on ways to mitigate disruptions	
Holding consultative forums for developing the policies to guide during disruptions	
Having joint facilities with the authorities like offices and equipment for rapid response during disruptions	
Carrying out joint security operation to mitigate effects of disruptions	

Others(please specify)…………………………………………………………………………………………
………
………
………
………………………………………………………………………………………….....................................
....