AN ASSESSMENT OF THE EFFECTS OF AIRLINE FLIGHT DISRUPTIONS ON PASSENGER EXPECTATION AND PERCEPTION OF SERVICE QUALITY: A CASE OF ETHIOPIAN AIRLINES PASSENGER SERVICES

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A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS OF THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN MANAGEMENT

FEBRUARY 2022

ADDIS ABABA, ETHIOPIA

DECLARATION

I, the undersigned, announce that this thesis authorized is my unique work; under the leadership and recommendation of the research advisor Dr. Zelalem Gebretsadiq and those essential materials used for the study have been appropriately documented. It is available for the partial fulfilment of the position of MA in business administration in management. This study has not been submitted for any degree in this university or any other association.

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STATEMENT OF CERTIFICATE

This is to confirm that the thesis organized by **Wondwossen Beyene**, entitled "**An assessment of the effects of airline disruptions on passenger perception and expectation of service quality: A case of Ethiopian Airlines Passenger Services"** submitted in partial fulfilment of the necessities for the degree of Master of Business Administration in Management and encounters the recognized standards with respect to novelty and excellence.

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External Examiner: _____, Signature: _____, Date: _____

Internal Examiner: _____, Signature: _____, Date: _____

Acronyms

EAL	Ethiopian Airlines
SERVQUAL	Service Quality Dimension
SPSS	Statistical Package for Social Science
UAE	United Arab Emirates
US	United States
VIF	Variance Inflation Factor
SERVPERF	Service Performance Model
EU	European Union
PAX	Passenger
EUR	Euro
ILS	Israeli New Shekel
SAR	Saudi Riyal
USD	United States Dollar

Acknowledgment

I appreciate everyone who has put a footprint in any stage of this study. My special thanks go to my family, colleagues, and friends: Biruk Beyene, Surafel Saketa, Bsieit Tesfaye, Biniyam Demissie, Tigist Eshetu, Yemesrach Alemayehu, Abel Yifru, Yosef Belay, Yetinayet Mulugeta, Mesfin Enkobahiry, Girum Abebe, Melake Hailu, Tewodros Tadesse, Selamawit Legesse, Surafel Worku, Meron Tsegaye and others who helped me in the data collection and advisory. I also like to thank my advisor Dr Zelalem Gebretsadiq for his advisory and comments.

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Abstract

Passenger perception and expectation in EAL services is studied from different contexts however there is not much said from flight disruption perspective. The two common forms of disruption delays and cancellations are caused by external and internal factors. Recently the outbreak of COVID-19 is the major cause for both delays and cancellations. The impact of disruption on passengers can extend to huge consequences in terms of time, monetary cost, social and psychological disorders. EAL takes both preventive and reactive measures while handling disruptions. These solutions require the involvement of external parties: airport, transport, immigration, and other authorities in Ethiopia as well as other countries. The findings of the study indicated that the perception of the respondents slightly exceeds their expectation leaving much space for improvement. Based on the firsthand information collected through questionnaire, the variables Tangibles, Reliability, Responsiveness, Empathy and Assurance impact the service quality perception of customers during disruption.

CHAPTER ONE

1. INTRODUCTION

1.1 Background of the Study

The Aviation industry can be defined as those actions that are openly associated to the transporting of people and goods by air from one origin to another (Chikwendu, 2012). Aviation is one of the most ultimate aspects that influence international development considerably in the new century. It is deliberated as the "global connectivity that ultimately strengthens productivity and economic growth as a whole" (Perovic, 2013).

Ethiopian Airlines has served the country and the world especially the continent Africa for more than 75 years. Throughout these periods, it has grown to becoming the largest African Airlines and a leader in the aviation industry: technology leadership, network broadening, customer service and aviation consulting (Ethiopian airlines, 2018).

According to Parasuraman et al., (2011) passengers' perceptions of service quality are a function of the modification among facility anticipated and passenger observations of the real facility transported. 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 the effects of disruptions on service quality (Cunningham et al., 2012).

The Airlines operating business environment is explained as VUCA (Volatile, Uncertain, Complex and Ambiguous). In addition, it is known for stiff competition. Ethiopian airline is also challenged by the heavy competition against the giant airlines from Europe, Middle East, Africa, and the rest of the world. Without sound strategies, management and organization of resources, the existing achievements were less possible, and the future could be at risk.

Airline Service Quality is a crucial differentiator among the rival airlines. It is particularly very serious in an exceedingly modest situation such as that of the Ethiopian Airlines functioning atmosphere. Consequently, Service Quality upgrading is an important problem that regulates the very existence of the airline itself (Lidiya, 2016).

Based on a preliminary survey done in 2018 on customers of the airlines, delayed arrival, missing baggage, deviation from schedule like conferences, increased cost, missing onward flights among many others are mentioned associated with service disruption.

This investigation is inspired by the need to measure the effects of disruptions on customers' Expectations and actual experience or perception of the Airline's service upon occurrence of the incidents which are key elements in defining customer satisfaction and service quality.

1.2 Statement of the Problem

Airline schedules are usually subject to disruptions due to adverse weather conditions, aircraft mechanical problems, 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).

According to Ethiopian airlines (2018) preliminary survey on customers of the airlines revealed that they face delayed arrival, missing baggage, deviation from schedule like conferences, increased cost, missing onward connecting flights among many others associated with service disruption.

According to Guitteye (2012) in most airlines operating in Africa were not passenger focused. In addition, he noted that disruptions had little effect on service quality a phenomenon qualified to lack of consumer awareness, low expectation, and the lack of competition due to government bureaucracy and support. He 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. At the same time, Shavell (2010) established that airline disruptions produce a lower service quality and higher costs since disruptions require more block time, more aircraft, more crew, more fuel, more ground time, and more equipment thus always pushing costs up. The effect of these disruptions on passengers' perceptions and prospects of package excellence has received little attention.

Currently there are an average of 20,000 passengers using EAL every day. Disruptions happen due to adverse weather conditions, aircraft mechanical problems, and security reasons among others. Continued disruptions lead out of competition and have detrimental impact on customer service. 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 Ethiopian context.

Therefore, this study aims to fill this gap by investigating the major causes that create flight disruptions and pursuing the passengers' perceptions and expectations of service quality related to flight disruption of the airline.

1.3 Objective of the Study

The general objective of the study was to survey the effects of flight disruptions on passengers' perceptions and expectations of the service quality of Ethiopian Airlines.

1.3.1 Specific Objectives

1. To identify the type and causes of disruptions experienced by EAL and passengers.
2. To analyze the strategies applied by the airlines in replying to the disruptions experienced.
3. To inspect how the flight disruptions affect passengers' perceptions and outlooks of service excellence in EAL.
4. To make a distinction on how airline strategies can improve passengers' perception of service quality.

1.4 Research Question

The study was guided by the following research questions:

1. What types and reasons of flight disruptions do EAL and its passengers experience?
2. What strategies do the airlines employ in answering the disruptions?
3. How do disruptions disturb passengers' perceptions and expectations of the service quality of EAL?
4. How do the airlines' strategies improve passengers' perceptions of its service quality?

1.5 Significance of the Study

The findings of this study were presented to designated Ethiopian airline customer service management members.

It is expected to create awareness into how service disruption affects consumers' perception and expectations and how the airlines can advance the service quality in line with customers' needs. This might lead to the development of more actual solutions and strategies to handle the disruptions. Effective service recovery and disruption management create customer loyalty which leads to increased profitability.

The study findings also contribute to the global information of aviation in terms of stressing the effect of airline disruptions on service quality in developing countries. It serves as a secondary data source in causes and frequency of disruptions in developing countries and on actual strategies to address flight service disruptions.

1.6. Scope of the Study

The study sought to unveil the impact of airline disruptions on service quality. In view of that, the researcher classified the types and reasons of the airline disruptions and observe the consequence of each type of disruptions on service excellence. The study has also assessed how the airlines is responding to the disruptions. The study focused on Ethiopian Airlines passenger services targeting passengers and employees of the airline.

1.7 Organization of the Study

The final study was organized by five chapters. The first chapter deals with introductory parts of the research which comprise introduction, a background of the study, statement of the problem, objectives, significance, and scope of the study. The second chapter holds the literature part which includes a theoretical review as well as a review of previous studies falling under the scope of the study. The third chapter targeted the research methods and design on how the data sources are determined selected, analyzed, and presented using different techniques. In the fourth Chapter facts and figures obtained from both primary and secondary sources were presented, discussed, and analyzed. Based on the result of fourth chapter, a conclusion and possible recommendations were proposed in the fifth chapter.

CHAPTER TWO

2. RELATED LITERATURE REVIEW

2.1 Introduction

This chapter deals with a review of the related literature. Under this section: theories on service quality, airlines operating to from Ethiopia, causes of airline disruptions, types of airline disruptions, effects of disruptions on service quality, how airlines are responding to disruptions, conceptual framework and the operationalization of variables are explained.

2.2 Theories on Service Quality

Based on Lovelock & Wirtz (2007), the terms "quality" and "satisfaction" are used interchangeably, and some researchers believe that perceived service quality is just one component of customer satisfaction, which also reflects an individual's personal and situational factors.

Service excellence is a form of attitude and consequences from a contrast of expectations to the perception of performance received (Mosahab, Mahamad, and Ramayah, 2010). Service quality can be demarcated as the customer's personal practice with the service provider. And it is playing a vigorous role in the contemporary competitive environment where there is no other way for the service companies to differentiate themselves other than the quality of the service provided by them (Irulappan and Roseline, 2014).

According to Danjuma and Rasli (2012), service quality has been an issue of considerable debate and many researchers have agreed that it is an evasive concept. According to Jain and Gupta, (2010) quality in services might be not easy due to the imperceptible nature of the service offering. Regardless of substantial work carried out around service quality, there is no agreement yet with regards to which measurement scales is more appropriate. The service literature incorporates several models, the most known being SERVQUAL and SERVPERF. Several studies have tried to appraise the dominance of the two scales with no decisive confirmation as to which one is a better scale. However, over the years, SERVQUAL has become known as the most popular consistent measure of service quality (Hoffman, and Woods, 2011).

2.2.1 Relevance of SERVEQUAL Theory to Airline Industry

Many of the research on service quality have been carried out within the structure of broadly acknowledged service quality model (SERVQUAL instrument) adopted by extensive research of Parasuraman *et al.,* (1998, 2010). Several researchers have used these items scale to study service quality in different area of the services industry. In the airline industry, the study on service quality using SERVQUAL model has been carried out for example by (Bahia and Nantel, 2010); (Lassar et al., 2012); (Duncan and Elliott, 2012); and (Arasli et al., 2012).

Duncan and Elliot, (2012) investigated the association between passenger service quality and financial performance in Australian airlines. They found that there was significant correlation between financial performance and passenger service quality scores. Jabnoun and Al-Taomimi, (2011) inspected service quality at UAE Airlines using SERVQUAL model and incorporated thirty items in the five scopes of SERVQUAL. When the arranged instrument tested for reliability and validity, they found that the instrument had only three dimensions.

Arasli *et al.,* (2012) planned service quality approaching of Greek airline passengers using SERVQUAL model. They, however, extend the study by looking at the association between service quality, passenger satisfaction and positive word of mouth. They found that the anticipation of airline passengers was not met an enormous 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 influential impact on the positive expression of mouth.

2.2.2 SERVPREF Model

SERVPREF model is a tool used to quantify service excellence and client satisfaction. It consists of similar domains used in the SERVQUAL model. Cronin &Taylor (2012) developed this model to study four service sectors: banking, pest control, dry cleaning, and fast food. Its structure is made upon the performance theory and is an adjustment of the SERVQUAL model.

The only variation among SERVQUAL and SERVPREF is that the SERVPREF does not take into consideration of customer expectations. It carries into play only customer perceptions of service performance. As a result, this model does not have a verification scale, which is the gap between expectations and perceived performance of service. It has only one part, which is the alleged achievement of service. In this instrument, customers rate their perceptions of performance of the same aspect that are sheltered in the SERVQUAL model. The five domains, tangibles, reliability, responsiveness, assurance, and empathy recognized in the SERVQUAL model are evenly applicable to the SERVPREF model. SERVPREF can award managers with a synopsis of normally

service fineness score, which can then be plotted in relation to time and specific customer segmentations associated to consumer characteristics, for example, demographic subcategories and individual constituencies (Cronin and Taylor, 2012).

2.3 Empirical Review

This part confers category and causes of airline disruptions, how EAL manages relations with different stakeholders to alleviate disruptions and strategies airlines employ in mitigating the disruptions. This section also presents the effects of flight service disruptions on perceptions and expectations of passengers on service quality.

2.3.1 Airlines Industry

According to Rupp and Holmes, (2012) the utilization of commercial aviation has grown noticeably over the last few decades, it is estimated to be more than seventy-fold from the time when the first jet airliner flew in 1949.The feature for rapid growth is attributed to several factors: globalization, bilateral agreements, air safety and airline rivalry leading to reduced charges. Simons (2010) states that increasing disposable income and excellence of life in several parts of the world create self-confidence that more people from these areas to travel and explore opportunities overseas. Secondly, adjustment on aviation laws and bilateral and open-sky agreements between governments has opened new markets for airlines, which make travel simple and economical. Third, demand increasing because of growing confidence in aviation as a safe mode of travel. Fourth, enhanced competence and growing rivalry have reduced world airfares and the cost of travel. Lastly, globalization has improved the regular distance voyaged, as people do business in nations that now have enhanced political and social atmospheres. Airline operation at Bole International Airport is dominated by Ethiopian Airlines with hundreds of flights daily and followed by other carriers as shown in table 2.1 below.

Table 2.1 Airlines operations at Bole International Airport

No	Airlines	Two Letter Codes
1	Ethiopian Airlines	ET
2	Emirates	EK
3	Kenya Airlines	KQ
4	Egypt Air	MS
5	Qatar Airways	QR
6	Fly Dubai	FZ
7	Turkish Airlines	TK
8	Jazeera	J9

Source: - (EAL, 2021)

2.3.2 Types of Flight Service Disruptions

According to Ball *et al.*, (2010) commercial airlines operate according to an available slot. A schedule is in general set from revenue optimization perspective and all the airline resources should be owed to the scheduled slot with the minimum possible cost. In an ideal environment, the airline doesn't face any hinderance to operate the schedule as planned; the airline gets its return. However, in the actual world, there are several internal and external factors, which can disturb the smooth schedule execution (Ibid). The types of disruptions include flight delays and flight cancellations as discussed below.

2.3.2.1 Flight Delays

With the fast expansion of the civil aviation industry, airspace has become more and more jam-packed. This congestion causes gradually more frequent suspensions in most major airports globally. These restrictions impact airports, airlines, and passengers. From 2007 to 2017, the annual flights in China constantly increased from 3.65 million to 10.83 million, with an average increasing rate of approximately 12.2% in the past five years. Meanwhile, the rate of inbound flight through time decreased from 83.19% in 2007 to 71.67% in 2017. The annual cost of flight delays in China was predictable to be more than $7.4 billion. Such high economic costs of delay enforce delay causal factor analysis and delay-reduction strategies (Shaowu Cheng *et al.*, 2019).

According to Teodorović, D. & Guberinić, S. (2011) delays are the mainly visible confirmation of the consequence of disorder on the airlines' service excellence. Generally, each of these consequences result in aircraft and crews being out of planned schedules. Suchman, (2013) also adds that passengers are inconvenienced as arrivals are tardy and planned connections are missed. Consequently, an airline may be liable for the outlay of option shipping, a place to wait, food and, if the suspension is necessarily extended, a cash compensation to reward the passenger for any trouble, to improve the service quality and make good impression with the appropriate service recovery.

2.3.2.2 Flight Cancelations

A flight cancellation happens when the airline decides not to operate that particular flight segment for compelling reasons. If a flight is late, passengers would be able to fly once the problem is resolved. If the flight was canceled instead, passengers on the original flight would only be able to travel if seats were obtainable on later flights or other airlines (Shavell, 2010).

2.3.4 Service Quality

Chen and Chang, (2005) advocates that satisfaction is the post-purchase assessment of products or services taking into reflection the expectations. Researchers are separated over the experience of

service excellence and satisfaction. Whilst some consider service quality leads to fulfillment, others think otherwise. The studies of many researchers propose service excellence leads to customer satisfaction. To attain a high intensity of customer pleasure, they propose that a high level of service quality should be distributed by the service supplier as service quality is on average considered a precursor of customer satisfaction (DU and Ezenaw, 2012). As service quality gets better, the probability of client fulfilment increases. Quality was only one of much extent on which pleasure was based; satisfaction was also one potential pressure on future quality insight (Clemes, 2008). Cronin and Taylor (2012) declared that consumer satisfaction appeared to exert stronger pressure on purchase intent than service quality and accomplished that the strategic importance of service organizations should focus on total customer fulfillment programs.

2.3.5 Effects of Disruptions on Service Quality

Rendering to Ashford and Wright, (2012) disruptions are challenging because the airlines can manage only a few factors in the web of harms to achieve a viable advantage. Furthermore, even in these areas, the capability to plan can be limited. Regulations principally determine crew availability, airport hours, flying routes, and maintenance constraints. This departs only a few areas where airlines can recover 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 considerate is detecting problems early and preventing their recurrence and disturbance of the plan.

The on-time performance of the airline's calendar is a key factor in maintaining existing passenger pleasure and attracting new ones. However, flight schedules are often subjected to abnormality. Due to the tight link among airlines' resources, these delays could noticeably spread over time and space if not the proper recovery measures are taken (Mueller, et al., 2012).

2.3.6 How Airlines Respond to Disruptions

In excessive disruptive events, to endure in business airlines may be required 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 practiced major disruptions that impacted on passenger demand, revenue, average fare, and average yield (revenue per seat mile). At that time, most domestic airlines consider significant events such as cutting capacity, lowering fares, and discharging employees react to these market changes (Barber and Lyon, 2012).

Most of the legacy carriers including EAL rely on good amount of the transit traffic in which the passenger takes multiple connecting flights to reach the destination in addition to the point to point.

Therefore, a disruption on one flight may result in rolling disruption on other flights too. According to Yi Su et al., (2021), Flight service recovery comprises either of the below operations. (1) Delaying flights. The departure time of affected flights and related flights may be delayed. (2) Cancelling flights. During recovery, if the allocated resources to carry out a flight are not feasible, or if the flight can take place but the delays would exceed a limit, the flight is cancelled. As flight cancellation incurs high costs, this operation is usually the last recovery option for airlines. (3) Swapping resources (rerouting). When aircraft or crew members are not prepared for the next flight, other aircraft, or crew available in the same airport can substitute for the original ones to carry out the flight. The recovered aircraft or crew is then reallocated to other flights when available. (4) Using reserved resources (aircraft and crew). Reserved resources are available in airports and do not perform any flight tasks. (5) Deadheading and ferrying. Deadheading means that the crew is transported to another airport as passengers, whereas ferrying means that an aircraft is assigned to an unscheduled flight without passengers. Given the high costs incurred by these operations, they are rarely adopted. (6) Speed controlling. Various studies have recently addressed speed controlling as a recovery operation that modifies the flight time to reduce the impact of a disruption and its corresponding delay. (7) Passenger reallocation. If itineraries are disrupted, passengers can be reallocated to itineraries with the same origin and destination.

When preparing the flight schedule, several objectives are measured by the airline. For instance, the airline must reduce the deviation from the intended schedule by minimizing flight delays and cancellations. In addition, it must not only adhere to the maintenance requirements of different aircraft at the right time, but also follow the system that oversee the work rules of the crew on different flights. Furthermore, the airline must comply with air traffic control systems and programs that manage traffic in the airspace and at airports. Finally, 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 airlines including EAL. It involves one or more of personal apology from the captain and senior managers, lounge access, cards offering delayed travelers a discount on future flights, hotel bookings and transfer, and rebooking of the next flight (Barber and Lyon, 2012).

Ethiopian Airlines service recovery compensation differs by point of commencement (POC) or region. Table 2.2 describes flight service disruption compensation by region.

Table 2.2: - Ethiopian Flight Service Disruption Compensation

Major Passenger protection rights	Applicability	Irregularity Type	Scope	Compensation Amount
EU-Regulation	From Europe	Flight cancellation If PAX is not notified about the flight cancellation **14 days** ahead of the flight date	For flights less than 1500km	EUR250
			For all intra-Community flights of more than 1500 Km and of all other flights between 1500 and 3500 km	EUR400
			All flights not falling under	EUR600
		Delay	≥ Two hrs. delay at destination for flights less than 1500km	EUR250
			≥ Three hrs. delay for all intra-Community flights of more than 1500 Km and of all other flights between 1500 and 3500 km	EUR400
			≥ Four hrs. in the case of all flights not falling under	EUR600
		Denied Boarding	Flights less than 1500km	EUR250
			All intra-Community flights of more than 1500 Km and of all other flights between 1500 and 3500 km	EUR400
			All flights not falling under	EUR600
Israel Passengers right legislation	To and From Israel	For flight delay more than eight hrs.	Flights less than 2,000km	ILS 1,250(USD310)
			Flights greater than 4,500km	ILS 3,000(USD755)
Consumer Protection Regulation of Saudi	From Saudi	For Flight delay more than6hrs	Per hour delay	SAR300/hr. delay that doesn't exceed SAR3000.
		Flight cancellation If PAX is not notified about the flight cancellation **14 days** ahead of the flight date		SAR300/hr. delay that doesn't exceed SAR3000

Source: - (EAL, 2021)

2.3.6.1 Prevention of Disruptions

It is certainly possible to minimize the degree of disruption from an incident. The researcher is not suggesting that the event itself can always be avoided (as much as airport and airline management would certainly like that power), but rather that the severe 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 guarantee operational stability (Tayler, 2010).

2.3.6.2 Managing Disruptions

Once a disrupting event is experienced, the airlines with its stakeholders together should be able to effectively manage it. Incident or crisis management protocols should be executed, unforeseen event plans need to be followed, additional employees may need to be organized and all participants

must stick to clear roles and everyday jobs. Perhaps the necessary collaboration to manage and address the situation is most important. Major airports are complex webs of operational and non-operational stakeholders. It is uncommon that interference of any outcomes can be managed by just one stakeholder alone (Mueller *et al.*, 2011).

Airports, airlines, and other stakeholders must be organized to work together to manage the event and maximize operational stability. Proactively canceling a flight when disruption is threatened can avoid stranding passengers from a flight that might otherwise be canceled during an event (Shavell, 2010). Airlines have senior managers and captains apologize to passengers during disruption. There is a consistent update of the delay plus passenger has access to lounge facilities as practiced by Singapore airline (Tayler, 2010).

2.4 Recovery from Disruptions

Consequently, much effort and attention are given to managing proceedings, that the third component of operational resilience is often disregarded. However just as there must be emergency plans for how to succeed a disruptive event, there should also be pure plans for how to transition the airport and airline community back to business-as-usual. Response protocols should be progressively stood down and healthy communications and situational awareness should ensure key operational issues have all been addressed.

The trade-off preparation tools can help to detect the best order for rearranging delayed operations. And then becomes an irreplaceable opportunity that is often exploited: the ‘wash-up’ or ‘hot wash’ as many calls it – the alliance of what occurred, how well the airline and airport community replied, and the lessons learned. Resilient airports and airlines take full benefit of the chance to learn from practice, refine their work process and be better organized for the next event (Tyler, 2010).

When recovering the schedule, several outcomes are anticipated by the airline. For example, the airline must diminish the nonconformity from the deliberate agenda by diminishing flight delays, terminations, and crew swapping. In addition, it must not only adhere to upkeep requirements of unlike aircraft at the right time, but also follow the rules that govern the work rules of the squad on different flights. Additionally, the airline must comply with air traffic regulator rules and programs that manage traffic in the airspace and at airports. Finally, it must minimize the total cost of recurrence by evading expensive conclusions such as flight cancellations, calling extra crew, and passenger rebooking on other airlines (Hoffman and Woods, 2011).

Other planned explanations to the airline delay problem seem to have a common theme: eradicate the problem by intensifying the airports and improving the air traffic control schemes to, in effect,

eliminate the capacity shortage. For example, current popular suggestions include the expenditure of billions of dollars to add runways and enlarge other physical capacity (such as gates) at airports to accommodate more synchronized flight operations, and to recover air traffic control systems. (Ashford, 2010).

2.5 Conceptual Framework

The SERVQUAL Model analysis of quality, developed by Zeithaml, Bitner, and Parasuraman (1985,1988,1991,2010), is used to examine the effect of flight service disruptions on service quality at EAL and to propose corrective measures and plans for preventing or reducing the specific possessions, and restoring the numerous strategic essentials previously in place.

The difference among expectations and perceptions is the gap which is the cause of passengers' perception of service excellence as shown in figure 2.1 below.

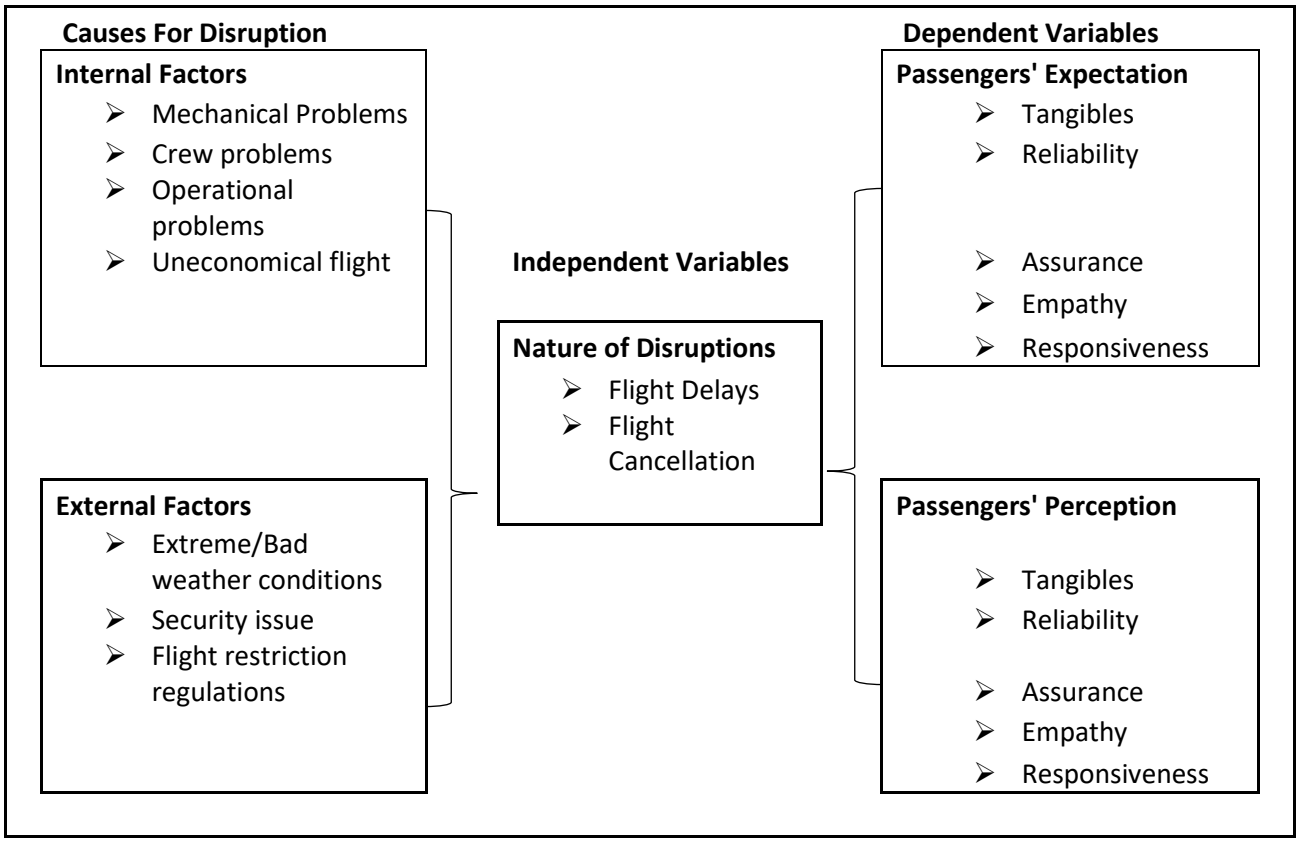

Figure 2.1: Conceptual Model presenting relationship between Disruptions and Perception and Expectations of Service Quality
Source: - Adopted from Zeithaml, Bitner, and Parasuraman (2010)

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 Introduction

The research method used to complete this study is discussed under this section. It presents examination design; data gathering techniques, questionnaire design and data analysis methods.

3.2 Research Design

Research design incorporates type and source of data, method of data collection and sampling strategy (Saunders, Lewis, & Thornhill 2012). In this study the researcher used descriptive and explanatory analysis. The descriptive explains elements used to measure effects of airline disruptions on service quality. The explanatory design is used to find the relationship among the variables of the study. The researcher explained the relationship between autonomous and central variable by using multiple regression analysis.

3.3 Target Population

According to Ngechu (2004), a population is a distinct or set of people, services, elements, events, group of things or households that are being examined. The target population for the investigation were both local and international daily passengers of EAL. EAL serves a daily average of 20,000 passengers (Report from EAL authority, 2021). Based on the daily passenger number, the sample size for this study becomes 392 passengers. This sample size was calculated using the following sample size formula adopted from (Yamane, 1967 and Easterby-smith, 2002).

$$n = \frac{\mathrm{N}}{1 + N(e)2}$$

Where n= sample size

N= Number of Population

e= error term (0.05) at 95% confidence interval

$$n = \frac{20{,}000}{1+20{,}000(0.05)2}$$

n=392

The selected sample passengers were contacted virtually through their personal emails and electronic data transfer medias mainly whatsapp and telegram for ease of accessibility of the passengers and the collected data.

3.4 Sampling Techniques

Convenience sampling technique was employed for contacting, acquiring and recording information from the members in the target population since the questionnaire was distributed to any passenger who was accessible at the time of the data collection.

3.5 Types of Data and Technique of Data Gathering

3.5.1 Sources of Data and Data Type

To attain the essential information from respondents, two types of data gathering instruments were applied. Based on availability of time and resources, the researcher used questionnaires and secondary data source like books, documents, research papers, journals, and publications. The collected data was investigated and organized using quantitative approach.

3.5.2 Technique of Data Gathering

For the proper achievement of the objectives of the study; among different primary data collection methods, questionnaire was used. Close ended questions were prepared to collect quantitative data from respondents. Two types of questionnaires were prepared and distributed. The first type of the questionnaire was prepared for passengers and the second was for managers of the airlines. The variable is measured using Likert scale with five response categories ordinarily. "The Likert scale method is preferred to make questions interesting to respondents and thereby enhance their cooperation (Scott and Gerald, 2010).

3.6 Data Analysis Method

The data gathered from respondents through questionnaire was analyzed using descriptive and inferential statistics. The descriptive statistical analysis describes respondent's background as well as factors that affect Airline customers' satisfaction on service quality. Regression and correlation examination was employed to statistically analyze the relationship of variables described as autonomous and dependent variables. Statistical Package for Social Science (SPSS) version 22 was used for this purpose.

3.7 Validity and Consistency

Validity decides whether the measuring instrument truly measures what will be anticipated to quantify or how valid and probable the research consequences are. To ensure validity, questionnaires were designed on the groundwork of questionnaires from previous studies and review of related literatures.

Reliability is measures of internal consistency of the instrument. It is concerned with responses consistency across constructs and indicates scores are stable over time when the instrument is administered (Creswell, 2009). The researcher used a 0.70 Cronbach's coefficient alpha to measure the consistency of the instrument. The nearer Cronbach's alpha figure is to 1.0 the greater the interior reliability of the items in the measure.

Table 3.1: - Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.930	.922	54

(Source: - Survey result, 2022)

Table 3.2: - Item Statistics

	Mean	Std. Deviation	N
Tangibles for Expec.	1.8482	.59911	392
Reliability for Expec.	2.0434	.68185	392
Empathy for Expec.	2.5302	.73355	392
Assurance for Expec.	2.4991	.83890	392
Responsiveness for Expec.	2.1267	.50498	392
Tangibles for Perc.	1.9330	.56242	392
Reliability for Perc.	1.8867	.49800	392
Empathy for Perc.	2.5867	.55424	392
Assurance for Perc.	2.0332	.56052	392
Responsiveness for Perc.	1.7946	.38734	392

(Source: - Survey result, 2022)

As shown in the table 3.1, The variables constructed for this study (a total of 54 variables 27 for expectation and 27 for perception from 392 respondents) have been tested by using Cronbach's alpha coefficient through SPSS V.22 and found to be 0.922. This signaled acceptability of the data for further analysis.

CHAPTER FOUR

4. RESULTS AND DISCUSSION

4.1 Introduction

The findings of each of the research objectives are presented in this chapter. It also highlights the preliminary findings by giving the response rate of study based on the data collected.

4.2 Preliminary findings

Data was collected from two categories of the marked population: Passengers and management level employees of Ethiopian Airlines. A sample of 392 passengers with disruption experience was taken with 100% response rate. At the same time, area managers of EAL who are directly involved, impacted, and related to disruptions were contacted.

On the reliability of the research tool Cronbach's alpha value was computed. This value was established to be 0.886 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, 68.1% of the respondents in this study were male while 31.9% were female. Regarding age, 69.4% of the respondents were between 25-40 years of age while 25.8% were above 40 years of age and the remaining 4.8 % less than 25 years of age. In relation to marriage 65.8 % of the passengers were currently married and the remaining 34.2 % were single. Passengers who had education of high school represented 3.6%; Collage Diploma or Degree represented 37.2% while postgraduate represented 59.2%. Regarding current occupation 69.6% of the passengers were employed, 28.6% businessmen and the remaining 1.8% were students. The findings for the respondents' demographics are summarized in table 4.1 below.

Table 4.1: Demographic Profile of Respondents

Demographic	Category	Frequency	Percentage
Gender	Male	267	68.1
	Female	125	31.9
Age	Less than 25 years	19	4.8
	25-40 years	272	69.4
	Greater than 40 years	101	25.8
Marital Status	Single	134	34.2
	Married	258	65.8
Educational Level	High School	14	3.6
	College Diploma or Degree	146	37.2
	Post-Graduate	232	59.2
Current Occupation	Employed	273	69.6
	Businessman	112	28.6
	Student	7	1.8

(Source: - Survey result, 2022)

4.4 Types of Disruption and Kind of Loss Experienced by Passengers'

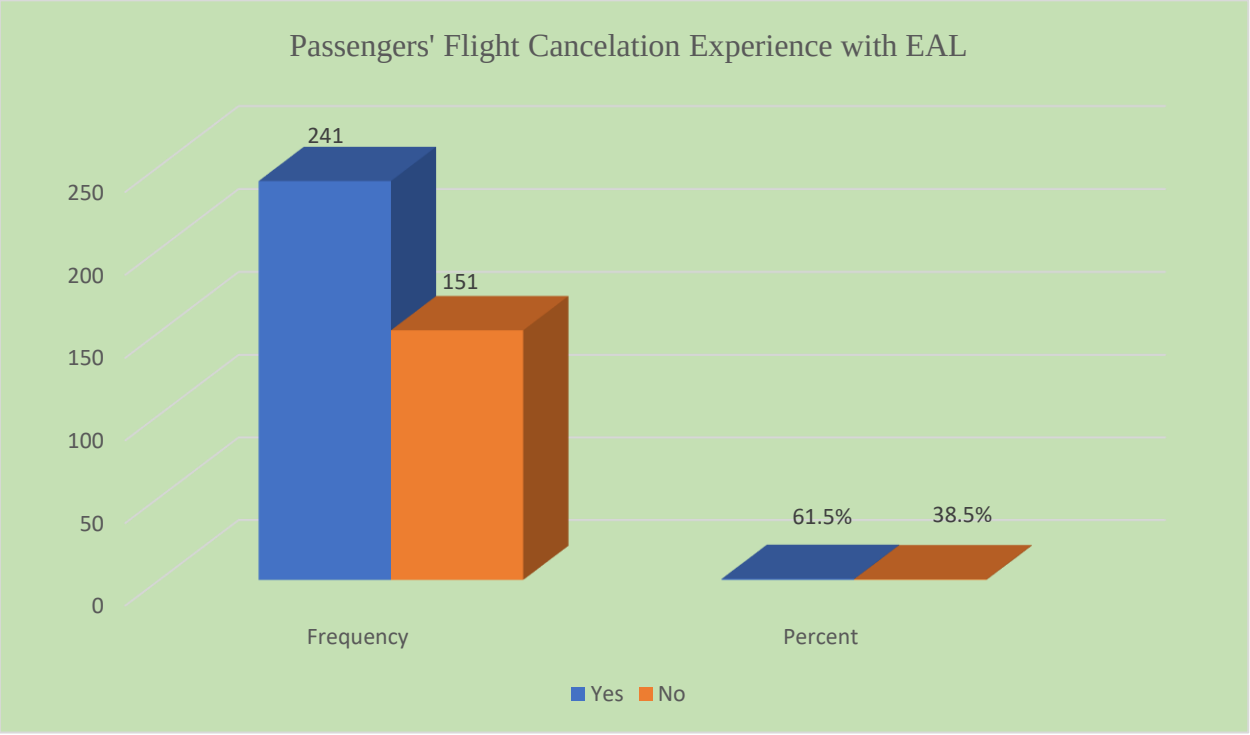

Figure 4.1: - Passengers' Flight Cancelation Experience with EAL
(Source: - Survey result, 2022)

From the above figure 4.1 we can see that 61.5 % of the respondents had an experience of flight cancelation while the remaining 38.5% of respondents had no experience of flight cancelation with EAL.

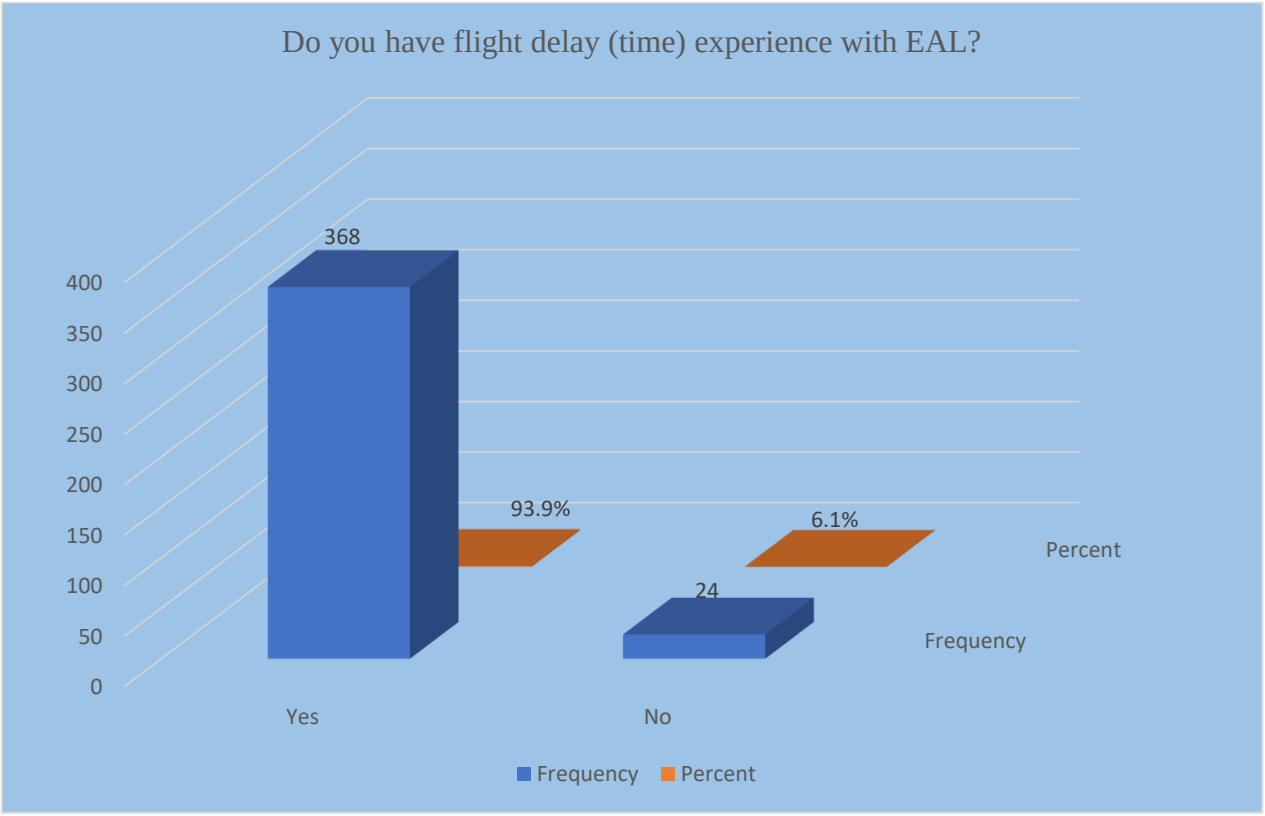

Figure 4.2: - Passengers' Flight Delay Experience with EAL
(Source: - Survey result, 2022)

As illustrated in the above figure 4.2 we can see that 93.9 % of the respondents had an experience of flight delay while the remaining 6.1% of respondents had no experience of flight delay with EAL.

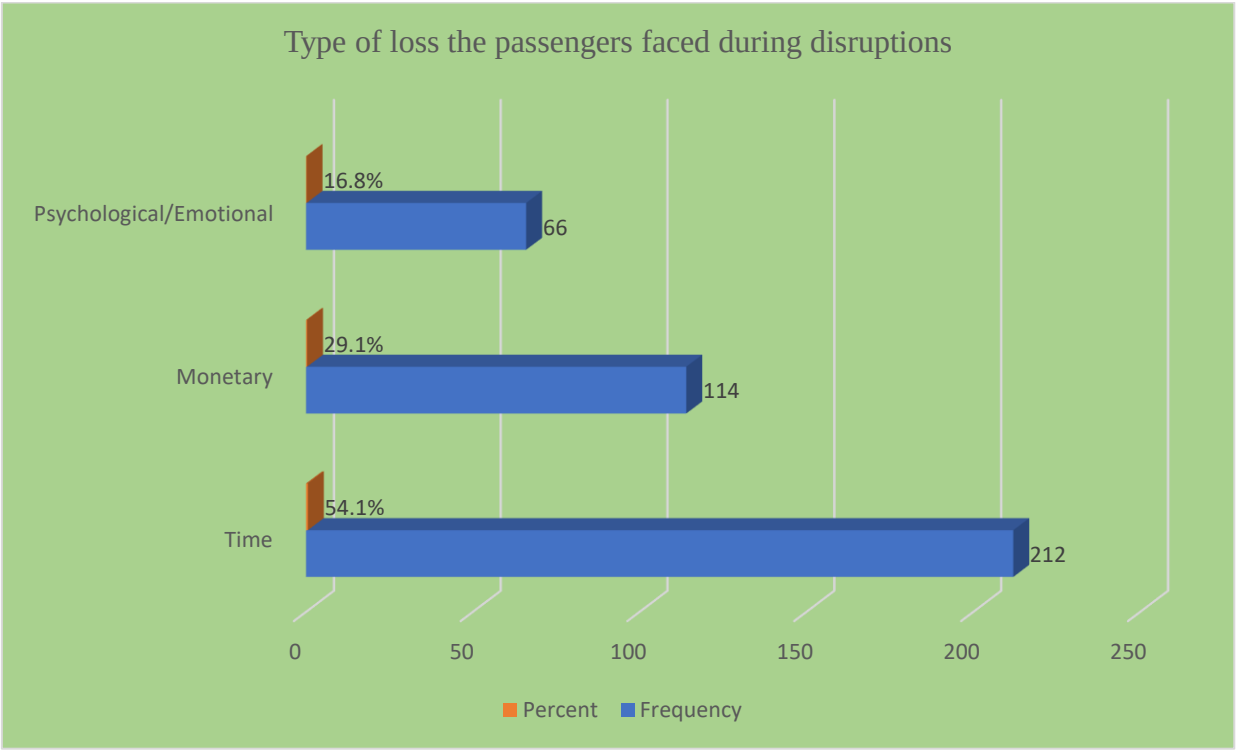

Figure 4.3: -Type of loss the passengers faced during disruptions
(Source: - Survey result, 2022)

As illustrated in the above figure 4.3 we can see that 16.8 % of the respondents suffered a psychological loss, 29.1 % of the respondents a suffered monetary loss and 54.1 % of the respondents suffered time loss because of flight disruption with EAL.

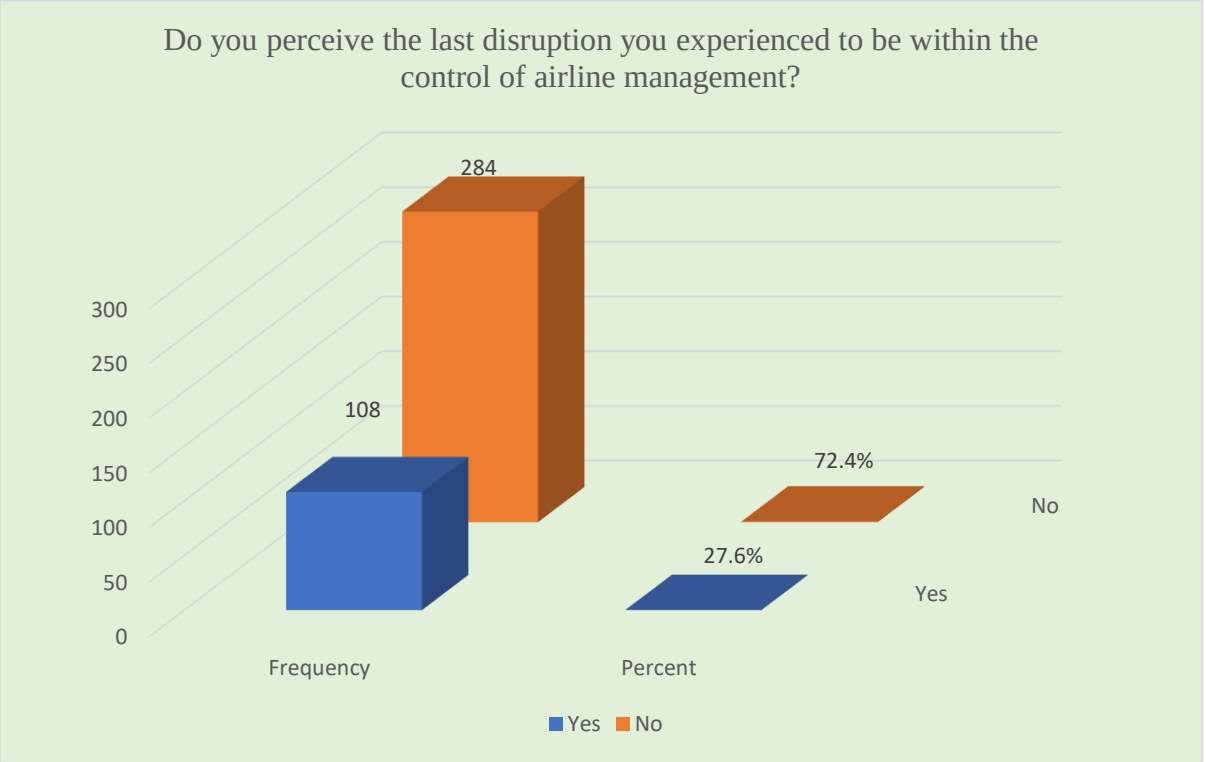

Figure 4.4: - Do you perceive last disruption you experienced to be within the control of airline management? (Source: - Survey result, 2022)

As demonstrated in the above figure 4.4 we can see that 27.6 % of the respondents perceived that last disruption they experienced to be within the control of the airline's management. The remaining 72.4 % of the respondents perceived that the last disruption they experienced to be not within the control of the airline's management.

4.5 How Disruptions affect Passengers' Perceptions and Expectations of Service Quality

4.5.1 Disruptions and Passengers' Expectations

The passengers were asked to indicate their level of agreement with the twenty-seven statements measuring their expectations and perceptions on the quality of service by EAL during disruption. The passengers were to rank each statement beginning from strongly agree to strongly disagree as they appeared in a Likert Scale of 1 to 5. Descriptive analysis was performed on the passengers' responses where their mean score and standard deviations were computed by using SPSS and then the mean values were used as an indicator of their level of agreement with the statements. The findings indicated that all the items returned a mean score of between 2.53 arranged in a Likert scale to 1.85 for agree as shown in Table 4.2 below.

As a result, Tangibles had the lowest mean score of 1.85 with standard deviation of 0.816. Empathy had relatively highest mean score of 2.53 with standard deviation of 1.155. The Overall mean score of all the items was 2.24 with the overall standard deviation of 1.070.

Table 4.2: Results of Mean Importance Ratings for Expectations

Category	No.	Expectation Statements	Mean	Stdev.
Tangibles	1	I expect an ideal airline to have modern equipment regardless of the disruptions.	1.98	.773
	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.	2.04	1.108
	3	I expect the airline physical environment of the check-in and aircraft to be clean regardless of the disruptions.	1.64	.645
	4	I expect airline employees to be well dressed and appear neat regardless of the disruptions.	1.73	.739
Overall			**1.85**	**0.816**
Reliability	5	I expect airlines not to have frequent delays or cancelations.	2.20	.993
	6	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.	2.17	1.092
	7	I expect employees to be knowledgeable to answer my questions regardless of the disruptions.	1.85	1.173
	8	I expect to be given prompt service by airline employees regardless of the disruptions.	1.93	1.186
	9	I expect airline employees operating hours to be convenient to me regardless of the disruptions.	2.07	1.065
Overall			**2.04**	**1.102**
Empathy	10	I expect when I have a problem, employees to show a sincere interest in solving it regardless of the disruptions.	2.04	1.234
	11	I expect airline employees to never be too busy to respond to my requests regardless of the disruptions.	2.39	1.296
	12	I expect the airline employees to understand my specific needs regardless of the disruptions.	2.91	1.352
	13	I expect that there be enough employees to give me individualized attention regardless of the disruptions.	2.97	1.267
	14	I expect airlines to have my best interest at heart regardless of the disruptions.	2.10	.816
	15	I expect airline employees to give me personalized service regardless of the disruptions.	2.77	.965
Overall			**2.53**	**1.155**
Assurance	16	I expect employees of airlines to convey information about disruptions to me on a timely manner regardless of the disruptions.	1.98	.955
	17	I expect employees of airlines to relay information to me in an appropriate language regardless of the disruptions.	3.75	1.225
	18	I expect employees of airlines to relay quality and comprehensive information to me regardless of the disruptions.	2.01	.947
	19	I expect airline to keep my booking records accurately regardless of the disruptions.	3.20	1.787
	20	I expect to feel safe while transacting with the airline employees during disruptions.	1.93	1.069
	21	I expect the behavior of the employees to be the one to instill confidence in me regardless of the disruptions.	2.12	.970
Overall			**2.50**	**1.159**
Responsiveness	22	I expect when employees of an airline promise to do something by a certain time, they do so regardless of the disruptions.	2.19	1.143
	23	I expect airline employees to perform the service right the first time regardless of the disruptions.	2.14	1.009
	24	I expect airline employees to provide their services at the time they promise to do so regardless of the disruptions.	2.09	1.073
	25	I expect employees to be polite to me regardless of the disruptions.	2.09	1.028
	26	I expect to be compensated by airlines during the disruption.	2.28	1.002
	27	I expect airline employees to always be willing to help me regardless of the disruptions.	1.97	.984
Overall			**2.13**	**1.040**
Overall Mean of Expectation			**2.24**	**1.070**

Source: Own survey result, 2022)
Scale: < 1.80 Strongly Agree, between 1.81 and 2.60 Agree, between 2.61 to 3.40 Neutral, between 3.41 to 4.20 Disagree and > 4.21 Strongly Disagree

4.5.2 Disruptions and Passengers' Perceptions

The passengers were asked to indicate their level of agreement with the twenty-seven statements measuring their perceptions on the quality of service of EAL during disruptions. The passengers were to rank each statement beginning from strongly agree to strongly disagree 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 findings indicated that all the items returned a mean score of between 2.59 arranged in a Likert scale to 1.79 for agree and strongly agree as shown in Table 4.3 below.

As a result, Responsiveness had the lowest mean score of 1.79 with standard deviation of 0.803. Reliability had relatively highest mean score of 2.59 with standard deviation of 1.025. The Overall mean score of all the items was 2.06 with the overall standard deviation of 0.928.

Table 4.3: Results of Mean Importance Ratings for Perceptions

Category	No.	Perception Statements	Mean	Stdev.
Tangibles	1	The airline had modern equipment to minimize the disruptions.	1.97	.797
	2	The airline physical facilities- check-in and aircraft (shelves, counters, computers, and cabin) were visually appealing during disruptions.	1.74	.675
	3	The airline physical environment of the check-in and aircraft was clean during disruptions.	1.98	.773
	4	Airline employees were well dressed and appeared neat during disruptions.	2.04	1.108
Overall			**1.93**	**0.838**
Reliability	5	The Airlines have frequent delays or cancellations.	1.85	1.173
	6	Airline employees made information easily obtainable by the passengers during disruptions.	1.93	1.186
	7	Employees were knowledgeable to answer my questions during disruptions.	2.07	1.065
	8	I was given prompt service by airline employees during disruptions.	1.83	.697
	9	Airline employees operating hours was convenient to me during disruptions, and they were easily accessible.	1.75	.661
Overall			**1.89**	**0.957**
Empathy	10	The employees of the Airline showed sincere interest in solving my problems.	1.65	.715
	11	The employees of the Airlines were too busy to respond to my requests.	3.89	.806
	12	Employees were able to understand my situation during the disruption.	1.71	.713
	13	I was given attention by the airline employees during the disruptions.	2.39	1.296
	14	The Airlines acted to my best interest during the disruption.	2.91	1.352
	15	I received personalized service during the disruption.	2.97	1.267
Overall			**2.59**	**1.025**
Assurance	16	Employees of airlines conveyed information about disruptions on a timely manner.	1.76	.731
	17	Employees of airlines relayed information about disruptions in an appropriate language.	1.73	.711
	18	Employees of airlines relayed quality and comprehensive information about the disruption.	1.57	.701
	19	The Airlines kept my booking records accurately during disruptions.	2.01	.947
	20	I felt safe while transacting with the airline employees during disruptions.	3.20	1.787
	21	The behavior of the employees installed confidence in me.	1.93	1.069
Overall			**2.03**	**0.991**
Responsiveness	22	When employees promised to do something by a certain time, they did so during disruptions.	1.46	.635
	23	Airline employees performed the service right the first-time during disruptions.	1.42	.539
	24	Airline employees provided their services at the time they promised to do so during disruptions.	1.56	.536
	25	Airline employees were polite to me regardless of the disruptions.	2.14	1.009
	26	I was compensated by the airline for the service disruption.	2.09	1.073
	27	Airline employees were always willing to help me during disruptions.	2.09	1.028
Overall			**1.79**	**0.803**
Overall Mean of Perception			**2.06**	**0.928**

Source: Own survey result, 2022)

Scale: < 1.80 Strongly Agree, between 1.81 and 2.60 Agree, between 2.61 to 3.40 Neutral, between 3.41 to 4.20 Disagree and > 4.21 Strongly Disagree

4.5.3. Gap Analysis

The difference of the mean results of each corresponding questions for perception and expectation were taken to indicate passengers' satisfaction on the service quality of the Airline. The questionnaire was prepared using an inversed Likert scale where respondents' agreement decreases as the score increases between 1 and 5. The contents of the questions are also all positive hence, the closer the mean is to 1 the stronger the expectation or perception of the passenger. Accordingly, when the perception is higher than the expectation, the mean variance is less than zero and vice versal. The variance on tangibles and empathy are slightly positive 0.08 and 0.06 respectively indicating improvement area. Reliability, Assurance and Responsiveness are -0.15, -0.47 and -0.34 with better passenger rating.

Table 4.4 Gap Results of Mean Expectation and Mean Perception

Category	Questions	Mean of Expectation	Mean of Perception	Mean Variance (Perception less Expectation)
Tangibles	Q1	1.98	1.97	-0.01
	Q2	2.04	1.74	-0.3
	Q3	1.64	1.98	0.34
	Q4	1.73	2.04	0.31
Overall		**1.85**	**1.93**	**0.08**
Reliability	Q5	2.2	1.85	-0.35
	Q6	2.17	1.93	-0.24
	Q7	1.85	2.07	0.22
	Q8	1.93	1.83	-0.1
	Q9	2.07	1.75	-0.32
Overall		**2.04**	**1.89**	**-0.15**
Empathy	Q10	2.04	1.65	-0.39
	Q11	2.39	3.89	1.5
	Q12	2.91	1.71	-1.2
	Q13	2.97	2.39	-0.58
	Q14	2.1	2.91	0.81
	Q15	2.77	2.97	0.2
Overall		**2.53**	**2.59**	**0.06**
Assurance	Q16	1.98	1.76	-0.22
	Q17	3.75	1.73	-2.02
	Q18	2.01	1.57	-0.44
	Q19	3.2	2.01	-1.19
	Q20	1.93	3.2	1.27
	Q21	2.12	1.93	-0.19
Overall		**2.5**	**2.03**	**-0.47**
Responsiveness	Q22	2.19	1.46	-0.73
	Q23	2.14	1.42	-0.72
	Q24	2.09	1.56	-0.53
	Q25	2.09	2.14	0.05
	Q26	2.28	2.09	-0.19
	Q27	1.97	2.09	0.12
Overall		**2.13**	**1.79**	**-0.34**
Overall Mean of Expectation		**2.24**	**2.06**	**-0.18**

The overall mean of expectation was 2.24 and the overall mean of perception was 2.06 with a variance of -0.18 as shown in table 4.4. This result designate that the actual experience of passengers was better than their expectation.

4.6 Inferential Statistics /Analysis/ of the Passenger Perception Level on Disruption

Before applying regression analysis, some tests were performed to ensure the appropriateness of data to the assumptions of regression analysis.

4.6.1 Multicollinearity Test

The regularity of the statistics in the regression pattern was checked using multicollinearity test: subsequent steps to define whether there is association among the independent variables in a pattern. Relationships among the independent variables drive consequence in a solid correlation. In addition, multicollinearity examination is done to carefully investigate decision-making procedure concerning insignificant effect of independent variables on the dependent variable. Proper regression model must not show association between the independent variables i.e., multicollinearity.

Examination of multicollinearity based on VIF (variance inflation factor) check results:

1. *If the VIF value lies between 1-10, then there is no multicollinearity.*
2. *If the VIF < 1 or >10, then there is multicollinearity.*

As can be seen in the Table 4.6 below, the VIF results are between 1.644 to 2.189 both in the upper and the lower boundary. Hence, the model fulfills the requirements concerning multicollinearity.

4.6.2 Correlation Analysis

A correlation is a degree of how powerfully two variables link to each other. Correlation coefficients are frequently used to describe data because they are relatively easy to use and provide a great deal of information in just a single value (Mooi & Sarstedt, 2011).

The calculated significance of the correlation figure ranges from -1 to 1, where -1 directs a pure negative relation, the relationship is perfectly linear) and 1 indicates a perfectly positive relationship. A correlation figure of 0 specifies that no association (Mooi & Sarstedt, 2011).

0.1 < | r | < 0.3 … small / weak correlation

0.3 < | r | < 0.5 … medium / moderate correlation

0.5 < | r | …… large / strong correlation

Table 4.5: Pearson Correlation

		Tangibles	Reliability	Empathy	Assurance	Responsiveness	Disruption
Tangibles	Pearson Correlation	1					
	Sig. (2-tailed)						
	N	392					
Reliability	Pearson Correlation	.184**	1				
	Sig. (2-tailed)	.000					
	N	392	392				
Empathy	Pearson Correlation	.562**	.215**	1			
	Sig. (2-tailed)	.000	.000				
	N	392	392	392			
Assurance	Pearson Correlation	.567**	.377**	.631**	1		
	Sig. (2-tailed)	.000	.000	.000			
	N	392	392	392	392		
Responsiveness	Pearson Correlation	.415**	.327**	.572**	.565**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	392	392	392	392	392	
Disruption	Pearson Correlation	.162**	.396**	.039	.060	.152**	1
	Sig. (2-tailed)	.001	.000	.447	.237	.003	
	N	392	392	392	392	392	392

**. Correlation is significant at the 0.01 level (2-tailed).

4.6.2.1 Tangibles and Disruption

The association between the concerning two variables has weak relationship at r=.162**. However, Pearson correlation shows that tangibles still have significant impact on perception during disruption. This implies tangibles has positive correlation with passenger perceptions about the disruption.

4.6.2.2 Reliability and Disruption

There is a considerable relationship between disruption and reliability. The result of r=.396** shows that the two variables correlated positively. The association between the two variables has moderate relationship.

4.6.2.3 Empathy and Disruption

The correlation result of the independent and dependent variable is r =.039** which implies that there is small relationship between disruption and empathy.

4.6.2.4 Assurance and Disruption

The association between the concerning two variables has weak relationship at r=.060**. However, assurance still has considerable impact on disruption. This implies assurance has positive correlation with passenger perceptions (disruption service recovery).

4.6.2.5 Responsiveness and Disruption

According to table 4.5 the two variables have small relationship at r=.152**. However, the Pearson correlation shows that responsiveness has still considerable impact on disruption perception. This implies disruption has positive correlation with passenger perceptions on responsiveness.

4.6.3 Regression Assumptions and Analysis

Regression examination is a scientific measure of the normal association among two or more variables in relations of the unique units of the data. Regression obviously designates the cause-and-effect association among the variables. In regression, the variable conforming to cause is taken as independent variable and the variable matching to consequence is taken as dependent variable.

1. Checking for Linearity

The regression pattern can be articulated in a linear way. Testing the linearity using y and x variables can be completed by scheming the independent variables in contradiction of the dependent variable (Mooi & Sarstedt, 2011). The purpose of normality test is to check whether the regression model of the underlying factors of disruption have normal distribution or confirm non-violation of multicollinearity assumption prior to conducting multiple linear regression analysis. As figure 4.5 below shows, the relationship of independent variables with the dependent variable is linear.

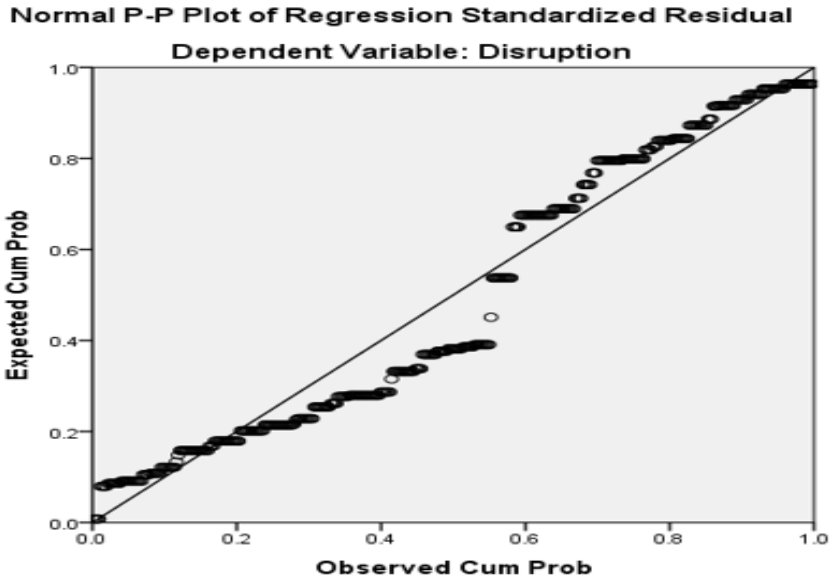

Figure 4.5: - Normality Test Result

2. Regression Model Summary

To examine the influence of disruption on passengers' perception, multiple linear regression analysis has been conducted. The regression model summary (see table 4.6) presents R square showing how far the change in disruption handling measures explained the passengers' perception. Accordingly, R^2 obtained 0.204 indicated that 20.4 % of the deviation in perception about the disruption can be explained by passengers' perception factors in the model. In other words, R square 0.204 means that the explanatory variables have 20.4 % impact on the dependent variable. The remaining 79.6 % impact on disruption was explained by other variables.

Table 4.6: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.451[a]	.204	.193	.224	.204	19.729	5	386	.000

a. Predictors: (Constant), Responsiveness, Reliability, Tangibles, Empathy, Assurance

(Source: - Survey result, 2022)

3. Regression Analysis for Disruption

From Table 4.7, we can observe the magnitude to which the independent variables: tangibles, reliability, and assurance influence airlines' service quality perception during disruption referring to the independent variables unstandardized beta coefficient values. These three variables significantly affect the service quality perception during disruption. The regression analysis shows unstandardized Beta coefficients of (0.098), (0.214) and (-0.100) for tangibles, reliability, and assurance respectively. In the same order, their significance levels are 0.000, 0.000 and 0.001. Two of the five variables had significance level of more than 0.05 which is our tolerance level. However, the other three variables influence the dependent variable significantly.

Table 4.7: Disruption Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval		Collinearity Statistics	
		B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.826	.067		12.402	.000	.695	.957		
	Tangibles	.098	.026	.221	3.799	.000	.047	.149	.608	1.644
	Reliability	.214	.025	.428	8.583	.000	.165	.263	.831	1.203
	Empathy	-.042	.029	-.093	-1.432	.153	-.099	.016	.486	2.059
	Assurance	-.100	.030	-.225	-3.343	.001	-.158	-.041	.457	2.189
	Responsiveness	.065	.038	.101	1.695	.091	-.010	.140	.585	1.709

a. Dependent Variable: Disruption

(Source: - Survey result, 2022)

To express the dependent variable (Disruption) and independent variable (tangibles, reliability, and assurance in mathematical equation)

Let:

Y= Passenger's perception about the Airline Service during Disruption,

X1= Tangibles,

X2= Reliability,

X3= Assurance

Therefore, the general relationship is written mathematically as follow:

$$Y_i = 0.098\ X_{1i} + 0.214\ X_{2i} + -0.100\ X_{3i}$$

4. Discussion of Regression Results

The aim of this practice was to investigate how passengers perceive the service of the airline during the disruption. According to this study, the explanatory variables: tangibles, reliability and assurance were identified as critical in perception of service quality during disruption.

i. *Tangibles on perception during disruption*

The result of regression analysis shows that tangibles have a significant positive effect to detect the passengers' perception with regards to disruption (sig.000). When tangibles increase by a single unit, passengers' perception will be increased by 0.098 (with the positive beta value of 0.098).

ii. Reliability on perception during disruption

The result of regression analysis shows that reliability has a significant positive effect to detect the passengers' perception with regards to disruption (sig.000). When reliability increases by a single unit, passengers' perception with regards to disruption will be increased by 0.214 (with the positive beta value of 0.214).

iii. Assurance on perception during disruption

The result of regression analysis shows that assurance has a significant negative effect to detect the passengers' perception with regards to disruption (sig.000). When assurance increases by a single unit, passengers' perception with regards to the disruption will be decreased by 0.100 (with the negative beta value of 0.100).

4.7. Qualitative Analysis on EAL managers response

According to the airline managers' response, the major reason of service disruption for the last couple of years, which is after emergence of COVID19 pandemic is flight restrictions issued by the destination country. Other factors were more of external which includes extreme weather conditions and political instability at destination. From internal factors, uneconomical operation is the dominant reason leading to flight disruption especially for flight cancelation.

The possible measures for disruption taken by airline managers were both proactive and reactive. Among many, route optimization by rerouting and capacity management was heavily done to reverse uneconomical operations. Post disruption, passengers were given alternative protection plan, compensation, and hotel accommodations. The airline management has also made negotiations with authorities in different countries that issued flight restriction and successfully lifted the ban on most of them. Accordingly, the airline currently has permit to all destinations it used to serve before the COVID 19 pandemic as a show case.

CHAPTER FIVE

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes and concludes based on the results of this study. In addition, recommendations in line with the findings are presented.

5.2 Types and Causes of Disruptions

Two types of disruptions have been declared to be common globally in the literatures. These are delays and cancellations. This study recognized that in EAL delays are prevalent. Delays were common because of the following causes as concurred by the employees of the airlines: maintenance issues, crew problems, extreme weather conditions, ground handling human errors, and runway congestions and closures. Bad weather, maintenance issues, economically non feasible flights due to load or cost and flight restriction regulations by destination countries are the common reasons mentioned for cancellation at EAL. Of recent the emergence of pandemics especially COVID 19 is the eminent cause of both delays due to extended procedures that passenger must go through before boarding and cancellation due to travel restriction of destination countries. The findings of this study that delays are prevalent in EAL agrees with that of Yan and Yang (2010) that recognized flight delays are the most common form of disruptions worldwide that passengers experience.

5.3 Strategies for Mitigating Disruptions

Many airlines globally have different strategies in place to alleviate the various effects of disruptions they face. In EAL preventive and reactive measures were being taken. Implementation of state-of-the-art forecasting systems, training of employees to avoid human errors as well as customer handling during and after disruption, work with airports for pre-treating of runways to avoid surprise closures, advising passengers before they leave their home through their respective contact details, protection of passengers on other airlines, transferring to hotels during disruptions, and compensating inconvenience passengers based on the predefined standard are among the mitigating measures of the airline. These strategies are practical any time delays or cancellations occur.

Use of state-of-the-art predicting schemes as a technique to deal with disruptions was also suggested by Tyler (2010) to be valuable in replying to airline disruptions. In addition, Hoffman, and Woods (2011) stated that hotel bookings and transfers during disruptions to be an effective way to manage the influences of disruptions.

5.4 Disruptions and Passengers' Perceptions and Expectations

Regarding perception of service quality, five attributes were found to be influenced by airline disruptions. These attributes included Tangibles, Reliability, Empathy, Assurance and Responsiveness with average mean values of 1.85, 2.04, 2.53, 2.50 and 2.13 respectively. EAL can improve passengers' perception of service quality by improving on the elements of these five components of service quality to obtain the mean average value below 1.80.

The key discovery of this study is that EAL flight service disruptions distress passengers' perception and expectations of service quality. Concerning passengers' expectations of service quality, the overall average of the passengers' expectation was 2.24 and the overall mean of passengers' perception was 2.06. Even if the passengers' perception is better than their expectation in comparison, it needs that the passengers' perception must be below the aggregate level of agreement in other words the overall average mean value of passengers' perception was 2.06 which is far from 1.80.

5.5 Conclusions and Recommendations

One of the major findings of 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: tangibles, reliability, and assurance. Therefore, the airline must put in place appropriate measures to mitigate these disruptions. Service quality for airlines is vital as it determines whether airlines are responsive to passengers' needs or not. This study suggests that the airline needs to keep on laboring hard to prevent; manage; and recover the disruptions repeatedly experienced.

This study also established that the major causes of disruptions at EAL are extreme weather conditions, maintenance problems, crew problems, uneconomical operations and runway congestion or closures. Some of these causes are internal while others are external. It is important for the airline put appropriate measures in place to minimize repeated occurrences of these causes by deploying modern methods of responding mechanisms.

The other finding of this study is that majority of best practice mitigation mechanisms are being applied at EAL. These methods include using of state-of-the-art forecasting systems; rescheduling delayed operations; substituting with different aircraft in cases of aircraft technical issues; complying with air traffic control regulations and programs that manage traffic in the airspace and at airports; negotiating with airport authorities to provide suitable slot; working with different authorities (security, immigration and others) at the airport to speed up ground handling process; forecasting and advance planning of uneconomical operations so that passengers use other options to travel; advising passengers of the flight disruption in advance before leaving their home; hotel bookings and transfers during disruptions; and compensating inconvenienced passengers in accordance with the procedure.

Finally, this study recommends that EAL should carefully analyze the methods of mitigating the 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.

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Appendix

Appendix A: Passengers Questionnaire

Please answer the following question.

1. Have you ever experienced a flight cancelation, departure, or arrival delay? If yes, please continue with Section I below, and If No, thank you for your time.

    1. Yes 2. No

Section I: Personal background of respondents (Please make 'X' sign where appropriate).

2. Kindly indicate your age group?

    1. Less than 25 years
    2. 25-40 years
    3. Greater than 40 years

3. What's your gender?

    1. Male
    2. Female

4. What's your marital status?

    1. Single
    2. Married

5. Where is the region of your flight origin?

    1. Africa
    2. Asia
    3. Europe
    4. America
    5. Gulf and Middle East
    6. Australia
    7. Others (please specify)

8. Please indicate your highest education level.

    1. Primary and below
    2. High School
    3. College Graduate
    4. Postgraduate

7. What is your current occupation?

    1. Employed
    2. Unemployed
    3. Businessman
    4. Student
    5. Others (specify)

Section II: Respondent's Flight Service Disruption Experience

8. Do you have flight cancelation experience with EAL?

1. Yes 2. No

9. Do you have flight delay (time) experience with EAL?

1. Yes 2. No

Please indicate the type of Flight service disruption you have experienced. (Please make √)

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

1. Never
2. Rarely
3. Sometimes
4. Many times
5. High
6. Extremely High

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

1. Time
2. Monetary
3. Emotional (Psychological)

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

1. Yes
2. No

Section III: Passengers expectations of airlines service quality during the last disruptions at EAL.

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 EAL during disruptions. (Put 'X" sign where appropriate). Please rank each statement as follows: Strongly Agree = 1, Agree =2, Neutral=3, Disagree=4, Strongly Disagree=5

		SA(1)	A(2)	N(3)	D(4)	SD(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 or cancelations.					
6	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.					
7	I expect airline employees to make information easily obtainable by the passengers regardless of the disruptions.					
8	I expect to be given prompt service by airline employees regardless of the disruptions.					
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 behavior of the employees to be the one to instill confidence in me regardless of the disruptions.					
	Responsiveness					
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 perception of airlines service quality during disruptions at EAL

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 received from airlines at EAL during disruptions. (Cross where appropriate). You should rank each statement as follows: Strongly Agree = 1, Agree =2, Neutral=3, Disagree=4, Strongly Disagree=5

		SA(1)	A(2)	N(3)	D(4)	SD(5)
	Service Quality Statement					
	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	The airline physical environment of the check-in and aircraft was clean during disruptions.					
4	Airline employees were well dressed and appeared neat during disruptions.					
	Reliability					
5	The Airline has no frequent delays or cancellations.					
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	The employees of the Airline showed sincere interest in solving my problems.					
11	The employees of the Airlines were not too busy to respond to my requests.					
12	Employees were able to understand my situation during the disruption.					
13	I was given attention by the airline employees during the disruptions.					
14	The Airlines acted to my best interest during the disruption.					
15	I received personalized service during the disruption.					

	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	The Airline kept my records accurately during disruptions.					
20	I felt safe while transacting with the airline employees during disruptions.					
21	The behavior of the employees installed confidence in me.					
	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	The 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.					

Appendix B: Questionnaire for Management Employees of Airlines

Please answer the following questions.

Section I: Respondent's Flight Service Disruption Experience

1. Has your airline experienced a flight disruption in the last one year?
   1. Yes
   2. No
2. 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	
Fueling problems	
Bad/extreme weather conditions	
Problems with National Aviation Systems	
Insecurity	
Fire outbreak	

Others (please specify) ……

Section II: Please answer the below questions with short answers

1. What strategies does EAL apply to prevent disruption?
2. How does the airline recover service for already inconvenienced passengers?
3. What other measures does EAL take to help the airline effectively manage disruptions in the future?
4. What are the external Authorities the airline collaborates in relation to disruption?