

PROVIDING GOOD SERVICE QUALITY AND CUSTOMER SATISFACTION FOR AIRLINE GROUND SERVICES



Master of Science Thesis
Management of Technology

PROVIDING GOOD SERVICE QUALITY AND CUSTOMER SATISFACTION FOR AIRLINE GROUND SERVICES

MASTER THESIS

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Abstract

Airline Industry has seen constant growth in the passenger aviation sector over the years. The profits though, have not risen much because the competition has stiffened and fluctuating oil prices have been a cause of concern as well. Price wars have been a short-term strategy for the airlines to gain a bigger market share and retain customers. For any airline organisation to be competitive it needs to have a long-term strategy with a firm focus on its customers. Airline ground services have been an area where airlines lose revenues and customers. However, now airlines have shifted their focus from price wars to customer centric service to maintain.

This research is focused on understanding customer preferences for airline ground services mainly for passengers from China, USA, countries of European Union, Indonesia and India. To understand the customers preference for airline ground services, this research takes place in 3 steps. First step consists of literature review and theoretical background. The theoretical background looks into the types of service quality measurement models. The literature discusses specially between Grönroos model and SERVQUAL model, as these are most widely used models. The theoretical background looks into the baggage handling process and security aspects so that the attributes to the research model can be built. Second, step consists of semi-structured interviews with passengers who fly frequently. The interviews with the passengers helped verify and validate the research model. Finally, through a survey the data was gathered and using Best Worst Method (BWM) the preferred main criteria and sub-criteria were calculated in the excel solver. It was found that reliability and responsiveness were the two most important criteria while assurance was the least important criteria. To understand preferences as per nationality one-way ANOVA test was done. the One-Way ANOVA results for comparison between various nationalities showed that the output was significant for *responsiveness* criteria, and *Word of Mouth*. Cluster analysis was done to group respondents on their similarities.

The results of the study are important for airline managers, airport managers and academicians. This model will help the managers find a model on which they can build on in the future. A study can be done by managers to understand the service delivery of their organisation based on which with help of these results airlines

should be able to successfully guide strategic initiatives for airline ground services. Furthermore, this research model can be used for markets other than airline markets. On the other hand for academians, BWM is used for the first time with SERVQUAL model for airline ground services. This combination of BWM with SERVQUAL can be used by academians for future study for any other market. Furthermore, this research model with attributes can be used for future studies of airline ground services.

Acknowledgements

I believe that this thesis is somewhat similar to a caterpillar evolving to a butterfly. The caterpillar builds a cocoon around itself and then digests itself to turn in to a butterfly. To put this analogy in perspective, during the start of my thesis I gathered all the data and digested the gathered information. After this process a structure to a thesis starts to form. This completed thesis version is an evolved butterfly.

For this evolution to be successful there are a lot of external factors that need to be right. Similarly, this thesis is not an individual effort, many people have contributed towards it. Firstly, I would like to thank my first supervisor Dr. Jafar Rezaei for giving me freedom to select a topic of my interest and mainly, for being a guiding light throughout the course of my thesis. He has been a great support during the whole thesis, especially when my work slowed down due to my illness, his words of motivation kept me going. I would also like to thank Dr. Robert Verburg and Prof. Dr. Lori Tavasszy respectively, for their valuable comments and suggestions.

I would also like to take this opportunity to thank my parents, Mr. Milind Kothadiya and Mrs. Gandhali Kothadiya in India, who have been incredibly supportive and patient during my study. Along with my family I would like to thank my friends in Delft. These people have been my family away from home, Anuja Naiknavare, Deep Golwala, Venkatesh Ramakrishnan, Siddhi Pitkar, Laia Esteban, Nico Van Ginkel, Nisarg Gandhi, Harsh Sapra, Priyanka Ganatra, Preethi Padmanabhan to mention a few, the pep talks for encouragement and thoughtful conversations. I would like to give a special mention to Munjal Savla for his guidance during my whole study course and Prakhar Kiyawat for standing by me as a brother during my illness and taking care of me by cooking lovely meals.

- *Oshan Kothadiya*

Delft, 25th November 2016

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1.0 Introduction

The Aviation industry has been growing steadily every year. Last year the aviation industry catered to 3.3 billion passengers which is 33.3% higher than the number of passengers that flew in the year 2007 (2.48 billion passengers) (SITA, 2015). The increase has a positive effect as well as a negative effect to the aviation industry. The increase in passengers results in increase in various aspects like revenues, profits, and so on, which are always a welcome sign. But on flip side aspects like baggage loss, customer complaints, security threats also increase, which the airlines, security organisations and the airport authorities work together to avoid.

This constant increase in the number of passengers has made the companies and airport authorities to look for new methods for providing passengers safe and efficient travel. Baggage handling system is one of the most important part of the ground service process. Baggage handling system is used at the airport to transfer the luggage that is checked-in at the check-in desk to the plane. The airport baggage handling system is a critical component in the plan of any airport. By automation of transfer of baggage, the time taken to turnaround an aircraft can be brought down to as much as 30 minutes. This leads to smoother operations, reduced costs and makes the airport look attractive for airlines to make its hub (UKEssays, 2015). Baggage handling systems are a part of an intricate network that is dependent on other systems where either airline or airports are responsible for.

Initially the bags were transferred manually from the check-in counter to the flight. However, during those days the number of passengers were extremely low as compared to today as a result sorting of bags was easy and not very laborious (Transportation Research Board, 2015). With time, the number of passengers increased as a result sorting became hard. Hence, conveyor systems were added to reduce time and effort of baggage transfer. After that, barcode system were added to reduce complication, so that the authorities could keep up with the baggage traffic and avoiding the complication of sorting manually. The introduction of barcode systems has been possible due to the development of the information technology sector (IT sector).

As technology has evolved over time, more sophisticated electronic devices could be manufactured and could be made more compact. Radio Frequency Identification (RFID) tags was the result of this technological evolution. These RFID tags improve the baggage sorting, baggage handling. The RFID tags on full implementation in the aviation industry is said to save up to \$760 million. However, there are drawbacks for RFID tags as well, just like the previous systems have had. Depending on the volume of tags manufactured the cost of tags can vary from \$0.10 to \$1.10. This can cause a big fluctuation in costs, as a result RFID tags are finding it hard to penetrate the market. Furthermore, a RFID compatible infrastructure is needed in the aviation industry and to avail benefit from the technology the 80 airports are needed to be equipped with this technology (Zhang, Ouyang & He, 2008).

Recent study shows that China, United States of America (USA), India and Indonesia will have the highest growth rate in number of air passengers (Pearce, 2014). This strongly suggests that higher population will be from developing countries rather than developed countries making it important to address their needs and requirement from future point of view. As per the study, the rise in passengers will be predominantly because of living standards and not because of price. Due to this reason the focus of the thesis will be to understand the needs of passengers, mainly from China, USA, countries of European Union, Indonesia and India. Addressing future needs helps in gaining market domination. This can be seen through practical examples where Whatsapp, Uber have gained market domination as these service based applications address what the customers want.

The airline industry has been a part of my interest. Hence I have decided to take up the baggage handling aspect of the airline industry. In order to analyse the baggage handling aspect, airline ground services study is what needs to be done. In short, the airline ground service study will be done from the customer perspective. This report will be divided into four sections. First section will be the problem identification and discussion. This topic will be followed by the research objective which will lead to the research questions. After this, a deeper discussion will be done in the topic of interest with literature review. Methodology will follow after literature review which will give information of the flow of thesis and how the objective at hand will be achieved. After methodology, data analysis and discussion will explain how data has been

collected, analysed and results will be provided. Finally, conclusions and discussion will be given to provide a closing to this thesis study.

1.1 Problem Identification and discussion

We have already seen that the passenger aviation market is constantly increasing in terms of number of passengers per year. The competition has also become fierce with low cost carriers coming to the fore. This has led to the intensification of efforts by the airlines to retain its customers for future flying purpose (customer loyalty). The increased competition has led to price wars in the past (Hadjetian, 2015) and over time the market has saturated in terms of airfares. But this strategy has been more of a short-term strategy, as it is important for the airline companies to focus on service quality for making a lasting impact on the customer. A long-term plan that prioritizes customer satisfaction can arguably be said to be a good and a long-term strategy.

To do so we need to understand the airline service process. The service process can be divided in to three parts to make it simple to understand, pre-flight service, in-flight service and post-flight service. The pre-flight service is as follows- passenger travel process starts with the passenger walking in to the airport for the check-in process. In this process the baggage is given to the airline for them to transfer it to the particular flight. From there passenger goes for security check and then on in-case it is an international flight the passenger goes for immigration. As for the baggage, after it is checked in it goes through security scanning, followed by sortation as per the flight schedule. If the time for flight departure is long then baggage is stored in holding bay or else it is unloaded at the designated bay to be loaded back on the pallet and repacked. The flight boarding is next, after the immigration is completed. The baggage is loaded on the aircraft as the boarding procedure starts (Ateş & Kağnıcıoğlu, 2013).

In-flight service comprises of various services like entertainment (music, movies, newspapers, etc.), meal, lavatory facility, phone call, internet, information from flight deck and also the information regarding the connecting flights. The in-flight process varies according to the flight time. But in most cases the in-flight process is longer than the pre-flight or the post-flight process (Lovat, 2009).

In the post-flight process the passengers depart the plane and walk towards immigration. In the meantime, the bags are unloaded from the plane and go through a document check after which they are accepted. After immigration the passengers leave the terminal and go to baggage claim. The bags after acceptance are loaded on the conveyor system so that they can be claimed by their respective passengers (Ateş & Kağnıcıoğlu, 2013). In case the customer cannot find his/her baggage, they contact the airline representative who provides service of helping retrieve the misplaced baggage.

Although this thesis is customer centric it is important not to rely only on detailed literature review to gather information. Hence, a face-to-face interview was carried out with Richard Ottens, Manager Product Development at KLM. His domain of product development was mainly for improvement of customer experience for the ground services (the transcript of interview is added in the Appendix). Due to the position of Richard Ottens in the organisation it can be said that he has great amount of knowledge about the industry and also the information that is provided by him is reliable.

From the interview it seemed quite evident that the airline is working hard towards being customer focused. He mentioned of the steps being taken by the airlines to improve the baggage handling and improving the customer experience. Also due to the recent development in the IT sector a lot of attention is being given to the automation of processes (automated check-in process, mobile barcode scanner, etc.), he also pointed out about the efforts taken by airlines to provide live updates of their baggage to its customers. Apart from this a lot of importance is being given to the kind of interface that is being provided so that it is easy for the customers to use these facilities. The detailed literature review helped in getting data of the top 10 complaints made by customers against airline services. The top 10 complaints are provided in a table below (Skytrax, 2015).

Apart from the interview with Richard Ottens, an informal interview with Jan Aarts, Manager Baggage and logistics in order to gather more data regarding baggage handling process and top customer complaints in KLM and Air France. The top customer complaints for KLM and Air France are added in Appendix.

Lost baggage

Lost baggage is the most complained aspect by customers as the customer's experience a lot of inconvenience as loss of luggage can mean they are left with none of their belongings. At times this can be considered to be violation of personal property of the customers (Skytrax, 2015).

Table 1 - Top 10 complaints made by passengers

Sr. No.	Complaint
1.	Lost baggage
2.	Delayed Flights
3.	Seat Space
4.	Hidden Costs
5.	Customer Service
6.	Cleanliness
7.	Refunds
8.	Terms and Conditions of Ticket Booking
9.	Airline Meals
10.	Change of Aircraft

Delayed Flights

Customers that are travelling these days have additional plans after they reach their destination. However, when a flight gets delayed it can lead to big shuffling of plans for the customers. At times it also happens that the flight status is not updated to the customers, since the staff can be a bit sceptical about the response they will get from the customers. As a result the delayed flights sit second in the complaint list. Also due to delayed flight there can be a possibility of mishandling occurring (Skytrax, 2015).

Hidden Costs

Fourth on the list is hidden cost. Airlines usually experience complaints made against them by customers related to hidden costs. This is frequently seen on low cost carriers as they have a complicated charging scale which needs the customers' attention to read all the details of it. The clarity of information that is provided by the airlines to the customers varies from airline to airline making it hard for the customers to know about the charges. Lately seat selection, upgraded meal, alcohol options, mid-flight meals are charged depending on the airlines leaving the

customers' dissatisfied. Baggage weights variation also leads to these issues (Skytrax, 2015).

Customer Service

Customers complain about the poor service that they get for various aspects. Customers experience poor service when they seek help of the airlines during flight rescheduling, when flights get delayed, in-flight assistance, assistance related to baggage. Passengers are also dissatisfied if the interaction they have with the airline representative is rude, absent, disinterested, incapable to converse in English, etc. This is the reason why customer service stands at number five in the customer complaints category (Skytrax, 2015).

Cleanliness

The increase in the number of passenger year-on-year has led to airlines focusing on improving the turnaround times of airplanes. Due to short turnaround times there is little time for the cleaning of the airplane hence a lot of airlines face complaints about cleanliness inside the cabin, toilets, etc. Few of the airlines have excelled in the cleanliness of airplanes. The increase in passengers has also put a load on the number of passengers at the airport making it a challenge for the up-keep of facilities (Skytrax, 2015).

Refunds

When a customer expects a payment from the service provider for not receiving the service for what the payment was done is called a refund. Refunds at times take days which leaves the passengers dissatisfied. There are many other reasons where refunds come in to play. Few such examples are not receiving priority boarding, downgrades of class for which customers experience problems receiving refunds or not receiving the right amount of refund (Skytrax, 2015).

Terms and Conditions of Ticket Booking

While customers book tickets, there can be possible pitfalls regarding booking of flight tickets, as the fare structure and booking codes of airlines can be complicated. The baggage piece allowances terms, rescheduling of flights, flight cancellations, etc. can vary from one airline to other making the customer dissatisfied when they come to know about the terms later. Frequently, this situation happens when a

customer books a ticket because of cheap fare without paying much attention of the terms and conditions of the fare (Skytrax, 2015).

Loss or mishandled bags cost heavily for the airline industry reducing their profits and revenue. Apart from financial losses the airline as well as the airport also faces image crises due to mishandled bags and in worst case lost baggage. Image is not only affected when bags are lost or misplaced but it is also possible that customers can be dissatisfied by the service provided at the check-in process. Even though the in-flight service is the longest, the pre and post flight service is what creates most impact on the customer. Hence, in this thesis topic we will be focusing on the airline ground service quality.

All industries look for better ways to save costs. For example, in the manufacturing industry the costs are reduced by improving process of manufacturing or by changing the process flow, etc. Similarly, the aviation industry does not stop looking for new ways to reduce its process time and costs. These can create unforeseen problems due to which there can be problems in the service delivery.

1.2 Research Objective

The aviation market is growing every year as a result there is a need for managers to keep up with the pace of the growing population of the travellers. Loss or mishandled bags cost heavily for the airline industry reducing their profits and revenue along with its brand image. Hence there is a need to provide managers with the right data to chalk a strategy for improving service and customer satisfaction. Also as mentioned above the focus of the research will be mainly on the four markets with the highest growth rate in terms of number of passengers; China, USA, European Union, Indonesia and India.

The objective of this research is to identify and evaluate various dimensions of service which will affect customer's level of satisfaction with regards to the ground services so that priorities are known with the help of theoretical and empirical findings. These help airline managers to address needs of customers thereby reducing the gap between expectations and perception of service leading to satisfied customers.

1.3 Research Question

Now that we have understood the research objective the research questions are -

1. *What are the existing models used to measure the quality of service and customer satisfaction in the airline industry?*
2. *What aspects do customers recognise for service quality and customer satisfaction for airline ground services?*
3. *Which part/aspect of service quality is more important for the customers so that managers can formulate a firm strategy to elevate both the aspects; service quality and customer experience?*
 - a. *How do different nationalities vary as per preference for various dimensions and service expectations?*

1.4 Research Approach

The research approach that has been adopted is in line with the order of research questions. The research problem in this thesis has originated from explorative interviews with the expert input of the specific department and from information that is gathered from published sources. These form the base of the problem statement and research questions in this particular thesis. The study that has been conducted is primarily descriptive in nature, since it is meant to describe the preferences of certain demography of people and further see relations with different variables. It can also be argued that the study is not only descriptive but possibly prescriptive in nature, as the preferences and the associations of various variables with demography influence future decisions of managers. Hence, the point here is not to explain the emerging phenomena but to provide information to the managers, to take decisions in the future (Blumberg et al., 2005).

As explained in the book (Sekaran & Bougie, 2010), data collection can be carried out in different ways depending on the type of data. Primary and secondary type data are the two main data sources. Information is gained by the researcher himself/herself on the topic of interest on certain variables. Secondary data is

generally obtained through literature review of previous studies. This data can be from magazines, thesis, scientific papers, books, etc.

Information obtained from this thesis is of primary nature and results of customer preferences for ground services of no prior study have been used. Since we are relying on only our data we will be solving the research questions at hand with the help of qualitative and quantitative data collection methods will be used. Although, it should be noted that secondary data sources will not be used to arrive at conclusions. However, they may be used to provide counter arguments or to provide support to data through statistical information found in annual reports.

Qualitative research helps researchers in gaining information which is unexpected. Explorative research focuses on a topic that is not widely researched. It can be carried out in two known ways; interviews and observing test subject in the test environment (Sekaran & Bougie, 2010). As a result, we will carry out our research doing qualitative as well as quantitative analysis. The qualitative analysis will be helpful for understanding what the expectations are from the customers with respect to the service that is provided. Also, it will help in understanding if the selected attributes of model need to be fine-tuned as per customer requirements.

The Quantitative study will be a self-made questionnaire that will be aimed at a wide demography of people (country, age, sex, flight experience, etc). This formal and structured quantitative study with restricted questions will focus on obtaining the weights for the criteria and sub-criteria. In order to do so, the respondents will be asked to determine the best criterion and worst criterion. After this the respondents of the survey will give a preference of best criterion over all other criteria and the preference of other criteria over worst criterion.

This study will identify and evaluate various dimensions of service which affect customer level of satisfaction with regards to ground service. This makes decision making for airline companies easier while deciding a strategy.

1.5 Path to Reach Objective

To answer the problem statement and research questions at hand, path to reach objective discusses in detail as to how the objective at hand will be achieved.

For answering the first research question a research model is provided based on extensive literature review to measure preferences and expectations of service quality for passengers that will eventually increase the level of satisfaction of the passengers. With the help of this data the strategic decision makers in the airlines companies will be able to decide and focus on the required aspects of ground services. A detailed discussion and explanation of the model and its dimensions and attributes is presented in the next chapter.

In order to answer the second research question and to be certain that the dimensions that we have selected for the model are correct, a preliminary exploratory study will be carried out. A qualitative study is carried out for this thesis through a number of interviews, the preliminary research method for examining these attributes (Sekaran & Bougie, 2010). Members that fly frequently will be selected as part of the interview participant. The spontaneous responses represent their genuine ideas, opinions and feelings of the members. The responses will indicate if the attributes selected are sufficient or if they need to be modified. With the help of modified model, analysis of service quality preferences and expectations will be measured.

For answering the third research question, a questionnaire will be carried out. Online questionnaire will be sent to random members. The main advantage of an online survey is that the members can be from anywhere in the world and since we are focusing on the ground service quality but since our study is focused on the growing market it is necessary for getting answers from respondents of India, Indonesia, China, USA and Europe countries (Sekaran & Bougie, 2010). The questionnaire will help in providing data of preferences of customers with respect to the dimensions and attributes. As for answering the sub-question statistical data analysis is carried out.

1.6 Research model

From the below figure, a model proposed by Chau & Kao (2009) will be used that is modified for the research question. Similar to the statements and arguments used by the researcher price is an important factor for the satisfaction of the customers; however the focus in this thesis will be on the five proposed dimensions and not on

the price. Various attributes relevant to ground services are included in the dimensions and will be explained below.

The framework by Chau & Kao (2009) is modified because the research is slightly different for this thesis. Furthermore, there are no attributes recommended by Chau & Kao (2009). To make sure that the attributes selected are relevant for this thesis, support of the interview of Richard Ottens from KLM and articles have been taken.

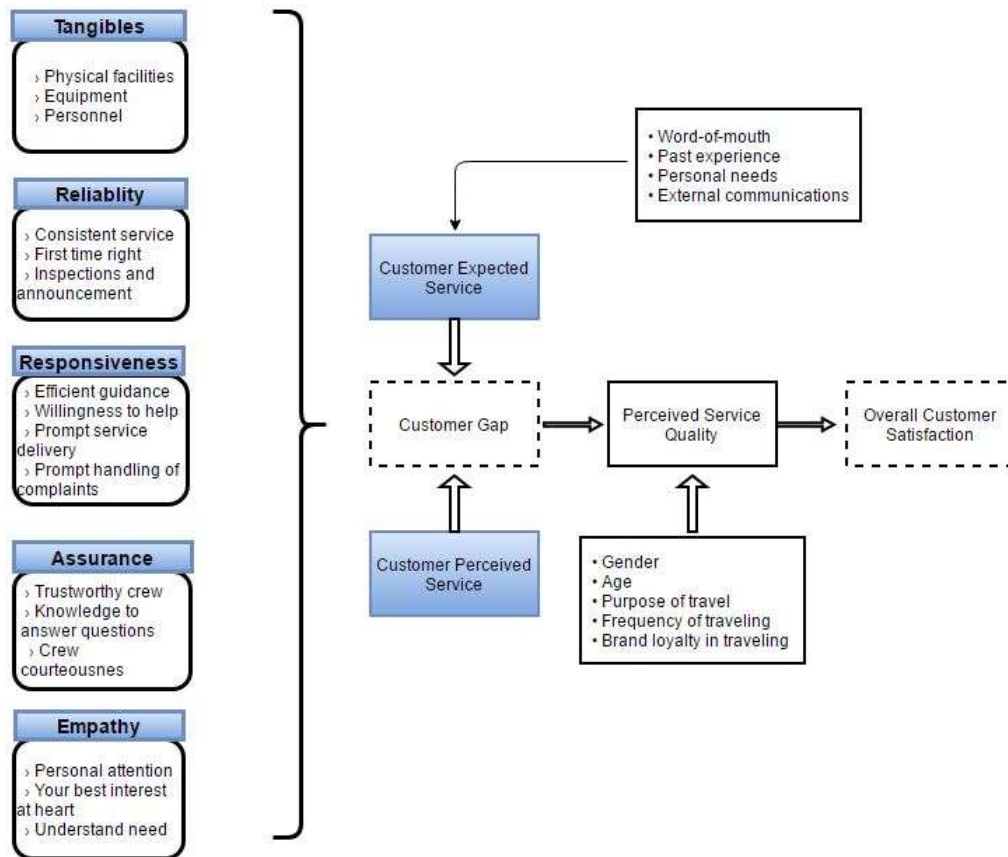


Figure 1 - Research model based on Chau & Kao (2009)

1.7 Scientific and practical relevance of study

At times it is possible that the research that is being carried out has significance on a practical as well as a scientific level. This section provides the scientific and practical significance of this thesis.

This thesis can be said to be of more practical significance than of scientific significance. The scientific relevance of this thesis is to find customer preferences of service quality with the help of SERQUAL model using a new method called as Best

Worst Method (BWM). BWM is used for the first time ever to know customer preferences for airline ground services using SERVQUAL model. Along with this the attributes of the research model were found out after understanding the ground service process flow. As a result, these attributes can be used for future study of airline ground services.

The research model used for this study can be applied for other service based markets. The structure of the model will remain however the attributes may need to be changed as per the need of that specific market.

As for the practical relevance, through this method the important dimensions can be found, which indicate a possible direction for improvements for the airline companies. This is especially important when an airport or an airline is facing problems with ground services. Based on the results obtained from this thesis, improvements can be prioritized. The study of customer preferences being specific to countries like India, China, United States of America and European Union countries is useful for airlines since these countries will be the ones that will be dominating the passenger aviation market in the future. By improving the service delivery, the customers will be satisfied. Once a customer is satisfied it can lead to customer loyalty, which can be said to be a first step for an airline to be a pioneer in that specific country. Customer retention will eventually lead to increase of revenues.

1.8 Scope of thesis

Based on the problem statement and research questions mentioned, the topic will solely focus on finding out the preferences of customers for airline ground services. Ground services can be a very broad term, but for this particular study the focus will be on passengers entering the airport to the passengers leaving the airport.

Furthermore, as mentioned in previous topics, the focus on future growth markets will help airline managers make strategies to keep focus on the needs and preferences of customers of specific demography. This will aid the airlines to be potential contenders as pioneers in these markets.

1.9 Structure of thesis report

With the approach to answer to research questions and the way to achieve objective has been specified, the image below provides a skeleton structure of the thesis.

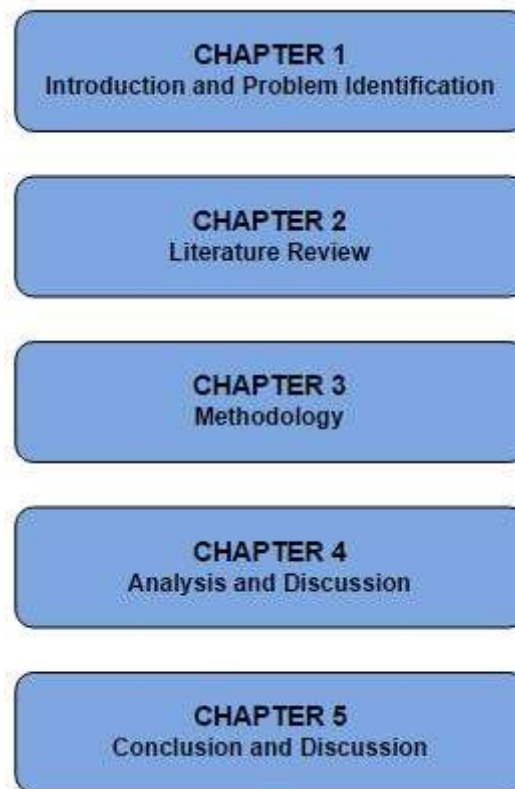


Figure 2- Visual structure of thesis

2.0 Literature Review

This chapter consists of arguments and discussions of the theories that are relevant for this thesis. The first section is a discussion regarding service quality while the second is interplay between customer satisfaction and service quality. Third is the explanation of the service quality dimensions followed by elaboration of baggage handling systems and its development. Finally, a discussion regarding the security systems and the future of security systems will be provided.

2.1 Service Quality

Quality has been seen as a mode of defence by companies in the past, but now it is perceived to be strength for an organisation in order to gain market share (Davis et al, 2003). Over the past years a lot has been studied on the term quality but, intangibility of services is one of the problems with measurement (Joseph et al., 2005). Also, it has been established that in the service sector there is a possibility that production, delivery and consumption might happen together or at the same time.

But more importantly, the study of service quality in the 1980's developed in two different schools. Grönroos and Gummesson were the main researchers for the Scandinavian schools while Zeithaml, Parasuraman, and Berry were main researchers for the North American Schools (Grönroos, 1984; Zeithaml et al., 1990; Williams, 2003). Both the groups were of the marketing background and even though they were from the marketing background they varied on the definition of the concept of marketing. The North American group defined marketing with four P's (price, product, promotion and place) while the Scandinavian group had a more integrative point of view of marketing that concerned around relationship with customers' (Williams, 2003).

Service quality is defined in different ways, but one of the most commonly used definition is the amount to which the service addresses the customer needs (Lewis, 2010). From this we can say that service quality is the difference between the customer expectations of service and perceived service. Hence, we can say that service quality is based on the evaluations made by customers (Zeithaml et al., 1990; Grönroos, 1984; Brown et al., 1991). Service companies cannot rely on their

service standards as that may not be to the expectations of the customer. Hence, we can say that when the expectations of the customer are more than the quality of service delivered, it is then that dissatisfaction occurs (Parasuraman et al., 1985; Lewis, 2010). This statement is supported by Zeithaml et al. (1990):

“Perceived service quality is a form of attitude, related but not equivalent to satisfaction, and results from a comparison of expectations with perceptions of service performance” (Zeithaml et al., 1990)

As mentioned above, service is considered a profitable strategy as it helps in retaining customers, reduces lost customers and creates inflow of new customers. The costs of marketing also reduce as not a lot of convincing is required for the service to flourish (Khatib, 1998; Anderson, Fornell and Lehmann 1994; Boulding et al., 1993; Buzzell and Gale, 1987; Rust and Oliver, 1994). Service can be said to be an orchestrated act, which not only is evaluated on its outcome but, also on the way in which the process is provided. These two aspects are called as technical quality and functional quality (Gronroos 1982, Bowen and Schneider 1988). Products can be separated from services by the following important characteristics (Khatib, 1998, Olufisayo, 2011).

1. **Intangibility-** Service cannot be measured or tested before sale as a result it is intangible unlike a product.
2. **Inseparability-** Production and consumption of deliverables in the service industry is simultaneous as a result it is inseparable.
3. **Perishability-** Unlike products, services are not stored hence it is always hard to orchestrate supply and demand.
4. **Variability-** In services, performance of the consumer and of the employees keeps varying according to behaviour and mood.
5. **Non-ownership-** A newly formed characteristic is that unlike products a customer cannot own a service.

In the 70's since its deregulation, the airline industry grew exponentially. But, from the perception of the passengers the service did not change much (Barnett et al. 1992). As the competition has grown over the years the profit margin has gone down to 3% or lower. As a result, the airline industry has started focusing on the service quality to maintain passenger numbers and competitive edge (www.iata.org, 2015).

In the past because of the competitive environment, various initiatives like price wars, frequent flyer programmes had become the main staple of the industry (Zhanga & Round, 2011). In order to strive for better service, airlines created strategic alliances to give global connectivity. Also for being more customer friendly airlines are providing complete travel solutions, from travel to airport, hotel booking, sightseeing, etc. Through new websites on the internet the customers look for cheaper services. Now to provide better service the carriers have started to decouple services that were included in the price in the past. This has created a possibility for the customer to avail better services and flexibility of planning, thereby improving services (Hadjetian, 2015).

The ground services aspect of any airport or airline is said to be an important factor to determine their quality by the customers. As a result, there is constant need for the aviation industries to improve their ground services. The airlines look for ways to make the provision of good service with minimum expenditure. Similarly, passengers prefer to experience travel without any fuss. Most large and small airlines experience congestion during peak hours, creating a high possibility of mishandled bags or even lost bags in worst case scenario (International Airport Review, 2014). The proof of need for innovation in the aviation industry can be seen from the IATA baggage report. The report emphasises the reduction in mishandled bags due to innovative practices (SITA, 2013).

2.1.1 Models for Service Quality Measurement

There are numerous authors like Becker & Wellins (1990), Cronin & Taylor (1992), Grönroos (1988), Haywood-Farmer (1988), Rust & Olivier (1994) and Zeithaml et al (1990;1993) that have attempted to construct different conceptual models to measure service quality even though they were slightly related. There are 19 well

known models to measure service quality. Out of these 19 models there are two models that are most widely used, namely; Grönroos Quality Model and SERVQUAL model (Seth and Deshmukh, 2004). The remaining 17 models are either an iteration of the two models mentioned above or else meant for a specific market. They have been mentioned in the appendix.

Due to this, within the two groups two models have developed over the years that are predominantly been used in the research tourism and airline services. The models will be introduced in the subtopics below.

2.1.1.1 Grönroos Quality Model

This model has two fundamental dimensions namely; fundamental quality dimension and technical quality dimension. Both these dimensions have an impact on the customer's perceived service quality and experienced service as well (Grönroos, 1984).

Technical quality dimension is called as the outcome dimension, because it represents what the customer receives from the service. According to our case study, it would mean the travel of customer from departure venue to arrival venue. *Functional quality* is related to the process in which the service is delivered i.e. how the service is provided to the customer. These indirect and direct interactions are on which basis the customers perceived service quality is evaluated. Corporate image is the third dimension that is identified by the customers. The perceived image of the airline is important because, if the service is not up to mark or is disappointing then the image of the company in the eyes of the customer goes down.

The Grönroos model lacks on the process aspect in the functional dimension. However, with regards to our case study of airline services the model lacks on showing importance of ground service process.

2.1.1.2 SERVQUAL Model

This model was proposed from the North American school group. SERVQUAL is a more generic model which provides a measurement system for perceived service quality. This model has been well debated, but it cannot be denied that a large number of studies have been carried out in the past (Augustyn & King, 2004; Chen &

Chang, 2005; Philip & Hazlett, 1997; Padkil & Aidyn, 2007). Previously, SERVQUAL model was known as the Gap Model, it presented the 5 gaps that the company should always avoid.

SERVQUAL is based on its past writings of expectancy-disconfirmation theory. The difference between the expectations and evaluation of performance was the measure of quality. The level of satisfaction can be found out once the outcome is categorised with confirmation or else disconfirmation (Parasuraman et al., 1985). The inclusion of disconfirmation theory shows a close relation between service quality and satisfaction.

Originally there were ten dimensions, for evaluating service quality but they were condensed down to five dimensions for the SERVQUAL model (Zeithaml, Parasuraman & Berry, 1990). These dimensions are named and described below -

- Tangibility – Appearance of physical facilities, appearance and communication of the personnel in the service process and type of equipment provided in the service process.
- Reliability – The ability of an airline to do a task or service as promised is called as reliability. In this case reliability of receiving baggage on time.
- Responsiveness – In this case it is the willingness of service provider to help the customers. Making an effort sincerely to provide prompt service to customers.
- Assurance – Ability of service provider to give a sense of trust and security to the customers.
- Empathy – Ability of service providers to communicate with customers and provide individualized attention to them.

In contrast to Grönroos model's criticism, which is on lack of focus on functional dimension, the SERVQUAL model has been criticised for lack of focus on technical dimension (Augustyn & King, 2004). As a result, this model is said to neglect a

rounded approach to the management of services. However, from the literature study we can see that airline passengers think of service quality as a multi-dimensional construction, favouring the SERVQUAL model over the other. From an operational point of view there is no defined yardstick to measurement (Babakus & Boller, 1992). Since there is a non-defined measurement scale, it cannot be known as to how much improvement in the service will improve the customer satisfaction by what value. To negate the shortcomings BWM will be applied, so that weights comparison between the dimensions can be done.

2.2 Service Quality and Customer Satisfaction

There can be doubts regarding the relation between service quality and satisfaction and how these two differ from one another. To make it simple, service quality is characteristic of the service offered while satisfaction is the reaction that is given by the customer on receiving the service (Kasper et al., 2006). So, it can be said that quality of service and satisfaction are related. Due to this the two terms are separate as quality is solely dependent on the organisation while satisfaction is totally on the feeling of the customer. This explanation is matching to the explanation provided above in the service quality section.

It is still unclear if customer satisfaction precedes service quality or service quality precedes satisfaction. We can explain the matter by the following arguments. According to Parasuraman et al., (1985), evaluation of service process occurs based on the perception of service quality. This claim is the reasoning applicable to SERVQUAL model as well. On the other hand Cronin & Taylor (1992) have said service quality precedes customer satisfaction.

2.3 Service Quality Dimensions Explained

In the previous topics a brief explanation was given about what the dimensions actually mean. Since the basic definitions of the dimensions have been understood the attributes included in the dimensions with respect to the thesis will be explained below.

Tangibles

Physical facilities, Equipment and Personnel are what come under the tangibles dimension. For ground services, the variables that are important from the tangibles dimension perspective are the cleanliness of the facilities, quality of equipment provided, modern equipment, appearance of the airline crew. Based on the interview with Richard Ottens from KLM it can be understood that a significant amount of importance is given to the equipment provided by the airline at the ground facilities and has drawn appreciation from its customers. Organisation pays attention to the appearance of the airline staff as well.

Reliability

Consistent service, first time right and inspections and announcements come under the reliability dimension. Consistent service delivery means that same service is provided repetitively time to time. First time right means that the service promised by the airline is provided in the first chance itself. Inspections and announcements are an important attribute of this dimension because issues like terror threats, hijacking, etc. can be averted. From the interview these attributes are important for the ground services aspect for an airline.

Responsiveness

Responsiveness dimensions talks about the efficiency with which the service is provided. Hence, in this the attributes like willingness to help, efficient guidance, prompt service delivery and prompt handling of complaints are included. Prompt handling of complaints and requests is quite important, that was established from the interview with Richard Ottens who says “KLM is working towards being a customer centric airline” hence addressing to customers’ complaints is very important.

Assurance

Assurance dimension has attributes like trustworthy crew, knowledge to answer questions and courteousness with which the crew responds to passengers. Trustworthy crew is a very important aspect in the ground services, as the passengers check-in their baggage to the airline staff to feed it in the baggage handling system. On the other hand, the baggage handlers work towards loading the

luggage on flight. However, there have been instances of theft from checked-in baggage by the baggage handlers ("Paris airport baggage-handlers face trial over thefts worth 176,000 euros") making passengers to question the crew. As per Richard Ottens the "passengers are anxious while travelling till they get on board the flight" as a result the guidance provided by the staff should be correct.

Empathy

There are three attributes that come under the empathy dimension, namely; personalised attention, best interest at heart and understanding needs. Attributes below this dimension can be hard for airlines to deliver, as service is provided to customers of different cultures. However, on the flip side service provided by the airlines will differentiate them from the competition. As per Kasper et al., 2006 for customised people management, courteousness is an important attribute of this dimension.

2.4 Baggage Handling systems

In the past the airlines used to rely on point-to-point flights making baggage handling fairly easy as the data was to be shared with the personnel within the organisation itself or with the security personnel. However, with time the number of alliances between airlines has grown drastically leading to an increase in the transfer passengers flying to some other destination. This increase in transfer passenger means that there is an increase in the transfer baggage, which increases the load on baggage handling system. More information needs to be shared between organisations, as the passengers and baggage is being transferred making the network more complex.

Due to this situation baggage handling performance is being considered as a key for providing good service quality to the customer. This can be seen in the interview of Paul Smith, General Manager Airport Services, Etihad Airways that is provided in the SITA (2015) baggage report, where it is said that baggage is considered to be a core part of a customer's flight experience and baggage performance is what differentiates it from its competitors. Due to this, Baggage Centre of Excellence is being set up by Etihad Airways where the focus will be on all pre and post flight enquiries.

2.4.1 Baggage Handling process

Before dwelling deeper, it is important to understand the process of baggage handling system. To explain the baggage handling process at the airport we have taken CDG airport in Paris as an example to elaborate the process. However, the real process can vary from country to country, airport to airport. For each airport, there are different luggage handling systems and levels of automation. A more detailed petri net diagram of the process is provided once the baggage handling process is explained.

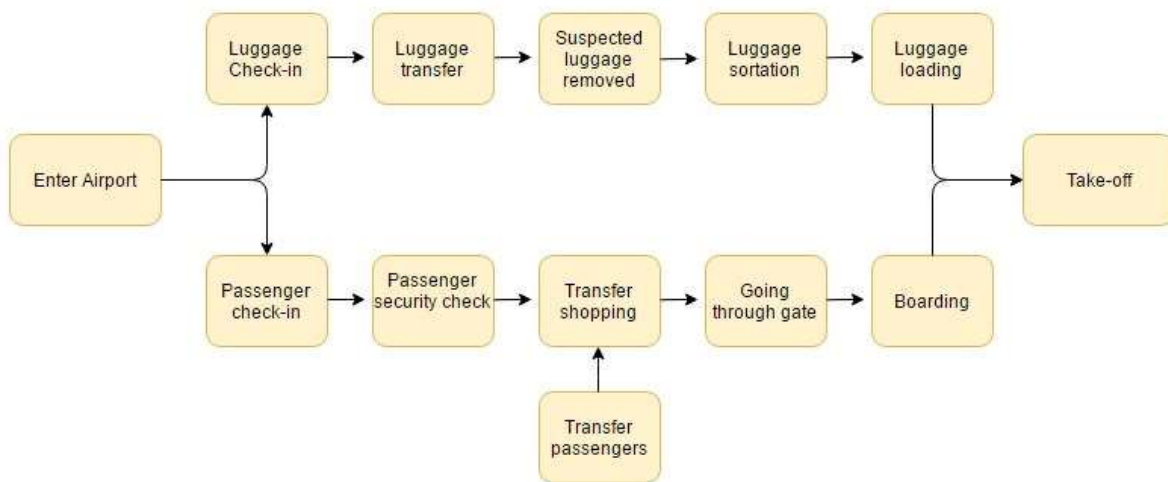


Figure 3- Process flow for baggage handling at airports (BPMN Assignment, 2015)

When passengers arrive for check-in at the airport the bags are tagged with glue-backed barcode labels. This barcode holds all the details of the passenger like name, destination of travel, halts, flight details, etc. After the check-in process is done, the attendant puts the bag on the luggage conveyor. A telecar is required for the bags to move hence empty telecar management software receives the signal and sends a telecar. Without the telecar the bag cannot move on the conveyor. The bags are received by the telecar at a T-intersection that are moved by a high-speed luggage-bowling machine. These telecar have a plastic tray which can do three things receive bags, transfer bags and unload bags. This type of loading helps in saving the process time as well as energy.

Immediately after bags are loaded on telecar it passes through a bar-code scanner which scans the bar-code on the bag. Accordingly, information is sent to the sortation computer that matches the information to the flight details and its terminal location. The scanners are triggered by photo-electric sensors that are placed at regular intervals. The bag is transferred to its location with the help of a radio transponder mounted on each telecar.

During the whole process of travel to its destination bags are scanned for suspicious objects between check-in and sortation area. The integration of these scanning devices in the process of transfer of bags saves time. In case of a suspicious bag scanned the telecar is directed by the computer to a special inspection station where the bags will be scanned in detail (Yamazaki & Nishikamo-gun., 1998).

Since both the airports are similar to the number of passengers they cater every year the speeds of telecar are obtained from Denver Airport data (Michael Schloh, 1996). The telecar that is loading luggage runs at 4.5 miles per hour while during unloading runs at 8.5 miles per hour and a transit telecar rolls at speeds as much as 19 miles per hour. Luggage that are in transfer and do not need to be transferred to the loading bay immediately are sent to a special storage rack called the buffer. These bags are stored in the buffer till the bags need to be loaded (Baggage Handling at Amsterdam Schiphol, 2010). Below two figures in Petri Nets and BPMN are provided giving an overview of the baggage handling system.

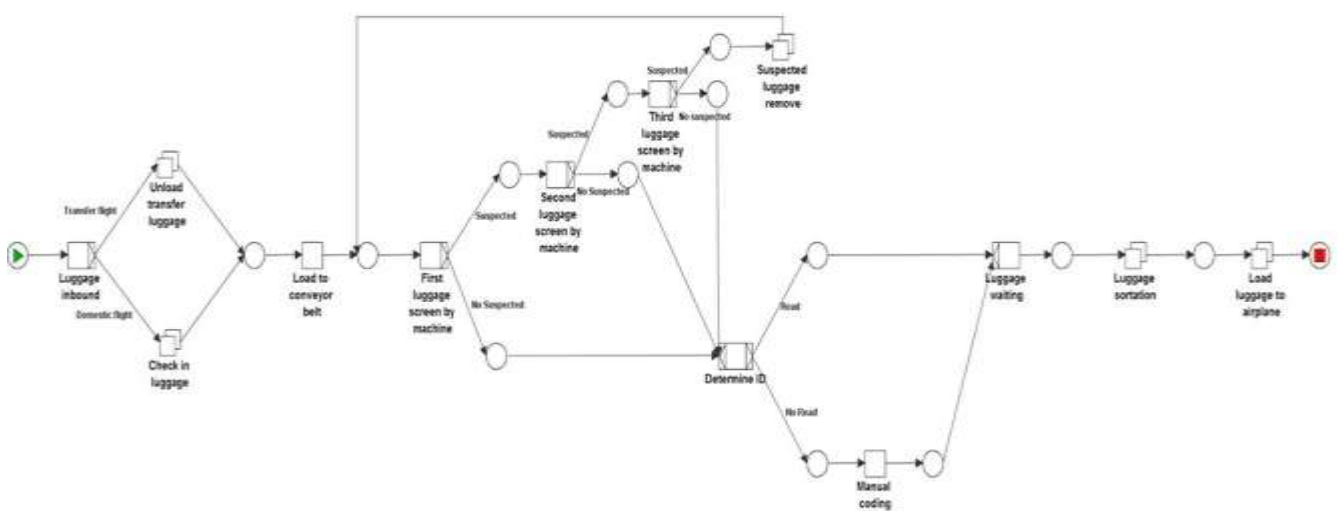


Figure 4 - Overview in Petri Nets of baggage handling process

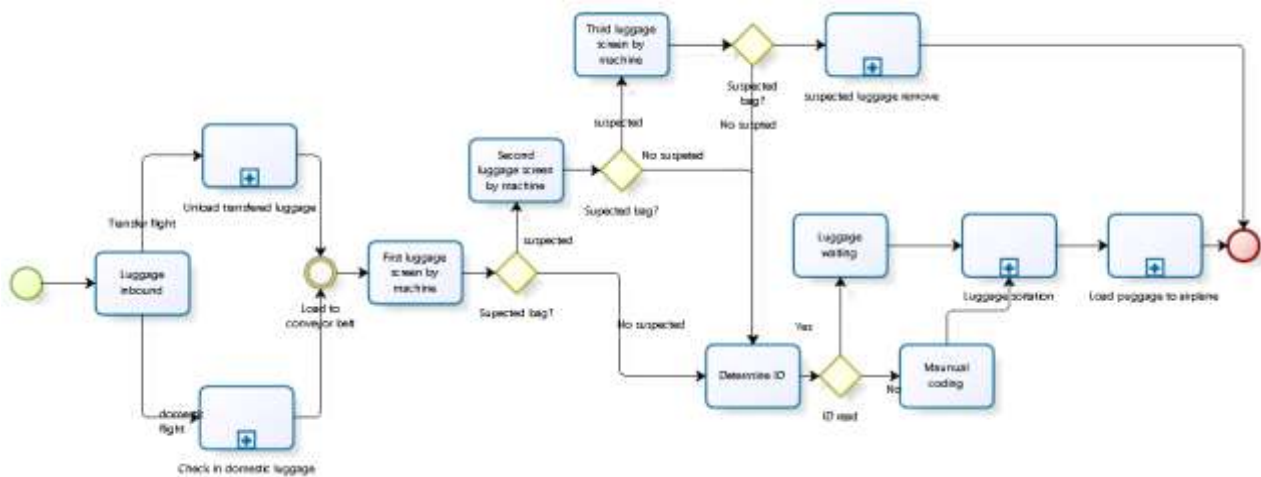


Figure 5 - Overview in BPMN of baggage handling process

2.4.2 Issues with baggage handling

Now that we have understood the process of baggage handling at the airport we need to understand what are the possible issues that occur with baggage handling. With that we will understand the reasons for occurrence of these issues. However, before understanding the reasons of baggage mishandling there is a need to know how significant baggage mishandling is (SITA, 2015).

The mishandled baggage has reduced a lot since the year 2007 where 18.9 bags were mishandled per 1000. Now, for the year 2014 mishandled baggage was 7.3 bags per 1000. Even though this is a 61.3% reduction in mishandled baggage and \$18 billion savings since 2007 which is a 43.1% reduction of mishandled baggage cost. Long-term comparison is done to the year 2007 because the mishandled baggage was at its peak during that year. The graphical representation of the mishandled baggage and the number of passenger can be seen below (SITA, 2015).

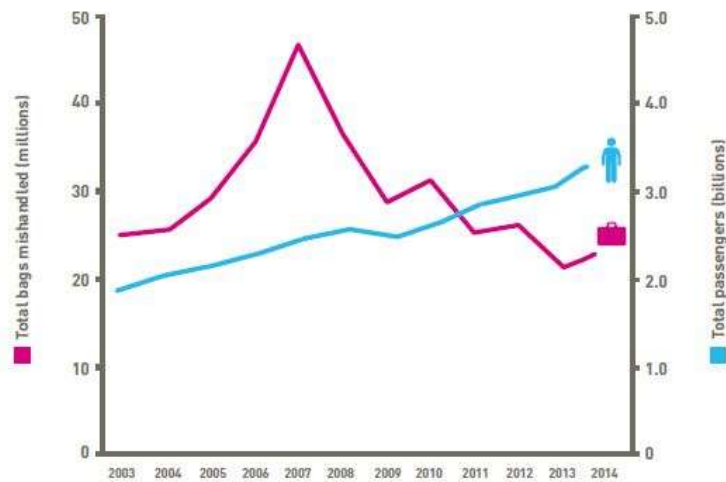


Figure 6 - Trend of Passenger numbers and Mishandled baggage (SITA, 2015)

The mishandled baggage for the year 2013 is lower than that of the 2014 year because of the increase in the passengers. This increase has resulted in increase of load on the infrastructure in the aviation industry. Hence, the total number of mishandled bags rose from 21.8 million to 24.1 million in 2014. As per SITA Baggage handling report it can be seen that 80.2% of mishandled bags were delayed bags (which accounts for 19.3 million bags), 14.3% bags accounted for damaged ones or pilfered bags (3.4 million bags) and 5.5% bags were stolen or lost bags (1.3 million bags) of all the mishandled baggage. In general, a mishandled bag costs around \$0.73 per passenger which is not a very big amount as the operating cost is \$216 per passenger (SITA, 2015).

Now that sufficient understanding is obtained regarding mishandled baggage, there is a need to know the reasons why baggage mishandling occurs and also which is the biggest reason for baggage mishandling with the help of literature study.

There are various reasons why mishandling of baggage occurs. The most common reason for mishandled baggage is transfer luggage which 49% of the time is the problem. An interview of a baggage handler that was accessed during literature review also has the same message where he says, most of the times baggage is lost or delayed due to late check-in or else transfer of baggage between flights (Teideman, 2013)(SITA, 2015). The next reason due to which mishandled baggage occurs is due to failure to load the luggage on the specific flight and due to ticketing

error/ bag switch/ security reasons/ other. Both these reasons account for 15% each (SITA, 2015).

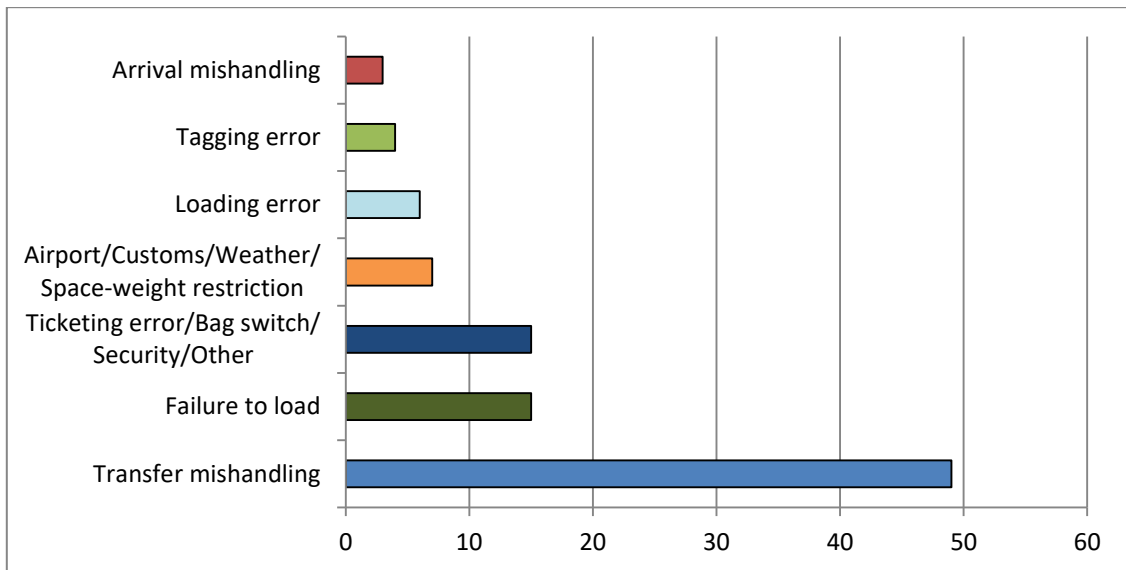


Figure 7 - Reasons for baggage Mishandling (in percentage) (SITA, 2015)

The other reasons for baggage mishandling are Airport/ Customs/ Weather/ Space-weight restrictions which accounts for 7%, loading error accounts for 6%, 4% of the time mishandling occurs due to tagging error and lastly 3% due to arrival mishandling. All these can be seen from a representative graph whose data has been sourced from SITA(2015).

The figure below is a Fishbone diagram that summarises the reasons of baggage mishandling in a different perspective.

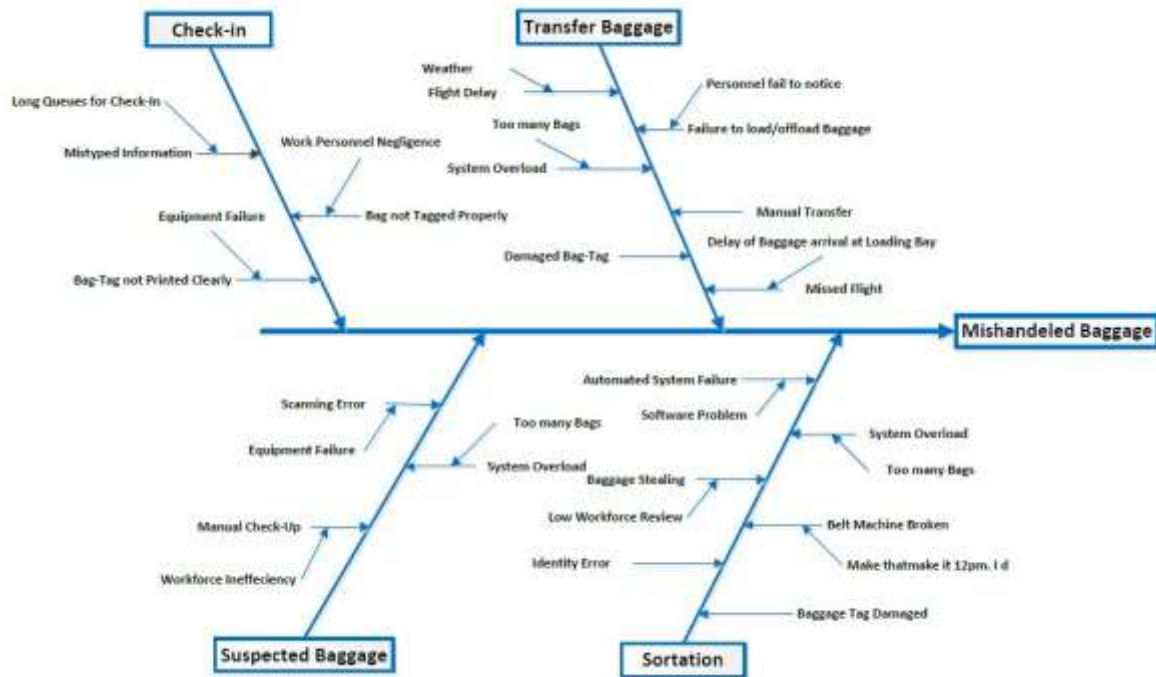


Figure 8 - Fishbone diagram showing the reason of mishandle luggage

2.4.3 Present baggage identification technology

In the below topics, the present technologies used for baggage identification at the airports will be introduced. Prior to 1990, paper tags were knotted to bags with details of the passenger, airline name, flight details. Post 1990 most of the airlines started using barcoded base tags and by 2005 2D printed barcode tags were implemented. RFID tags emerged as a notable competitor to the barcode type bag tags. A detailed introduction will be provided below to the barcode tags and RFID tag systems (COUGHLIN, DAVIS, NEE, NEMIROVSKY & SNOW, 2010).

2.4.3.1 Barcode tagging system

At the moment the most widely used system for baggage tagging is the barcode tagging system. At check-in counter the passenger gets a small slip with a barcode on it and a long slip that is attached to the bag that needs to be checked-in. In case a bag is lost or mishandled, its location can be found through the barcode. Even though it is most widely used system it has its drawbacks, as a result aviation industry faces problems from mishandled bags and lost bags. Few of its problems are mentioned below (Emese Bite, 2008).

Problems-

- The barcode needs an optical reader and can only read a barcode in the line of its site.
- Barcode read rate has an accuracy of 85% as a result it creates a possibility of loss of bags.
- Barcode cannot be read if the bag tag is crumpled. As a result the tag cannot be decoded.
- Barcode paper can come off as a result the possibility of misplacing a bag increases (Emese Bite, 2008).

2.4.3.2 Active tagging system

Radio frequency identification or better known as RFID tags are said to be the new addition to the market to make baggage handling process better and reducing baggage mishandling and loss. As explained in the paper of Emese " *The RFID tag is a silicon chip which emits a radio signal which is same as to that of the user-defined serial number of an item*" (Emese Bite, 2008).

The RFID tag has its own advantages and disadvantages. We first look in to its advantages and then disadvantages-

Advantages

- Unlike the barcode tagging system, RFID tag does not need an optical reader as they need an antenna to read the signal emitted by it.
- High number of bags can be kept an eye on simultaneously.
- The reading rate of RFID tags is higher than that of Barcode tags i.e. 95-99%

Disadvantages

- The cost of RFID tags is recurring and can fluctuate (Zhang, Ouyang & He, 2008).
- There are privacy issues with the RFID tags as there is a possibility of someone else catching the frequency as a result can become a security issue (Verdult, 2008).

2.5 Security check of check-in baggage

The security of all the passengers at the airport and in flight is very important. Hence, just like the passengers need to go through security checks before boarding flight, the checked-in baggage also undergoes security checks. The procedure for security check for checked-in baggage varies as per region and airport however to explain it easily information provided by Geo Robson & Co Ltd. will be taken.

Once the bag is checked-in the luggage travels on the conveyor towards the destination gate to be loaded on the plane. During this period it goes through security checks to negate any kind of threats. Before the bag reached the first level of check the bag is loaded on tray and the computerised system checks if the bags are overlapping or awkwardly placed on the tray. Once the baggage is placed and spaced well so that the bags can be identified without confusion. The first level of baggage check is an automated X-ray scanning machine which can detect any questionable object. If the level 1 scanning is not successful the bag is transferred to level 2 where the object is scanned again and the image shows up on the screen along with the image that was scanned at level 1 where an attendant checks it. If the attendant still cannot clear the suspected baggage then the baggage transferred to a level 3 check (Robson Handling Technology, 2016).

At the level 3 check the attendant has more freedom to manipulate the image and to take a decision if the baggage in question is a genuine threat. Along with this at level 3 the attendant has access to a printer where he/she can stick the print to the baggage to categorize the baggage like failed level 1, failed level 2, tracking error, etc. The baggage that is not cleared at level 3 is a clear threat as a result needs to undergo manual check (Robson Handling Technology, 2016). After the baggage is cleared it is loaded back in the system after which the baggage reaches the destination terminal with the help of computer guidance which reads through its 10 digit barcode.

During the course of literature review there was a question on wuora.com which asks about the security check procedure of the checked-in baggage. The response of Tanvee Sait and Mohanraj Jayaraman concur to the procedure of level 4 check. As per their blog profiles they are working or related to airline industry. As per their responses all checked-in baggage undergo security scanning and in case a

suspected baggage is found the baggage is opened and the suspected item is removed from the baggage and a notice is pasted on the bag signifying a detailed open bag search was carried out (SITA, 2015).

2.5.1 Security Services

Security has been an important aspect of airline industry and since 1970's there has been significant importance given towards it. As a result the security incidents have reduced constantly, barring the incident of 9/11 which can be seen from the figure below (IATA, 2011). At present, security service is either provided by the government or the airlines which hire a private agency for the same. However, it is the duty of the airlines to finance these security agencies irrespective of them provided by the government or hired privately (IATA, 2011).

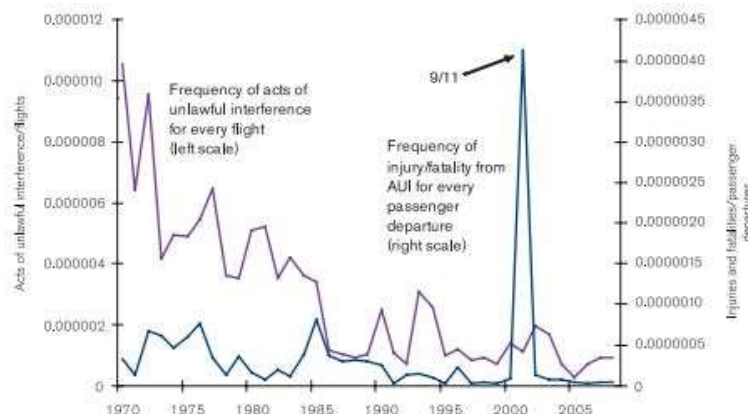


Figure 9 - Security Incidents (IATA, 2011)

Over time technological improvements and automation have improved the security. Threat of baggage being stolen has reduced significantly as the baggage arrival in the baggage reclamation area is aligned with the passengers in the arrival area. Similarly, due to automation security checks in the system have been significantly fast, reducing the check-in baggage transfer times. Security and customs checks have reduced significantly as the checks are done in advance by profiling the passenger and the baggage as per the level of potential of risk (IATA, 2011).

2.5.2 Future of Security

Soon detail updates will be provided to the passengers regarding the locations of their baggage eliminating possibilities of mishandled baggage. Similar systems are used by airlines airports to monitor passengers so that the flights will not be missed.

'Big Brother' system will help in storing data of each and every passenger in the world to make seamless movement for the passengers and their respective baggage from passport checks, immigration checks and customs check (IATA, 2011).

Airports Authority of India with the help of SITA has taken up the bag manager system that will help the organisation and security personnel to determine which passengers have boarded the flight and which baggage have been loaded. This system will help in finding out mismatches which will improve the security immensely even before the flight takes off (SITA, 2016). This way suspected explosives or terror activities can be avoided.

A new type of baggage pick-up and drop service can become the way for the future in which the baggage is picked from a location out of the airport. In other words it can be said to be offsite baggage drop service. Abu Dhabi Airports is one such company that is providing such service. However it is not offered as a mainstream service for passengers. Also the security checks in this offsite baggage drop service can vary from the security checks done at the airport (Ghee, 2013).

2.6 Chapter summary

This chapter discussed the different types of models that are used to measure service quality. Of all the models mentioned it was found that the SERVQUAL model and Grönroos model were the two most well used models. Based on the detailed discussion of the two models it was decided that SERVQUAL model would be suitable for measuring service quality for airline ground services. The drawback of SERVQUAL model is addressed by using Best Worst Method (BWM).

A discussion between service quality and customer satisfaction was done to know the connection between the two terms. Next, the various dimensions of SERVQUAL model were explained in detail. The explanation of the dimensions helped in segregating all the attributes under the right dimension.

It was important to make a list of attributes that could come under the five dimensions. Hence, it was necessary to know the ground service process. To do so, the whole ground service process was understood. Next, the aspect of baggage handling systems was discussed in detail. The baggage mishandling aspects were

known and also the currently used technologies for baggage handling were understood.

Finally, the security aspect being an important part of the ground service process was also discussed in detail. The various stakeholders for security were known followed by the future of security of airline ground services. The discussion of all these topics was important for being able to select a suitable model to measure service quality, followed by having a list of all the attributes that fit below dimensions.

3.0 Methodology

This section is meant to shed light on the methodological considerations in the thesis. This section is divided into multiple parts of which the first part is the qualitative data collection. The second section deals with quantitative data while the third section looks into sampling. The fourth section discusses regarding testing of survey. Finally, in the fifth section discusses about Multi criteria decision making (MCDM) and elaborates BWM.

3.1 Qualitative data collection

In this sub-section the design of the study will be elaborated, along with the considerations. Firstly, information will be provided regarding the interview method was selected after which how data analysis was done for this leading to a modified attributes of the dimensions.

3.1.1 Semi-structured interviews

These interviews were planned for being sure if the attributes of the dimensions selected are useful. If not useful then based on these interviews changes can be made. Since the nature of the research was exploratory it was necessary to have a loose approach to the interviews. Initially it was planned to carry out focus group interviews. However, in the situation it was not possible to gather the planned participants together for the interview. Based on situation at hand, semi-structured interviews were appropriate as that way data can be gathered from a wide area.

As mentioned above, the reason for the semi-structured interview is to make sure if the dimensions selected are in-line with the customer requirements. For having credible data from the interview, ideally 4-10 participants are required with sound knowledge regarding the topic of discussion so that significant contribution can be made in the preliminary research. Also while interviewing it is necessary for the moderator to see to it that the participant does not dominate the discussion. This qualitative interview approach will be a good way to test if the dimensions of the framework are appropriate for the research (Blumberg et al., 2005). It is necessary for us to make two more choices, other than participants being knowledgeable regarding the topic.

First, choice is about the composition of the participants, whether it should be homogenous or heterogeneous in nature. The selection of the members is based on the topic of discussion as a result for this topic the composition will be heterogeneous. The balance of the gender in the interview will also be equal as airline customers are equally distributed as the number of flyers is equally distributed (Cohen, 2006).

Second, it should be seen to it that participants do not interact with each other about the interview as that can cause the participants yet to be interviewed to manipulate their answers leading to data that cannot be relied on (Blumberg et al., 2005).

Selecting participants for interview

For gathering useful data, to make sure the research model is good, it is necessary to select participants with sound knowledge with airline travelling. This complies with Rabiee (2004) where he has argued that the selection should be analytical selective. It means that there should be representation of the characteristics of the research problem in the group of participants.

Six members were selected for the interviews. These participants ranged from four nationalities i.e. India, China, a European national and United States of America (USA). The age group ranged between from 20-38 years of age as that that represents a bigger market share at the moment and also for the future the age group is more representatives (Pearce, 2014).

The shortlist for interviews was done based on passengers that had travel at least two times a year, may it be leisure or business. This was necessary because the participants that are well travelled as passengers, can provide detailed and seamless flow of information. Along with this they have more information to share. The interview conversations have been added in the appendix. Even though the information for the interview is provided, the identity of the participants of the interviews has been kept confidential.

Guide of the interview

During the course of the interview it is important for the interviewer to maintain command over the proceedings. Hence, a funnel type approach to the interview will

be good to get a detailed response. In the funnel type approach the start of the interview is kept unstructured so that the initial responses can be made known with minimal involvement of the interviewer and then later in the interview the responses are more structured with detailed questions aimed in relation to the proposed dimensions of the model research. An interview guide is a good tool for carrying out funnel type interviews. It maintains a natural flow and then later on the related topics are discussed in detail. During the course of the interview the order of questions can be changed or new questions can be added. Mainly, it should be noted that it is very important for the interviewer to listen to the participant (Blumberg et al., 2005). There will be six stages to each interview-

- *Arrival-* Greeting the interviewee at arrival is highly important to make a positive impact and make them feel at ease. This way it is possible to get information from the participant with ease.
- *Introduction of Research-* The purpose of the interview will be specified at this stage. Moreover, the participant will also be informed that the interview will be recorded for data collection purpose.
- *Start of the interview-* The start of the interview will be focused at giving the interviewee confidence and also to get background information before dwelling deeper to gather data.
- *Mid-course of interview-* The mid-course of the interview will be dominated by the topics related to the topic of research.
- *End of interview-* As the end of the interview approaches small cues should be given to the interviewee's so that they know about it.
- *Post interview-* Post interview it is important to express gratitude to the interviewee's by thanking them. Additional information will be provided about what will be done with the information that is gathered from the interview. Attention should be paid to the information that is given after the interview as

most of the times it is possible that interviewee feels like giving more information even after the interview is over.

Interview Validity

For the interviews that are part of the qualitative data collection, the interviews must be valid. There are three requirements for interviews to be valid as per Blumberg et al. (2005) are, firstly the participants should have the knowledge to answer questions that are being asked by the interviewer. Secondly, participant should understand that his/her role is to provide information. Finally, the participant must be motivated to share the information with the interviewer.

The participants selected for the data collection have considerable flight experience. Hence, it can be said that the participants have considerable information regarding the topic at hand. The introduction of the interview is in the Appendix and it can be seen that the purpose of the focus group has been made clear to the participants and they know how the information gathered from the interviews will be useful in obtaining results. This opening statement meant that they knew what information the participants had to provide and also were motivated to help in improving the airline service quality. From this we can say that the interviews were valid and also complied with the prerequisites for the interviews to be a success.

Content Analysis of the qualitative data

It was important to analyse the data that was gathered from all the interviews. Even though semi-structured interviews were carried out, the data that is available from the interviews is highly unstructured. Hence, it is necessary to sort all the data so that all the relevant and useful information can be extracted. Content analysis is necessary to sort the data and also to queue it up. As per (Blumberg et al. 2005) content analysis has a lot of flexibility to analyse a wide variety of unstructured information so that valuable data can be extracted. There is one drawback of content analysis as per (Blumberg et al. 2005) which is that the content analysis heavily relies on the interview quality. But this drawback can be said to be not applicable in this case as the data gathered is perceived to be valid.

Data Analysis of qualitative data

For data analysis as mentioned above, content analysis principles were used and the relevant information was summarized. For this thesis the interviews were first listened after which the quotes that were related to an attribute were written under it. In total there were six interviews that were carried out which lasted between 45 minutes to 1 hour 30 minutes.

Content analysis should be followed in a stage-by-stage manner starting by segregating of categories as per (Blumberg et al. 2005) which concurs with the method used for this thesis. Quotes which did not fit under an attribute of the framework based from literature review then were noted down under the dimension and close attention was paid to it during the course of the whole data analysis so that repetition could be noted. If there was a high mentioning from the participants for a new attribute then they were mentioned added as an attribute in the research model. As per this method from the qualitative data analysis two attributes were found to be not useful, as a result have been highlighted in red colour in table below. While two attributes were found to be not clear as a result needed to be rephrased and have been highlighted in blue. Finally, one new attribute was thought to be useful and was not a part of the old research model, as a result was added and marked in green colour.

Table 2 - Findings of content analysis

Attributes	Number of Quotes	Service Quality Dimensions	Number of Quotes
Physical facilities	5	Tangibles	15
Advance equipment	8		
Personnel	2		
Consistent service	7	Reliability	29
First time right	8		
Consistent inspections	7		
Dependability to handle bureaucratic issues	7		
Efficient Guidance	1	Responsiveness	25
Willingness to help	11		
Prompt service delivery	0		
Prompt handling of request	13		
Trustworthy crew	5	Assurance	16
Knowledge to answer questions	4		
Crew Courteousness	7		
Personal attention	6	Empathy	22
Your best interest at heart	9		
Understand needs	7		

The five attributes highlighted in table above will be quotes of the respondents to justify changes.

Tangibles

The term “Equipment” was changed to “Advanced Equipment” as the respondents did not relate to the term equipment. But they did immediately connect when mentioned advanced equipment. Hence to make sure that the respondents connect with the attributes easily there was a need to rephrase the attributes. During one of my interview the female participant responded saying “*User interface should be good and modern*”. Due to similar statements made by the participants this attribute name was changed. As seen from the table advanced equipment was addressed by the participants 8 times.

Reliability

In this dimension initially announcements and inspections was mentioned. This attribute did not work well with the participants in the interviews. However, consistent inspection was mentioned during the interview a few times (7 times). One of the participant responded saying “*During security check the security personnel kept the branded milk to themselves and returned the cheap brand milk to us. This was very inconsistent from them*”. As a result, the name of attribute was changed from “announcements and inspections” to “consistent inspection”.

On the other hand, a new attribute was added in this dimension as it was mentioned by the participants to a notable level. One of the participants mentioned “*my baggage was damaged during the flight but I did not complain or ask for compensation as I was not sure if they would believe me*”. In total this topic was mentioned 7 times as a result it was added as a new attribute.

Responsiveness

For responsiveness dimension there were two attributes to which the participants did not feel were important as they did not mention them. The two attributes are highlighted in red in the table above; “*Efficient guidance*” and “*prompt service delivery*” were those two attributes. Also there was a notable overlap between prompt service delivery and prompt handling of requests. Since these did not relate with the participants the two attributes were removed from the responsiveness dimension.

Modified attributes for the survey

As explained above, after making changes in the dimensions based on the results of the qualitative data analysis the modified attributes are provided in the table below.

Table 3 - Modified attribute list

Attributes	Service Quality Dimensions
Physical facilities	Tangibles
Advance equipment	
Personnel	
Consistent service	Reliability
First time right	
Consistent inspections	
Dependability to handle bureaucratic issues	
Willingness to help	Responsiveness
Prompt handling of request	
Trustworthy crew	Assurance
Knowledge to answer questions	
Crew Courteousness	
Personal attention	Empathy
Your best interest at heart	
Understand needs	

3.2 Quantitative data

Now that the modified attributes are known through qualitative data analysis the next step was to make a questionnaire for the survey. The final questionnaire is attached in the appendix. This sub-section explains the process of making of the self-made survey.

3.2.1 Self-made Survey

For the self-made questionnaire it is necessary to ask the right question or else there is a possibility for the survey not being useful for research. In order to get the needed data, the questionnaire was be divided into sections. In total 31 questions were asked in the survey to help in acquiring the needed data. It was seen to it that the questions did not exceed 40 questions as that could have led to the respondents getting tired and leaving the survey incomplete.

First section will give a brief introduction about the questionnaire to the participants' giving a brief explanation of the survey. This introduction will inform the respondents how the survey will benefit them, giving them motivation to complete the questionnaire followed by questions that were focused to gain information related to measuring service quality. Part 1 consists of 21 questions aimed at acquiring the respondents' preferences of service quality. This part is core of the survey and is placed first so that the respondents finish the important part of the survey first. The answers to the questions were answered with the help of 10- point likert-scale. The reason for 10-scale being preferred compared to other options, the responses given by the respondents will be less towards the centre. According to Blumberg et al., (2005) with a small scale the respondents can be reluctant to give extreme responses due to which they will tend to focus on responses around the centre.

The second part of the survey is fairly short containing only four questions that will consist of questions to know expectations for service. The questions will have five options to select from namely; *Very low, low, medium, high and very high*.

Finally, part three is focused on gathering information regarding demographic aspects of the respondents like nationality, age, profession, times travelled by air per year and gender. In total six questions are asked. The structure of this survey does not concur to the arguments made by Blumberg et al. (2005), that says the survey should start with more general questions followed by the core topic related questions. The survey is structured this way because the respondents can provide most important data first and later the data that is easy for the respondents to fill without much effort.

3.2.2 Making of Survey

Since it is already known that the survey was to be shared online and also passengers at airports were asked to fill the survey by sharing the link. Hence there were three survey making websites were shortlisted on which the survey could be made and shared. The website itself stored the data of the respondents making it possible to be accessed anytime. After a study of three websites; *surveymonkey, typeform* and *surveygizmo* it was decided that *surveygizmo* will be used to make the survey.

The reason for selection of this website was because the logic of typeform was more complex to make the survey. This made it really hard to make the survey efficiently. Furthermore, the other problem was that typeform could not be shared in China as it was not legal in China like Google and Facebook.

As for surveymonkey the website proved to be quite competitive in terms of features with that of surveygizmo. But on the flip side the charges of surveymonkey were high leading to the final decision of using surveygizmo to make the survey.

The sample survey sample has been provided in the appendix.

3.2.3 Language selection for survey

Since the survey was aimed for people of India, Indonesia, China, United States of America and an EU country it was decided to make the survey in English. There are a lot of languages that are spoken in those regions as a result the most commonly spoken language was selected. It was considered to make a survey in Chinese. However, the complexity of the survey making made it a challenge to translate the language.

3.3 Sampling

The survey was sent online to multiple people all over the world. However, the main focus was on getting maximum responses from countries like China, India, Indonesia and United States of America (USA) while countries of Europe were also be a part of focus. The reason for having major focus on the three countries mentioned above is because according to Pearce, (2014) these countries will be the largest market for passenger airlines.

To acquire the required data as mentioned in the previous topics an online survey was be carried out. The details of survey have been provided in the appendix below. The collection of information from members of the population that are easily able to provide information is called as convenience sample. This is the best way to get information quickly and efficiently (Sekaran & Bougie, 2010). However, it was also made sure that actual people flying out of a destination were made to fill the survey. This was possible by making a visit to the airport and interacting with people flying to

other destinations. The respondents at the airports were targeted based on their destinations.

3.4 Testing of the survey

To make sure that the survey is easy to understand for the respondents a pilot test was carried out. In a pilot test, prospective respondents were chosen to fill the survey and asked to give their feedback so that necessary changes were made to the survey. Objective of the pilot testing was-

- Detect biased questions, confusing questions, survey structure.
- Information provided in the survey.
- Time taken to answer the survey.

The respondents to the survey were, supervisor (Dr. Jafar Rezaei) and a number of peer students. The completion time of the survey was tested to see to if completion of survey took a long time. The completion time of the survey was between 7 minutes to 8 minutes 30 seconds

Based on the feedback received it was found that the logic given to the survey was good. However, there were a few questions where intermediate values were found to be missing. The introduction to the survey was changed to make it appealing to the respondents and terms related to the survey questions were introduced in the after the introduction statement.

The most important change was removal of two attributes from the reliability dimension. The participants of the pilot test found *consistent service* and *consistent inspection* similar, making it hard for them to select between the two attributes. To negate this problem the attribute of consistent inspection was removed. The changed attribute list is provided in the table below. The other attribute that was removed was *dependability to handle bureaucratic issues*. Respondents related this attribute to *prompt handling of request* and *consistent service*.

Table 4- Post pilot-test attribute list

Attributes	Service Quality Dimensions
Physical facilities	Tangibles
Advance equipment	
Personnel	
Consistent service	Reliability
First time right	
Willingness to help	Responsiveness
Prompt handling of request	
Trustworthy crew	Assurance
Knowledge to answer questions	
Crew Courteousness	
Personal attention	Empathy
Your best interest at heart	
Understand needs	

3.5 Multi-criteria decision making (MCDM) - Best Worst Method

Decision aiding is the activity of the person who, through the use of explicit but not necessarily completely formalized models, helps in obtaining part of responses posed by a stakeholder. These parts work in the direction of proposing a decision and help stakeholders achieve their objectives (Figueira, Greco and Ehrgott).

Every method that has evolved for MCDM varies based on different criteria like assumptions, requirements of information, decision and analysis models. Hence, it is important to select the right method for tackling the issue at hand, since the selection of an unsuitable method can lead to misleading results (Singh & Malik, 2014).

When more than one criteria comes in to play, it is important to take into account all the criteria involved in the decision making to compare potential actions to one another. Multi-criteria decision making (MCDM) has a short history of 40 years. However, within this short span of time there have been numerous types of MCDM that have been developed by researchers. Around 70 methods have been developed to give an approximate number.

Two categories can be formed below MCDM, namely; Multi-Attribute Decision Making (MADM) and Multi-Objective Decision Making (MODM). MADM as the name suggests is the selection of suitable alternative from a list of predefined alternatives.

MODM on the other hand is the selection of the best choice that fits the decision maker's constraints from an infinite or big list of options (Singh & Malik, 2014).

As per (Figueira, Greco and Ehrgott) there is a lot of literature on Multi-attribute decision making (MADM). There are a number of ways to classify MADM methods. One of the method is based on the type of data that is used i.e. there are deterministic, fuzzy or stochastic methods that can be used. Another way to classify MADM methods is based on the number of decision makers that are involved. There can be a single decision maker or multiple decision makers involved. Lately, Weighted Sum Model (WSM), Analytical Hierarchical Process (AHP), Revised AHP, Weighted Product Model (WPM), the Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) have developed.

WSM is one of the oldest method. WPM is considered to be a modification of the WSM. The modification of WPM addresses the shortcomings of WSM. In comparison, AHP is fairly recent in development and is being more frequently used in MCDM related research (Webster, 1998).

One such method that has recently been developed is called as the Best Worst Method (BWM). This method addresses the problems of the comparisons that the past methods experienced. In other words the Best Worst Method (BWM) needs less comparison data due to which there are less issues with the inconsistency that are experienced by pairwise comparison (Rezaei, 2015). The BWM has been compared with the Analytical Hierarchy Process by Rezaei (2015) as it is a pairwise comparison method and also one of the popular MCDM methods.

The reason why the BWM is better than the AHP is because most of the times a decision-maker gives the direction and strength of a preference. The decision-maker faces no problems while expressing the direction in most of the situations. However, it can be a challenging task for the decision maker to express the strength due to which inconsistency occurs. In BWM, the best criterion and the worst criterion are selected, after which the best criterion is compared to other criteria. Similarly, other criteria are compared to worst criterion. Due to this, the total number of comparisons reduce, in-turn reducing the amount of inconsistency.

However, it is necessary to know that BWM has its applications in various markets. Rezaei et al. (2016) applied this methodology for selection of suppliers in new markets. The application of BWM to the authors study gave them a “*meaningful ranking of suppliers*”. Rezaei, Wang and Tavasszy, (2015) made use of BWM for the purpose of supplier segmentation so that supplier strategies can be made according to the segmentation. As per the authors, the report is fairly important, as it helps organisations to use managerial resources more efficiently. Sadaghiani et al. (2015), worked on increasing the effectiveness of sustainable supply-chain in Oil and Gas industry. Similarly, Chitsaz et al. (2016), Gupta et al. (2016), Torabi et al. (2016) and Salimi et al. (2016) have adopted BWM and had fruitful results.

Moreover, the BWM is also used in study of optimal bundling configurations in ground transport of air freights, by Rezaei, Hemmes and Tavasszy, (2016). The market study is for aviation sector which is relevant for this thesis, making use of BWM more lucrative. Based on this discussion it can be said that BWM method will be suitable to be used in the current study with multiple criteria and sub-criteria involved.

3.5.1 Best Worst Methodology (BWM)

BWM is multi-criteria decision making method which uses an optimization model to determine the weights of the criteria. This is possible by doing pairwise comparisons, best criterion with other criteria and other criteria compared to the worst criterion selected by the respondents to the survey. For this method a linear minmax model is used, the steps are explained below (Rezaei, 2016).

Step 1 – A set of decision criteria are identified that must be used to reach a decision.

Step 2 – As per the personal preference the decision maker selects the best criterion and worst criterion among the available set of criteria.

Step 3 – The decision maker then carries out pairwise comparisons between the best criterion and other criteria. This is done by determining preferences using a number between 1 to 9, where 1 = Equally important and 9 = More important. The resulting vector of this is as mentioned below and $a_{BB} = 1$

$$A_B = (a_{B1}, a_{B2}, \dots, a_{Bn})$$

Step 4 - The decision maker then carries out pairwise comparisons between the other criteria and worst criterion. This is done by determining preferences using a number between 1 to 9, where 1 = Equally important and 9 = More important. The resulting vector of this is as mentioned below and $a_{WW} = 1$

$$A_W = (a_{1W}, a_{2W}, \dots, a_{nW})$$

Step 5 – Finally, the optimal weights need to be calculated for the criteria (w_1^* , w_2^* , ..., w_n^*) and ξ^{L*} . Hence the maximum absolute differences $|w_B - a_{Bj} w_j|$ and $|w_j - a_{jW} w_W|$ are reduced to minimized to obtain unique solution of weights.

$$\min \max_j \{|w_B - a_{Bj} w_j|, |w_j - a_{jW} w_W|\}$$

$$\sum_j w_j = 1$$

$$w_j \geq 0, \text{ for all } j$$

Solving the problem presents the optimal weights (w_1^* , w_2^* , ..., w_n^*) and ξ^{L*} .

Furthermore, ξ^{L*} can be considered as an indicator of consistency of comparisons, i.e. there is high level of consistency for values close to zero.

As seen from the research model for this thesis, it can be seen that there are criteria and sub-criteria. Weighting is done for the 5 criteria (Tangibles, Reliability, Responsiveness, Assurance and Empathy) and also for the sub-criteria. For obtaining the global weights for each criterion the weights of corresponding main criterion should be multiplied to the weights of each sub-criterion.

BWM is applied to the sub-criteria of the five main criteria. Here L is the number of sub-criteria for Tangibles criteria which gives w_l . Similar to the weights of main criteria, sum of all the weights w_l should be equal to 1 and all the weights w_l should be ≥ 0 . For sub-criteria of tangibles the global weights can be calculated by the formula below.

$$w_l^{Tan} = w^{Tan} \cdot w_l$$

Similarly, for other sub-criteria of the respective main criteria the equation to measure global weights is;

$$\text{Reliability: } w_m^{Rel} = w^{Rel} \cdot w_m$$

$$\text{Responsiveness: } w_n^{Res} = w^{Res} \cdot w_n$$

$$\text{Assurance: } w_o^{Assu} = w^{Assu} \cdot w_o$$

$$\text{Empathy: } w_p^{Emp} = w^{Emp} \cdot w_p$$

With the help of above explanation the results of BWM will be provided in the results sub-section.

3.6 Chapter Summary

This chapter discussed the methodological considerations of this thesis. First, qualitative data collection was discussed in detail. As part of qualitative data collection, semi-structured interviews were elaborated giving a detailed explanation regarding the type of interview that was used. Various topics like flow of interview, interview participants' selection and a detailed guide to the interview was provided. Furthermore, the after the collection of the qualitative data content analysis, interview validity was done followed by the modified attribute list.

Second, quantitative data collection was discussed. A discussion on self-made survey was done which provided a composition of the questionnaire, language in which the questionnaire was shared and the platform on which the survey was made. Third, a brief discussion was done regarding the sampling of the survey, followed by the outcome of the pilot tested survey.

Lastly, a Multi-criteria decision making was discussed in detail. A brief explanation was given regarding MADM and MODM. The BWM method was introduced after which a short comparison was provided between AHP and BWM. Finally a detailed explanation of the BWM was given through which it would be possible to solve the method in Microsoft Excel solver.

4.0 Analysis and Discussion

In chapter 3 the methodological considerations were discussed. Furthermore, the changes to the research model were made based on qualitative data analysis. The changes set a good platform to be sure that the quantitative results obtained will be useful.

Chapter 4 will be divided into four sections. First section looks in to quantitative data collection where an in-depth explanation will be provided about the way data collection was done. Second section looks in the way data analysis was done. Third section gives a detailed view of the respondent demography with the sub-sections giving the BWM results and statistical analysis of main criteria and sub-criteria with the help of One-Way ANOVA and K-means cluster analysis. Finally, last section summarizes the results of the sections in this chapter.

4.1 Quantitative data collection

It is important to know how the process of data collection was carried out. How the survey was shared and how the responses were received. There is an advantage of sharing survey through social media and other electronic applications. When shared for the first time network effects come into play. It has the possibility to spread the survey from one person to other faster. However, survey shared online has a disadvantage. It is not possible to be physically present to see to it that the survey is completed by the respondent, the completion rate of the survey is generally low.

The survey link was shared immediately after the pilot test was done and necessary changes were made. The survey link was shared via LinkedIn, Gmail, Whatsapp and Facebook. It was highly important to get the initial responses, as the first respondents are always the ones that are genuinely interested to fill it and the reach is higher. These respondents were also responsible for sharing the survey link further with their contacts. As a result, during the first 24 hours 87 respondents attempted to fill the survey however, the response rate was a lowly 27%. On interacting with respondents it was found out that the mobile respondents could not complete the survey. After a study of the coding, it was found out that the coding done for the questions was very high for the mobile platform to handle. As a result, the coding was simplified for mobile application to handle.

By day 2 of survey sharing 156 respondents attempted to fill in the survey and the completion rate had gone up to 33%. From personal social media experience it was important to not keep on sharing the survey. It was important to make sure survey link was shared effectively.

Personal messages were sent to share the link survey through Whatsapp and Gmail. While sharing from this social media platform it was important to keep constantly messaging people to see to it that they completed the survey. LinkedIn was used as a professional platform to get responses as well. To get responses from Chinese and USA citizens, measures were taken so that colleagues and their contacts got the survey link. The survey was shared on Facebook pages of Universities of United States of America and other Chinese national's abroad groups.

The second round of sharing on social media was done exactly ten days later. By then 238 respondents took the survey but only 35% of the respondents managed to complete the survey. This helped the survey responses increase to 313 respondents and completion rate went up to 166 respondents. On the other hand reminders through private messages were constantly sent so that respondents did not forget to fill in the surveys. People flying to different countries were asked to fill the survey at Schiphol, Abu Dhabi, Delhi and Mumbai airports as it helped in increasing the completion rate of survey and also increasing the reach of survey respondents.

The third round of sharing was done ten days later again through social media helping the responses to increase to 480. However, the total number of surveys that were completed by the respondents was 241.

4.2 Quantitative data analysis

Before jumping to data analysis it is necessary to process the data that is gathered. It is not always necessary that the data gathered is useful for the research. The first section will discuss about data processing so that only useful data can be gathered.

4.2.1 Data processing

Data processing means that the raw data that is acquired is filtered and set before BWM is used. In this particular process, responses which are irregular are removed.

There were in total 24 responses that had irregularities as a result they were eliminated. By irregularities it means that the respondents had same answers for all the questions. Apart from the ones that had irregularities, there were certain responses that had answers for all the questions, those were the test responses. In total 12 test responses were eliminated bringing down the total count from 241 responses to 205.

Since the study is focused to a specific demography, responses from other countries have been eliminated. There were responses from countries like Mexico, Argentina, Brazil, Canada and United Arab Emirates. As a result total responses came down from 205 to 190. The number of Indian respondents were more than respondents of other nationalities. Hence, to balance the respondents of Indian nationality, the responses of Indian nationals were reduced from 91 to 41 by randomly eliminating, bringing the sample size to 140. With the help of this data the data analysis will be done.

4.3 Descriptive analysis

This topic is divided in to a number of sub-topics to discuss the results that were generated from this thesis. First sub-topic sheds light on respondent demography, followed by the BWM results. Lastly, the statistical analysis of main criteria and sub-criteria is carried out to know the different preferences between the nationalities.

4.3.1 Respondent Demographics

As seen from previous topics, in total 241 respondents managed to complete the survey. Of the 140 respondents 29.29% respondents were Indian nationals while 22.86% were citizens of a European country. Indonesians responses were at 20% while 14.29% of United States of America citizens managed to complete the survey closely followed by Chinese citizens at 13.57%. From Figure 10 it can be seen that the spread of the responses between nationalities is fairly balanced.

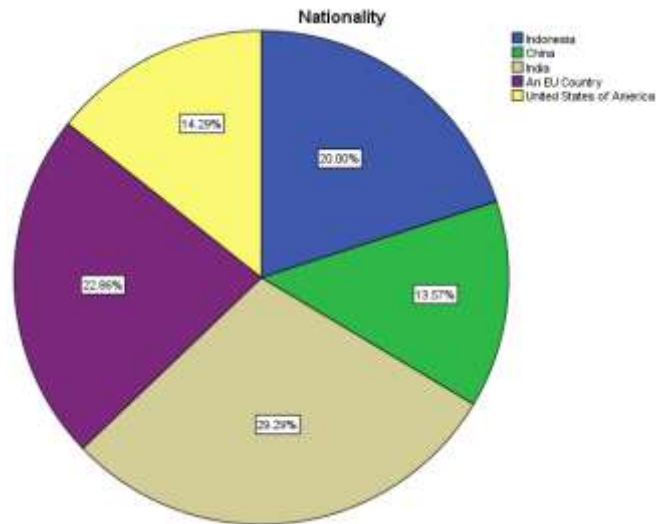


Figure 10- Respondents categorised according to nationality

As for the gender breakdown approximately 55% respondents were male while 45% respondents were female. To put it in exact count 63 respondents were female and 77 were male.

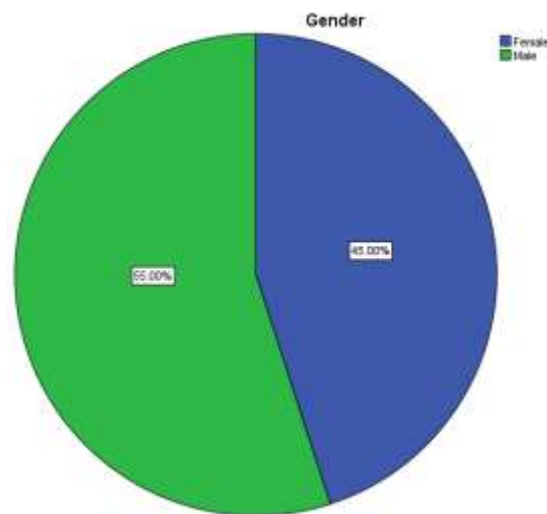


Figure 11 - Respondents categorised according to gender

For the question, purpose of travel, 57.14% respondents selected leisure as their preference. While 32.14% people selected work as their reason for flying. There were 10.71% respondents who said they travel for other reasons which are not known.

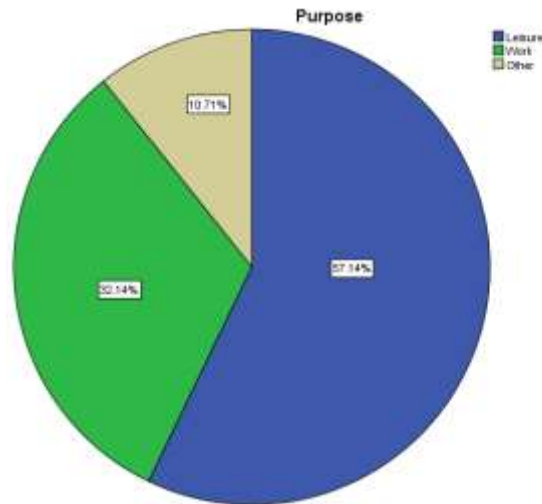


Figure 12 - Respondents categorised according to purpose of travel

Of the 140 respondents 51.08% respondents were students while 32.25% respondents were working for some organisation. There were 7.91% respondents were self-employed while one respondent was a retiree (0.72%) and 5.04% respondents were from other category.

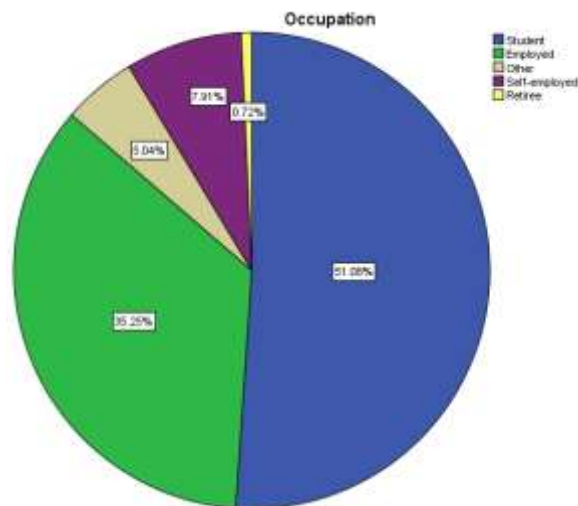


Figure 13 - Respondents categorised according to occupation

As for the age group of the respondents the focus was to gather data from young respondents as these age groups in future will dominate the market needs. Of the responses useful for study 20.00% were from 18-24 age group and 62.86% were from 24-30 age group. Approximately 11.43% respondents were of 30-36 age group and 4.3% are of 36-42 age group while 1.4% were above 42 years age.

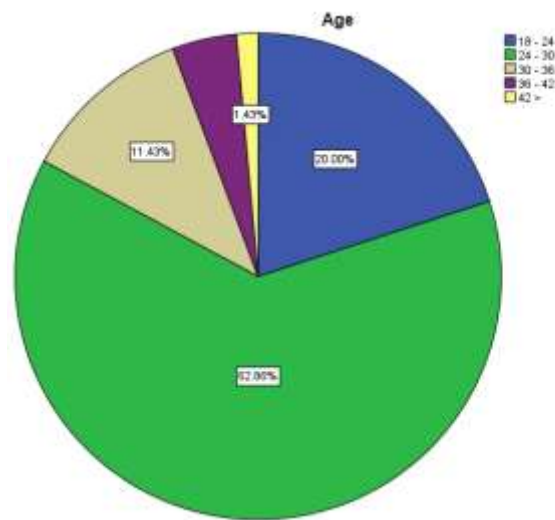


Figure 14 - Respondents categorised according to age group

4.3.2 BWM results

By solving the equations of BWM in Microsoft excel solver, the weights of different criteria and sub-criteria were obtained. Figure 15, shows weights of the main criteria on the basis of responses received from the respondents in the surveys. Based on the average values obtained, it can be seen that the respondents have selected reliability as the most important main criterion of ground services by a big margin followed by responsiveness criterion. The assurance criterion is third closely followed by tangibles and lastly empathy. However, for a study like this at hand it is not only about the average value that needs to be paid attention. The standard deviation and the median values are also taken into consideration. As, all these values together are representative to responses of customers. It is also necessary to know how the people have responded to the questions in the survey. There can be a difference in responses of the respondents and it is necessary to find out with the help of standard deviation and median.

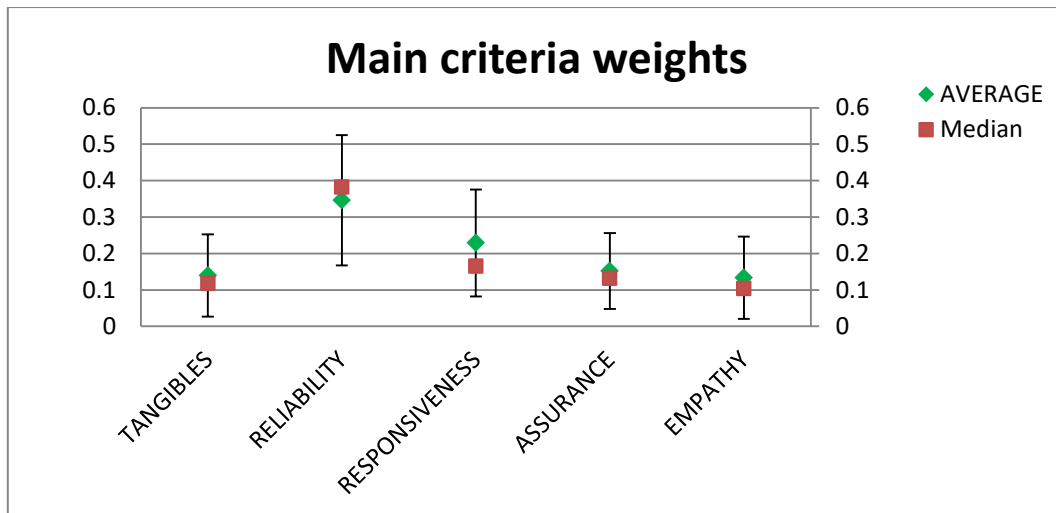


Figure 15 - Main criteria weights

The standard deviation values show that reliability and responsiveness, the two most important criteria as per average are the highest. However, the median value for reliability is higher which says that majority of the respondents find this criteria more important. Based on the median value the order of importance does not change but, it should be noted that the median value of responsiveness criteria is considerably lower than its average value.

Apart from the values of the main criteria, it is necessary to note the value of ξ^{L*} as it indicates consistency of the comparisons. Since the value of ξ^{L*} is closer to zero (0.168423338) it shows there is consistency.

Table 5 - Weight intervals of main criteria

	Tangibles	Reliability	Responsiveness	Assurance	Empathy	ξ^{L*}
Average	0.139747	0.345865	0.228857	0.151936	0.133595	0.168423
Standard Deviation	0.112096	0.177328	0.153558	0.098483	0.103079	
Median	0.112323	0.362419	0.182751	0.134309	0.092828	

After the weights of the main criteria were obtained, the local weights for sub-criteria were calculated. After the local weights for the sub-criteria were obtained, the weights were multiplied with their corresponding main criteria weights giving an output of global weights.

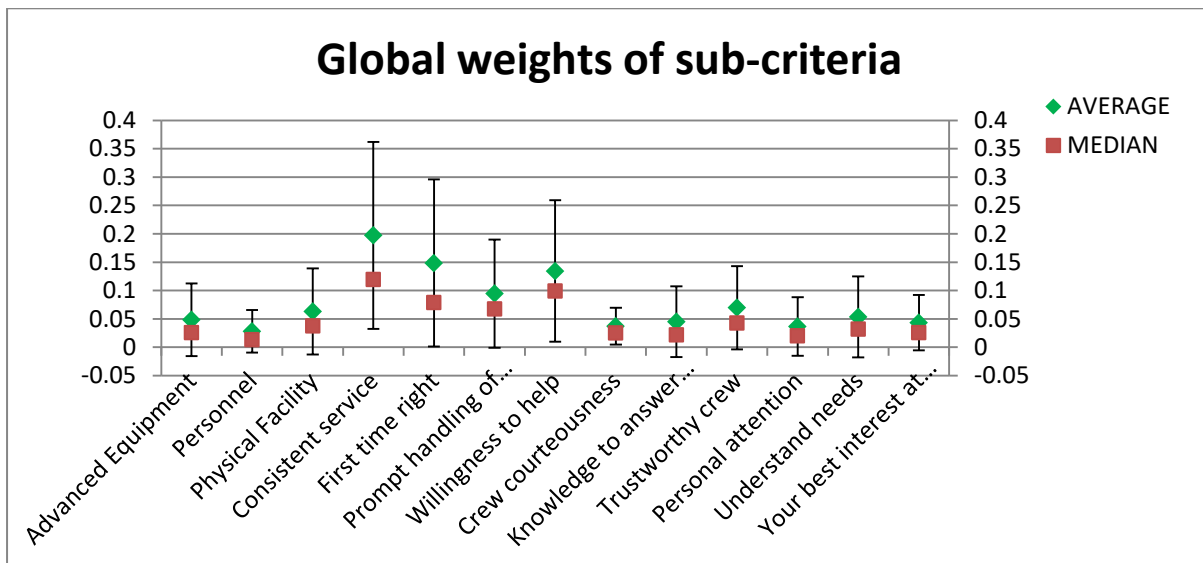


Figure 16 - Global weights

From the main criteria table it is already known that reliability is the most preferred criterion by the respondents. When seeing Figure 16, it can be seen that the average values of sub-criteria of reliability are the highest. Consistent service is seen as the most important sub-criterion by the respondents followed by first time right. The sub-criteria of responsiveness come next. On closer attention to sub-criteria of tangible and assurance it can be seen that sub-criteria of assurance have higher value than that of tangible sub-criteria.

As seen from the comparisons for main criteria, the standard deviation value and median values were calculated for the sub-criteria to have a better understanding of respondent preferences. It can be seen from Figure 16 above, the standard deviation value is highest for the most important sub-criterion. The median values are lower than the average value for all the sub-criteria. One notable difference is that the second most important sub-criterion as per the median value is willingness to help. This change proves that focusing only on average values of respondents is not representative of respondents answer to the survey.

4.3.3 Statistical data analysis

It has been found through literature review which attributes and dimension are important for measuring service quality for ground services. Through qualitative data

collection necessary modification were made to the attributes. With the help of BWM the weights of different criteria and sub-criteria have been determined. One-way ANOVA was used to understand relationship between variables.

Analysis of variance, otherwise known as ANOVA is useful to compare means of more than two independent variables to determine if there is a significant difference in the population means. It is useful to know what exactly one-way ANOVA test does. The one-way ANOVA test compares means of different groups of interest. These groups can be based on income, age group, type of illness and so on. However, for this study it will be useful to compare means as per nationality. This test will determine if the means of nationalities are statistically significant. To be specific it tests the null hypothesis.

$$H_0: \mu_1 = \mu_2 = \mu_3 = \dots = \mu_k$$

Here μ stands for the group mean, while k stands for number of groups. If one-way ANOVA return significant result in between at least two groups then the alternative hypothesis is accepted. This means that the null hypothesis states that there is no significance between two groups. It should be noted that on running the one-way ANOVA test it cannot be determined which specific groups are statistically significant. To know that it is necessary to use post hoc test.

It should be noted that even though t-test and one-way ANOVA are similar multiple t-tests are not advisable to be conducted. This is because there is a chance of committing a type 1 error. By running multiple t-tests the probability of committing type 1 error increases as well. One-way ANOVA keeps the possibility of type 1 error in check. Hence it is possible to be confident of statistically significant results being correct.

4.3.3.1 Nationality with main criteria

For one-way ANOVA analysis of the main criteria, the result shows that there was a statistically significant difference between groups for responsiveness criterion as determined by one-way ANOVA ($F(4,135)=4.155, p=0.003$). This suggests that there is a significant difference in the preferences of the customers as per the nationality. The evidence can be seen in Table 6, where significance is less than 0.05. The acceptable level for ANOVA test is $P\text{-Value} \leq 0.05$.

Table 6 - One-way ANOVA of main criteria

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
TAN-F	Between Groups	.067	4	.017	1.579	.183
	Within Groups	1.439	135	.011		
	Total	1.506	139			
REL-F	Between Groups	.174	4	.043	1.389	.241
	Within Groups	4.226	135	.031		
	Total	4.400	139			
RES-F	Between Groups	.360	4	.090	4.155	.003
	Within Groups	2.924	135	.022		
	Total	3.285	139			
ASSU-F	Between Groups	.020	4	.005	.482	.749
	Within Groups	1.395	135	.010		
	Total	1.415	139			
EMP-F	Between Groups	.055	4	.014	1.008	.406
	Within Groups	1.839	135	.014		
	Total	1.894	139			

An ANOVA test tells whether you have an overall difference between your groups, but it does not tell you which specific groups differed between each other. But post hoc test tells which groups differed. Figure 17 helps in providing in better understanding of the observed significance. It can be seen that the mean values of India and Indonesia is significantly lower than the value of United States of America. The possible reason for the difference in means of India and Indonesia with that of United States of America can be due to the cultural differences.

It is necessary to back these claims of cultural difference. As per Qingxue (2003), western countries value equality. This is emphasized from government relationships to social relationships. On the other hand Qingxue (2003) has acknowledged that “*all relationships in Asia are hierarchical*”. The hierarchy interaction can be seen with respect to age, education and higher economic position. This hierarchical vs equality cultural difference between Asian and Western countries can be the reason for the results of one-way ANOVA test being significant.

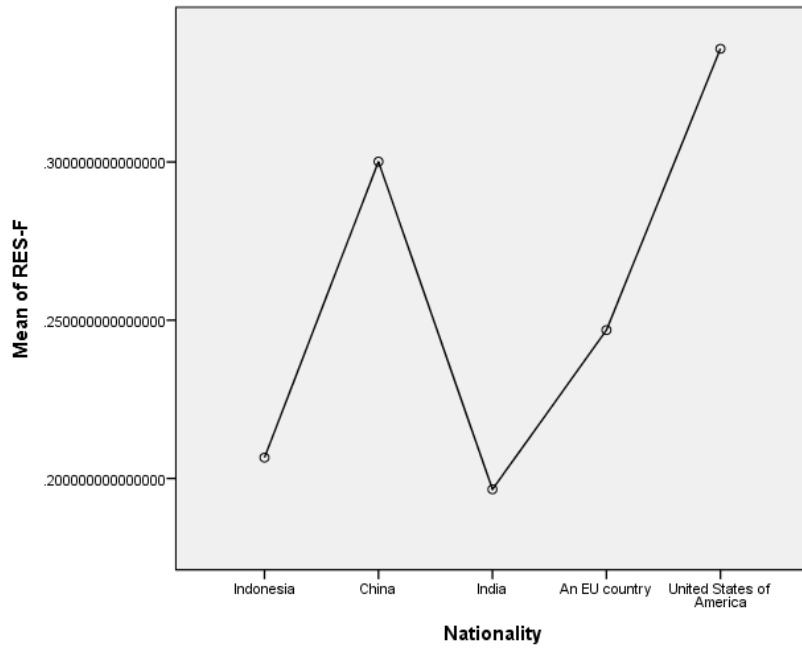


Figure 17 - Responsiveness comparison of means between nationalities

4.3.3.2 Nationality with expected service

Now that the impact of various dimensions and its attributes with various nationalities is known, it is necessary to know impact of expectations with that of nationalities as well.

For one-way ANOVA analysis of the expected service, the result shows that there was a statistically significant difference between groups for word of mouth criterion as determined by one-way ANOVA ($F(4,135)=2.363, p=0.056$). The evidence can be seen in Table 7, where significance is 0.05. The acceptable level for ANOVA test is $P\text{-Value} \leq 0.05$.

Table 7 - One-way ANOVA customer expectations

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Word of mouth	Between Groups	10.504	4	2.626	2.363	.056
	Within Groups	150.031	135	1.111		
	Total	160.536	139			
Personal needs	Between Groups	1.906	4	.477	.522	.720
	Within Groups	123.315	135	.913		
	Total	125.221	139			
Past experience	Between Groups	2.978	4	.744	1.153	.334
	Within Groups	87.158	135	.646		
	Total	90.136	139			
External communications	Between Groups	1.894	4	.474	.646	.631
	Within Groups	99.041	135	.734		
	Total	100.936	139			

Since the output is statistically significant, a better understanding can be done with the help of a graph between nationalities and service expectations.

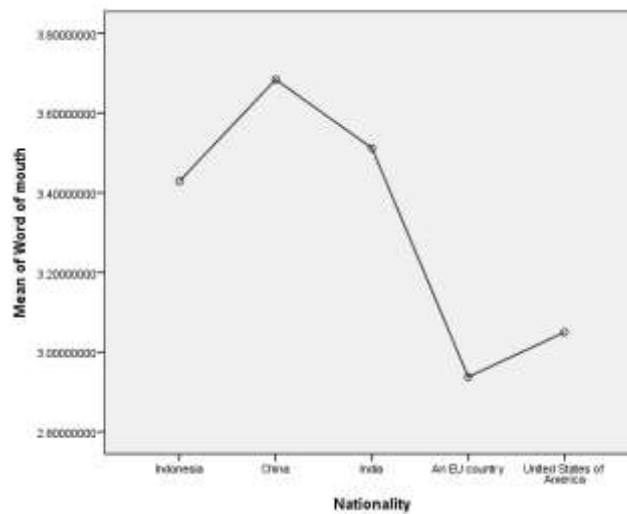


Figure 18 - Word of mouth means comparison

From Figure 18, it can be seen that means of Asian countries are higher than United States of America and a European countries for word of mouth. The possible reason for Asian countries scoring high in this aspect is because of the cultural difference.

It is necessary to support the claims of cultural difference provided for the two cases above. As per Qingxue (2003) and Fletcher (2006), Asian countries exhibit higher

levels of collectivism while the western countries exhibit higher level of individualism. Fletcher has explained eastern countries being collective through innovation adoption curve where it shows that the eastern countries due to their collective nature exhibit faster adoption when compared to western countries.

4.3.3.3 Cluster Analysis of global weights

Cluster analysis groups data objects based only on information found in the data that describes the objects and their relationships. The goal of the analysis is that the objects in the same group should be similar to one another and different from objects in other groups. Cluster analysis is a type used for classifying data into various groups. There are in total 2 main methods used for clustering. First being hierarchical clustering where the number of clusters is not predefined. Second is K-means clustering where, the number of clusters is pre-defined. For the study at hand, K-means clustering will be used as method of clustering.

In total three clusters will be used in the clustering analysis. With the help of this method it can be determined as to which sub-criteria played an important role in formation of clusters. Apart from this also the cluster distribution can be determined with K-means cluster analysis.

Table 8 - Breakdown of cluster sample

Number of Cases in each Cluster		
Cluster	1	36.000
	2	48.000
	3	56.000
Valid		140.000
Missing		1.000

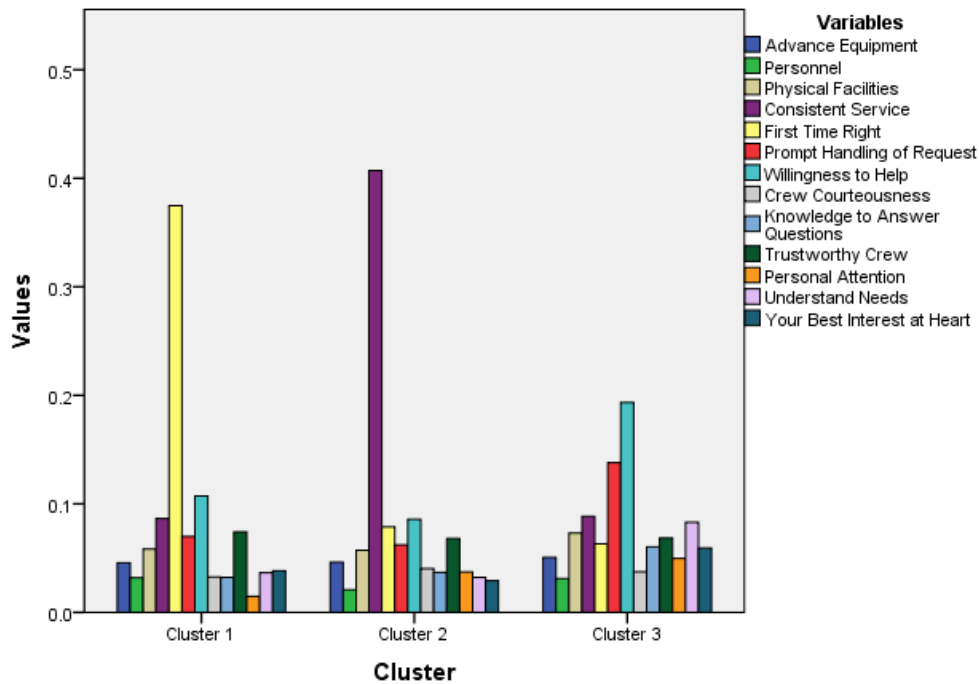


Figure 19 - Final cluster centres

From Figure 19 it can be seen that in the first cluster ‘First time right’ sub-criterion has very high scores while other sub-criteria scores are significantly lower. The second cluster is similar to the first cluster. However, ‘Consistent service’ scores are higher than other sub-criteria. In the third cluster both the sub-criteria of responsiveness criterion have higher scores.

Table 8 shows that samples in all clusters are fairly balanced with first cluster consisting of 36 respondents. While the second cluster consisting of 48 responses and finally third cluster consists of the highest number of respondents with 56.

Table 9 - ANOVA table of cluster analysis

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Advance Equipment	.000	2	.004	137	.091	.914
Personnel	.002	2	.001	137	1.289	.279
Physical Facilities	.004	2	.006	137	.688	.504
Consistent Service	1.610	2	.004	137	391.785	.000
First Time Right	1.242	2	.004	137	324.257	.000
Prompt Handling of Request	.089	2	.008	137	11.134	.000
Willingness to Help	.168	2	.013	137	12.547	.000
Crew Courteousness	.001	2	.001	137	.588	.557
Knowledge to Answer Questions	.011	2	.004	137	2.951	.056
Trustworthy Crew	.000	2	.005	137	.085	.919
Personal Attention	.013	2	.002	137	5.350	.006
Understand Needs	.040	2	.005	137	8.742	.000
Your Best Interest at Heart	.012	2	.002	137	5.532	.005

As mentioned above, it is necessary to know the sub-criteria that play an important role in the formation of the clusters. From the ANOVA it can be seen that a significant result is observed for the sub-criteria of Reliability, Responsiveness and Empathy. To be more specific, it means that ‘consistent service’, ‘first time right’, ‘Prompt handling of request’, ‘willingness to help’, ‘Personal attention’, ‘Understand needs’ and ‘Your best interest at heart’ played an important role in the formation of the clusters. The possible reason for these sub-criteria playing an important role in formation of clusters can be because the empathy sub-criteria have low scores and the sub-criteria of reliability and responsiveness have the highest scores.

By saving the memberships of the clusters as per the respondent id, the nationality per cluster breakdown can be found out. With the help of this it can be known which sub-criteria is important for which nationality.

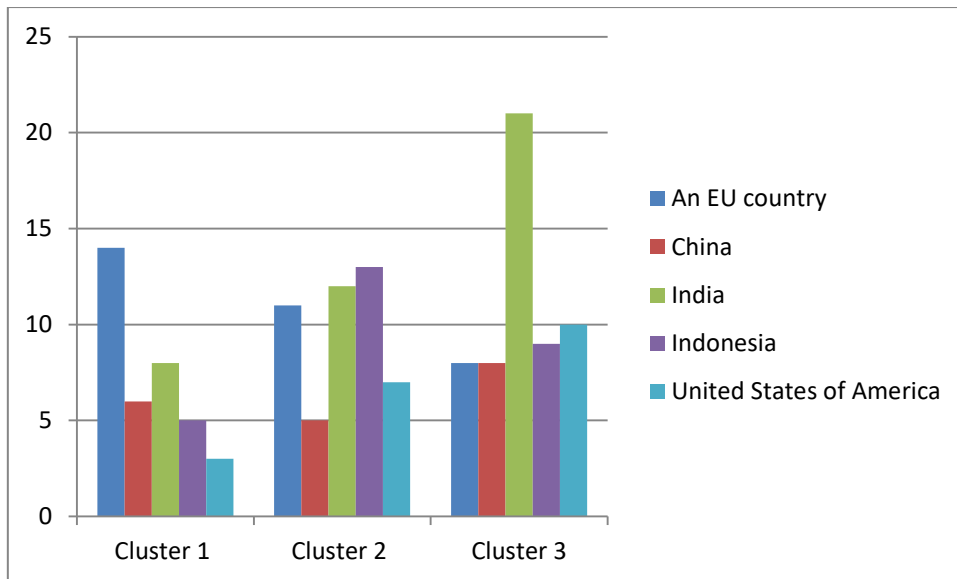


Figure 20 - Nationality segmentation per cluster

From Figure 20, it can be seen that more European citizens have been segregated to cluster one based on the global values achieved using BWM methodology. While from Figure 19 it can be seen that first time right is highest as compared to other values while the sub-criteria of Empathy is the lowest. Also from the ANOVA table 9 it is known that first time right attribute was important in formation of clusters. With the help of figure 20 it is possible to say that for European citizens first time right attribute is important while sub-criteria of Empathy are least important since Empathy sub-criteria are lowest in cluster 1. It should be noted that Cluster one consists least number of United States of America citizens.

Cluster 2 consists of most number of Indonesians and least number of Chinese citizens. In cluster two 'consistent service' sub-criterion is highest and hence can be said that for majority Indonesian citizens this criterion is important. As for Chinese citizens the criterion is not that important.

As for cluster 3, both the responsiveness sub-criteria are highest values. Apart from this it should be noted that the sub-criteria of Empathy are also high as compared to its values from cluster 1 and cluster 2 which can be seen in figure 20. Most number of Indian citizens come under cluster 3. Along with this it is also noticed that of all the respondents from United States of America most citizens come under cluster 3.

With the help of clustering analysis and the ANOVA table it can be seen as to which attributes are important to which nationality.

4.4 Chapter Summary and discussion

To summarize in brief the chapter was aimed to provide the way data collection was done. Furthermore, this chapter was divided into two more parts. One was providing data analysis information of the data set and other was results of the data set through application of BWM and statistical data analysis.

In total 481 respondents participated in the survey out of which 241 respondents actually managed to complete the survey. The actual size of the data set was condensed down to 140. This data set was added in excel solver to apply BWM methodology.

On application of BWM it was found that Reliability was the most important criterion followed by Responsiveness criterion, while the least important criterion was found to be Empathy. On calculating the global values it was seen that consistent service sub-criterion was most important as per the respondents. On the other hand, Personnel was the least important sub-criterion.

For finding the most important criterion as per nationality cluster analysis was carried out. It was observed that First time right is the most important sub-criterion for European nationals. Consistent service was observed to be most important sub-criterion for Indonesian citizens. Finally, for Indian citizens the responsiveness sub-criteria are important.

5.0 Conclusion and Discussion

The aim of this study was threefold. Firstly, the aim to select a suitable model to measure the service quality of airline ground services. Next, finding attributes that customers felt were important and finally finding out which criteria and sub-criteria were important as per specific nationalities. The first four chapters have discussed these three steps in detail. The first chapter worked in providing an introduction to the study along with the problem statement. The second chapter helped in selecting a suitable model to measure service quality and also listing of attributes. The third chapter elaborated on the methodological considerations for the study. Along with this the important attributes as per the customers were found out which helped in modifying the research model. The fourth chapter deals in finding the important criteria and sub-criteria as per the passengers. Furthermore, it also answers the preferences of the different nationalities.

Chapter 5 deals with providing a conclusion to the study in three steps. Firstly, the conclusion section will answer the three main questions and one sub-question. Next, practical and academic recommendations for future study will be described. Finally, Reflections of this thesis will discuss the strengths and weaknesses of this study followed by the relevance of this study to MOT programme.

5.1 Conclusion

The thesis started with the objective to identify and evaluate various dimensions of service which affects customer level of satisfaction with regards to airline ground services. The research has been focused on this objective itself with the following research question;

What are the existing models used to measure the quality of service and customer satisfaction in the airline industry?

For finding out what the customers prefer and what they do not like, it is necessary to find out the right way of measuring the service quality. It is important to have a structured way to approach the objective. Through a detailed literature review two of the most important and well adopted models were compared, namely; Grönroos Quality Model and SERVQUAL Model. Apart from Grönroos Quality Model and

SERVQUAL Model, there were other models that were also seen. However, the seventeen models that were seen were a iteration of the two important models or were specific to a market sector. On a more in-depth study of the tw models it was found that the SERVQUAL model would be suitable for the study. The research model is framed using the SERVQUAL Model as proposed by Chao & Kao (2009).

What aspects do customers recognise for service quality and customer satisfaction for airline ground services?

It should be noted that there are no sub-criteria mentioned in the study of Chao & Kao (2009). To acquire the sub-criteria for all the main criteria a detailed study of the ground service process has been carried out. To understand the aspects recognised by airline customers for service quality and customer satisfaction for airline ground services, qualitative data collection was done. With the help of six semi-structured interviews it was found that there were two attributes that needed to be eliminated from the framework and two attributes were renamed to make it easier for better understanding. The two attributes that were eliminated were 'Efficient Guidance' and 'Prompt service delivery' from responsiveness dimension while 'Advance equipment' and 'Consistent inspections' were rephrased to encompass the notion of modern equipment and security checks provided respectively.

Which part/aspect of service quality is more important for the customers so that managers can formulate a firm strategy to elevate both the aspects; service quality and customer experience?

Based on this modified model the third question was answered by conducting a survey. Questions asked were related to airline ground services aimed at capturing the airline customers expected and perceived services. The data was collected over a span of 30 days, during which 480 respondents managed to start the survey. But out of 480 starters only 241 respondents managed to complete the survey.

The data gathered was condensed in a excel file so that necessary calculation could be carried out. By applying BWM methodology using excel solver it was found that the respondents rated reliability as the most important dimension followed by responsiveness for airline ground services. Empathy is rated as the least important criterion by the respondents. As for the sub-criteria, consistent service is the most

important as per the respondents while willingness to help is the second most important sub-criterion taking median value in to consideration. Personnel sub-criterion is the least important as per the respondents.

How do different nationalities vary as per preference for various dimensions and service expectations?

To answer the final sub-question the data was added in statistical analysis software (SPSS) where one-way ANOVA tests were carried out to understand the preferences of respondents as per nationalities. For the main criteria the results were found to be significant for the responsiveness dimension between United States of America against India and Indonesia, meaning that means of United States of America differed to that of India and Indonesia. The word of mouth aspect comes under expected service, which was found to be significant as well. There were no observed significant results for the sub-criteria comparisons.

Through cluster analysis the segregation of nationalities as per the cluster were found. European citizens find First time right important while Indonesian citizens find consistent service sub-criterion important. Finally, Indians and United States of America citizens find both the sub-criteria of responsiveness important.

5.2 Recommendations

Based on the results and the conclusion in this study there are some options for carrying out future study. The recommendations are suggested as a continuation to this study and apart from this there are other areas where this framework can be useful.

In extension to the findings of the customer preferences in airline ground services it would be useful to align airlines ground services as per the customers' preferences so that the level of dissatisfaction is lower. For this a detailed study of an airline service needs to be carried out so that the organisational service delivery is known. With an in-depth understanding of both the sides, a suitable improvement plan can be made. For providing strategy to airline it is best to follow the gap model which will help approach the problem at hand stepwise.

Finally, a study of internal performance analysis would be possible to measure the planned service delivery to that of the actual service delivered. With the help of this the service delivery (Gap 3) can be closed.

This same model can be used for a commercial airline service study. However, for the study to be more accurate it will be necessary for the study to be with a specific commercial airline service. With the help of framework used in this thesis a similar framework can be made that will be able to capture the process flow of service of commercial airline service.

From academic perspective, this framework will be useful for other markets as well. This can be explained with one example. In a recent study carried out by (Naiknavare, 2016) on revenue streams of sustainable technologies in developing nations it was found that retention of customers is an important aspect. To understand the needs of customers and retaining them the framework used in this thesis will be useful.

One final recommendation for future study would be analysing the failure of home-printed baggage tags being successfully being implemented in the European Union. During an interview with Richard Ottens, it came to light that home-printed baggage tags failed to successfully be implemented in the aviation sector, in the European Union. A decision making study can be carried out to understand what were the possible strategies which could be used for the outcome to be successful one. This decision making study can be a form of a case study for future managers in universities.

5.3 Reflections

This chapter reflects on the strengths and weakness of this research. Furthermore, the surprising and disappointing results will be discussed. Finally, the relevance of this study with the MOT programme will be discussed.

5.3.1 Strengths and Weakness

The relevance of this study is a definite strength. The aviation sector is very competitive and cut-throat, as a result airlines are looking for effective and cheap answers to provide better service to customers. By focusing on markets that are

meant to grow in the future, this study helps create a firm strategy to address the specific market's needs. The methodology used was sound and the combination of literature review, followed by qualitative data collection helped in fine tuning the model and make it strong. The combination of SERVQUAL model with BWM used for finding the main criteria and sub-criteria are also a strong point. The results acquired through BWM are accurate than the conventional style of comparison. However, the sample size had to be reduced from the original available sample size of 241 to bring balance in the number of respondents from each region, which can be considered to be a weakness. Weakness of this research is the limited sample size of the survey respondents.

5.2.2 Surprising and disappointing results

The information acquired during interview regarding home-printed baggage tags being banned in the European Union with Richard Ottens was surprising information that came to notice. This information helped in adding another dimension in the recommendation for future study from academic research perspective.

Another aspect that was surprising was the people who enquired for the results, as they felt that the research was useful for their work. One of the respondents from KPMG showed keen interest in the results while another application developer in India on ground service was interested in the results. This provided a genuine boost, as the work being carried out had gathered interest.

The aspect that was disappointing was that the qualitative data collection was initially planned to be done through a focus group interview. However, due to time and calendar constraints of the participants it was not possible and the plan of focus group interview was changed to multiple individual interviews. This made the analysing of data a longer process than what was initially anticipated.

5.2.3 Relevance of study to MOT Curriculum

New technologies always have an impact on products and services and the way they interact with the customers. These technologies once launched are implemented in various markets in numerous forms. Hence, it is always necessary to know what the customers expect once new technology is implemented. This cycle of introduction of

new technology and knowing customer's needs gives relevance to MOT curriculum. This research has used assistance of methods that were taught in the master programme of Management of Technology curriculum.

- MOT2003 Preparation for Master Thesis
Helped in creating a suitable thesis structure with a logical research approach
- MOT2312 Research Methods
Helped in conducting literature review, qualitative and quantitative research
- MOT1532 High Tech Marketing
Provided a way of gathering interview data and planning of interviews
- MOT1531 Business Process Management and Technology
Helped in understanding the flow of customers at airport, checked-in baggage stepwise flow and fishbone analysis of mishandled baggage by airlines
- MOT1434 Technology, Strategy and Entrepreneurship
The study was planned to address preferences of future markets that meant to grow in aviation sector, so that airlines can create a strategy to address the needs and achieve market domination. This course was helpful in understanding market domination through service or technology.

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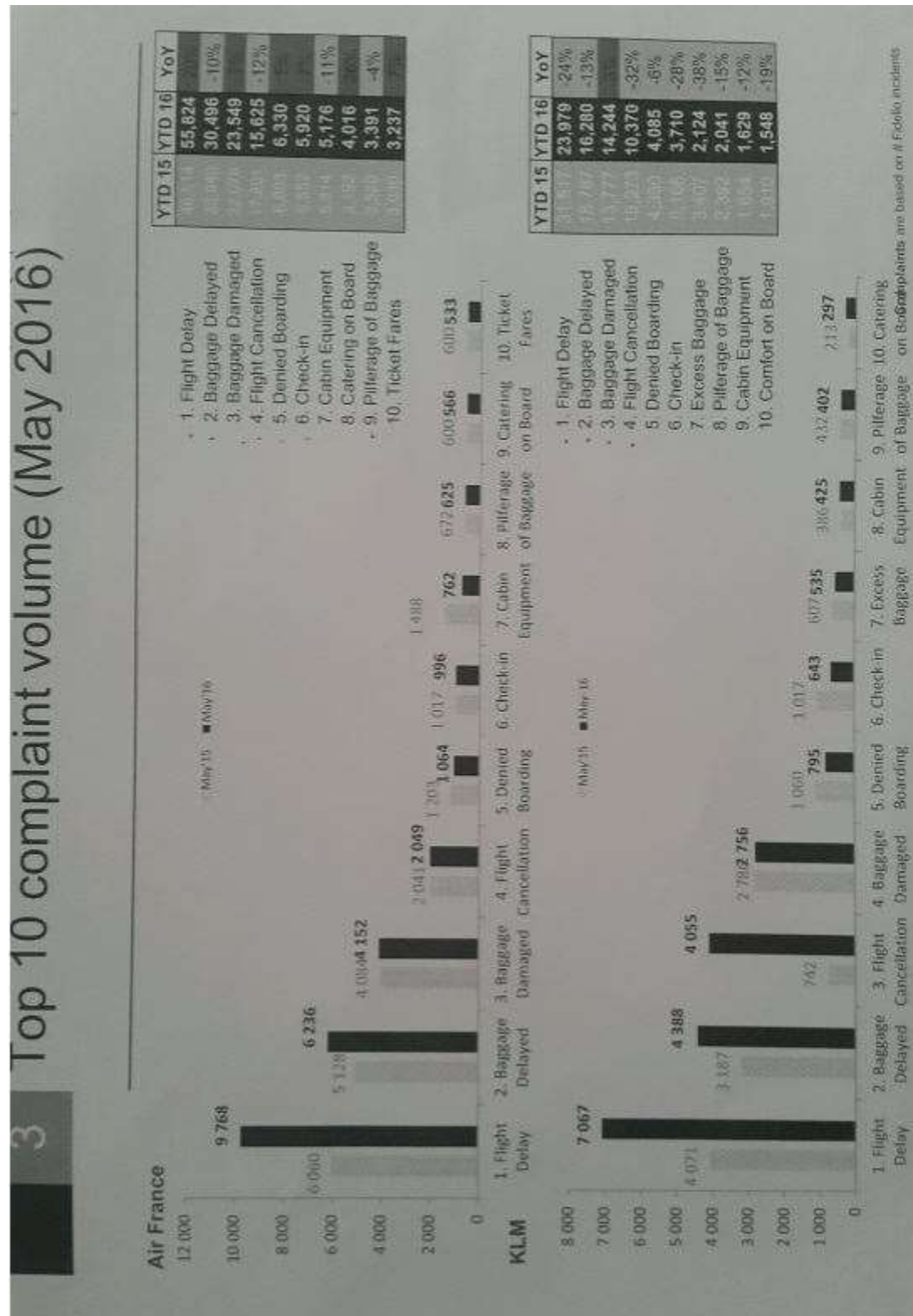
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Appendix 1

TOP 10 Baggage complaints for KLM and Air France



Appendix 2

Service quality models

1. Attribute service quality model (Haywood-Farmer, 1988)
2. Synthesised model of service quality (Brogowicz et al., 1990)
3. Performance only model (Cronin and Taylor, 1992)
4. Ideal value model of service quality (Mattsson, 1992)
5. Evaluated performance and normed quality model (Teas, 1993)
6. IT alignment model (Berkley and Gupta, 1994)
7. Attribute and overall affect model (Dabholkar, 1996)
8. Model of perceived service quality and satisfaction (Spreng and Mackoy, 1996)
9. PCP attribute model (Philip and Hazlett, 1997)
10. Retail service quality and perceived value model (Sweeney et al., 1997)
11. Service quality, customer value and customer satisfaction model (Oh, 1999)
12. Antecedents and mediator model (Dabholkar et al., 2000)
13. Internal service quality model (Frost and Kumar, 2000)
14. Internal service quality DEA model (Soteriou and Stavrinides, 2000)
15. Internet banking model (Broderick and Vachirapornpuk, 2002)
16. IT-based model (Zhu et al., 2002)
17. Model of e-service quality (Santos, 2003)

Appendix 3

Introduction of the interview

Hi! Thank you, for making yourself available for this interview. I'm delighted that you were able to be a part of this interview. Basically to fill you up on what is my thesis about and why I am interviewing you. I am doing a thesis on analysing the service quality of airline ground services from the customers perspective so that eventually better service quality will be provided to the customers (you). This interview is not a mere question and answer session so please feel free to share your flight experiences may it be good or bad. I would be happy to hear ideas to hear the ideas that are on your mind too.

So, before we start do you have any question that you would like to ask?

Great! Can you tell me a about yourself to start with?

Can you please tell me your age if you are okay with it?

What country are you from? Were you born there? Where do you work now?

What are the reasons of your travel generally?

Do you travel for work or leisure?

Appendix 4

Interviews

Interview with Richard Ottens – Manager Product Development at KLM Royal Dutch Airlines

This section is not available due to confidentiality concerns.

Qualitative data collection interviews

Participant 1 – A.M. - EU

O- Thank you Sir for giving me the opportunity to interview you. By now I think you have a brief idea about the reason for this interview. Before we go further ahead do you have any questions that you would like to ask?

A- Who is going to be using this interview? Whether it is for commercial use or for personal use?

O- This interview is completely confidential. It will be between you and me. This basically will be used for my initial research which is a step towards my final research objective. Did that answer your question?

A- Yes. I have no more questions.

O- Can you give me a background information about you?

A- My name is Akshay Mahashabde I am a Dutch citizen but I was born and brought up in India. I came here for studies in 2003 and then started working. I have been here since almost 14 years now. Earlier I used to travel only for leisure purpose but lately it has been more of business travel as well. More of it is concentrated around Europe, Asia only so far, have not travelled to USA so far but may do so in a few months.

O- Do you have any kind of brand loyalty while travelling?

A- It is shifting. Earlier I used to travel only via. Swiss Airways but lately I have moved towards Emirates, huge capital companies who provide good equipment. So

you can say that my loyalty has shifted towards airlines from the middle-east. So it is not specific to airline but a region.

O- The day you are going to fly out from a departure city, what is the buffer that you keep to reach the airport?

A- Firstly, it depends I am going with taxi or my own car or with train. I always keep buffer of 3 hours minimum, irrespective of local or international travel.

O- Once you reach airport do you look for a guidance or you know where exactly you want to go? Do you look for a staff member to know where to go?

A- No. Actually I look for the screens to get first-hand information. If that does not work then I look for staff help. But so far I have never had a big problem in any region.

O- How long does it take for you to stand in queue before you actually start your check-in process.?

A- It takes 45 minutes to an hour.

O- So just standing in queue takes you that long?

A- Yes. Irrespective of it being a season or non-season for travel.

O- Do you have preferences in checking-in?

A- Many people do online check-in these days but I prefer going there and doing the check-in on the spot. Nowadays there are machines ofcourse to assist in the check-in process and getting boarding pass. It is getting mandatory at Schiphol anyway but I still prefer the conventional way of checking-in.

O- Is there a specific reason why you prefer the conventional system?

A- I had a problem while checking-in a couple of times and also the names on the tickets were printed incorrectly, couple of times my passport could not be scanned by the machine. So I slowly stopped trusting the machine. But nowadays I do not have an option.

O- So you prefer manual check-in over automated check-in?

A- Yes, absolutely. Another reason is that the person behind me can probably see the details on my passport while I am doing my automated check-in. So privacy is another reason.

O- You mentioned about your passport not getting scanned. Generally there are staff members to help you during the check-in so did you not receive any assistance?

A-They were there, but when there is only one attendant for a couple of machines then you need to keep waiting and you feel stressed due to excitement. You have to

catch the flight. But the attendant did help me but it got a panicky kind of situation because you are there checking-in at 3am and the passport is not getting scanned. That is why I prefer an attendant taking care of the process.

O- Have you had issues with baggage handling in the past while checking-in?

A- Earlier it used to be the case. When I came to Europe to study 14 years back I had to show all my stuff inside my baggage to all the airport people as it was overweight and I had to manage everything from one baggage to other and also wear a few clothes. But I still made it through the check-in process with a little excess baggage.

O- So the attendants were helpful to you in a way?

A- Well, no. I do not think so. They did not help me. I merely adjusted the weights between baggage. But in the end I took inside a cumulative weight of 35Kg. which is strange in my opinion. I made the check-in luggage in legal limit but my cabin luggage was twice above the legal limit.

O- Is there any other point you want to talk about your check-in process? It can be good or bad.

A- When I fly KLM from India they always ask me the security questions about who filled the baggage. I understand it is a security question but I thought it is a bit of a vague way of ensuring the safety of passenger. In the future say something happens externally and I have declared that I have filled in the baggage on my own then I will be held responsible even if someone else has put in the baggage. Another check-in issue is that we need to have baggage tags for cabin baggage too while flying out of India for security reasons. I can use the tag of my past journey to just not do it. I find it unnecessary and waste of raw material. It wastes time if we forget time as well.

O- So you think it is not sustainable to have a security tag for cabin baggage.

A- Yes. Anyways passengers do not write their names, addresses, etc. so then there is no need for it.

O- Do you have any views of the safety checks at security check points?

A- In Schiphol it is hassle free and very smooth but in India it is a different story. More stringent security measures are used and here they rely more on electronic systems. The only concern I have is that the electronics can be fooled probably. So only doubt I do have about fail safe. But I do feel safe.

O- After the checks you know which gate you want to go?

A- Yes, I know. I do not panic as such while going to the gate. Unlike the check-in process where my passport did not get scanned. The sign boards in general post

check-in are very well directed. Even my parents when they were travelling alone for the first time did not have trouble.

O- So the signs post check-in are not an issue and you have never missed your flight?

A- No. I did not feel like that and I have never missed a flight due to this, although a flight was cancelled.

O- Why was the flight cancelled?

A- Because of the natural reasons. It was snowing heavily so they had to arrange another flight for us.

O- How was the service provided to you during this period?

A- It was not that good because even they did not have an idea of what will happen. Once it became clear about the flight being cancelled I had to insist of the need to go to the destination due to my commitments and also I had my kids. Then they arranged it for me. SO they would not have given me priority if I would not have insisted.

O- So you never got any updates of the flights departure.

A- No. We reached around 3am and by 5am we came to know flight was cancelled. Once my mother almost missed her flight while transfer in Switzerland because the transfer time was less than 55 minutes.

O- Was there any assistance during the transfer process?

A- There was no assistance from anyone during that transfer.

O- Nobody was there from the staff at the moment of deboarding flight as well?

A- No, there was no one to assist.

O- Any other experience during transfers that has been notable for you?

A- No.

O- Then we move towards the end of the journey where baggage claim occurs. Would you like to share any experience that you had?

A- With the baggage once my baggage got misplaced. The baggage was not loaded from the origin place, so on arrival I did not get the baggage. I had to wait at baggage claim for quiet sometime but it did not come. I told the 2 attendants standing at the baggage claim area they took me to a baggage counter. First call was made to the baggage loading area to find out if the baggage was there. This was possible because the barcode was still there and they said that the baggage

was not there. Then I had to go to another counter then I got a letter of my baggage being lost. So the same night I received my baggage.

O- How was the assistance that you received when you came to know that your baggage was not yet there?

A- It was not that good. The attendant said that she will check it in 30minutes time she came after an hour. When I reminded her of my baggage she said “oh yes yes, sorry” she called once again and then told me that the baggage was not there. I got the help but it was not as fast as I would have wished for.

O- Okay. So did you have to go to the airport to pick up your baggage?

A- No. My baggage was dropped at my place at that night itself.

O- Were you getting updates regarding your baggage?

A- No. no updates as such.

O- Apart from this do you have any suggestions?

A- I do not understand the logic of one baggage per person. As long as I fit under the designated weight limit I deserve to take my baggage. Obviously I am not saying there should be five pieces allowed. But two pieces certainly should not be a problem. Secondly, I have issues with the way checked-in baggage is handled. Every time I fly there is something happening to my baggage due to which I need to change my bags sooner than I need to. The zips are broken at times.

O- Have you complained about it ever?

A- No. We generally do not know where to complain; to the airline or the airport people. Besides that the bureaucracy is another issue why I have avoided complaining. That is why we have kind of accepted the fact that baggage handling is done in a rough manner. New bags after a one trip are down to 60% quality it once was. Once the wheels of my baggage were damaged after I flew back from a trip. The locks of my baggage was removed, in short it was damaged, I do not know if it was for security reasons or whatever but there was nothing to signify about it. But no bag can remain nice in the whole journey irrespective of the brand of baggage.

O- Is your experience to a specific region of travel?

A- No. It is also in Europe. I never flew to American continent so cannot comment on that but in Asia and Europe region that baggage is handled very roughly.

O- When your zip was damaged at the lock due to opening it did you get notified in anyway, like a sticker to tell you it was done for security reasons?

A- No, there was no sign of any sticker nor were we told that baggage lock was broken due to security reasons. So in those terms I do not feel safe because anyone

can break open the zip and put in any unwanted items which can cause a big issue for the passenger in terms of security.

O- I think that is good enough information. Would you like to add any more information?

A- Yes, the security checks is not at all consistent at removing the baby food from the cabin baggage. I had my child with my and the baby food was with me like the milk. I had 2 separate brands of milks. The removed the branded one and let me keep the cheap baby milk.

O- So you mean there is no consistency in the security measures?

A- Yes. I believe there was no consistency as to why they removed the branded baby milk and let me keep the cheaper baby milk. You simply cannot question in that situation when you are trying to catch the flight and also because you are dealing with security.

Participant 2 – A.L.H. - China

O- Hi Anna thank you so much for being here for this interview. I would like to give a brief idea about why I am doing this interview. So basically I'm doing my thesis right now related to airline service quality and customer satisfacton. For this I need to interview you so that I can move further ahead in my thesis. Do you have any more questions before we go ahead with the interview? **A-** No no it's OK.

O- So before we go ahead can you give bit of background information about you?

A- I am a student studying in TU Delft at the moment and am from China. I was previously working in the United States of America and China both. As a result the travelling used to be about two times a year.

O- So you've been traveling around on an average two times a year since how many years approximately?

A- Since the past eight years. My travel was mixed with domestic travel and international travel.

O- So your trvel was more for leisure than work?

A- Yes. Before I used to fly for leisure yes. But past 2 years I have been travelling back to China to see my family. So maybe it is for leisure as well you can say. So the travel time is long and hence prefer flights without transfers.

O- So you mean you prefer direct flights?

A- Yes that is correct. I prefer flying with direct flights. Partly because once I travel with transfer I fear that my baggage will be mishandled or lost. So I still prefer paying more than having a cheap flight with transfer.

O- So you mentioned about having doubts of luggage being mishandled. So have you had an issue in past that has made you to travel by a direct flight?

A- Yes. When My Masters stared I came from Beijing to Amsterdam and was a transfer flight. I do not remember clearly. But my luggage was not on the same flight as the flight that I arrived. So I received it a day later.

O- So it was kind of a misplaced luggage?

A- Yes so it was not going with me so I had to claim it was lost and then they tracked

it down and sent it to me. But there is this uncertainty that it can be lost so I was lucky it was found.

O- So which part of your journey did you realise that your baggage was misplaced?

A- After arriving at my destination I waited to claim my baggage but I did not get it even after I waited for a long time. So I went to the KLM counter to report about my missing baggage. They took all my information and it took really very long. There was a really long queue for the baggage complaint as well but I waited for long.

O- So waiting in queue for long was it stressful?

A- Yes, it affected my experience because KLM is a premium airline and focus on providing service unlike budgetary airlines. But the way they handled the issue is also proper. I got constant updates about the process that was happening. The way the problem was solved was really good but it made me conscious about travelling with transfer flights. And there can be a issue of reimbursement of money in case of some problem happening.

O- So the waiting time at baggage complaint counter was long but was the service at the counter once your chance arrived satisfactory to you?

A- Yes the communication was helpful and nice but the time consumed was really long. Looking for baggage took 1 hour and 1 hour standing in queue. Mainly after long travel you are tired and are looking forward to rest. Besides I had a lot of valuable stuff in my bag so I was scared.

O- So by scared do you mean scared about the compensation you receive from the airline?

A- Yes. From airline or insurance both have limits as to how much can be claimed an in this case I think the consumers in China do not get preference in comparison to big organisations. Therefore I do.

O- After you received your misplaced baggage how would you rate your experience?

A- The overall feeling was nice and positive as I was getting constant updates and emails about the proceedings. Since I had emails about updates it gave me comfort that I had some proof of formal communication for my lost luggage. So overall I felt quite positive about the customer support. After the baggage was locate I got a call from their customer service. That was a god feeling too.

O- S you mean the communication from phone calls was kind of a personalised service for you that you liked?

A- Yes. That made me updated very well and after a long flight and jetlag you get a phone call about luggage being found along with the arrival time and location of baggage makes it quite good. So that is relieving. But emails are good to in terms that I have proof of communication.

O- How long before your flight departure do you reach the airport?

A- For international flights its mandatory to have a buffer of 2 to 3 hours but I reach airport about an hour and a half before the departure. It is a bit risky to reach that late but I think I am a bit lucky in that terms.

O- So you go the airport one and half hour before the flight only to the airport you know or in general you reach around that time?

A- If it is a airport I know then I reach later than recommended time. But if it is a new airport then I will follow the instructions given by airlines or check for information on internet.

O- Do you go to the check-in counter after you reach the airport?

A- First I look for my location at the airport, whether I am at the departure hall of arrival hall. If the airport is big then I look for a big screen. If I can locate where I have to go then I follow directions. But if I cannot make out where I have to go even

after getting directions then I consult someone. I consult some airport staff with uniform (any airline attendant, security personnel, etc.)

O- So you mean you consult someone from airport to get proper directions to your check-in counter?

A- Yes, that is correct. I prefer asking someone because it is very easy to confirm if I have got the correct information. I do not fully trust the layout of the airport that is provided as at times it is not clearly structured by screen or sign.

O- Do you find the need for someone from the airline to be available around the departure hall area to direct you to the right check-in counter?

A- Yes. If there is someone from the airline then that would be perfect as the information provided will be accurate compared to the information provided by the security personnel or anyone else. I say this because there are numerous airlines that fly at the airport and it is not necessary that the security people have information regarding a specific airline.

O- Would you like to add anything else regarding your airport arrival experience?

A- I have experienced missing my flight once. I missed my flight while going to South Korea as I got stuck in a traffic jam in Beijing. Also once at Moscow airport I missed my flight because the airport was very long and I had to rush from one corner of airport to the other. There was not a lot of information on screen giving directions. So walking from terminal A to terminal E was really crazy.

O- So you are saying you missed you flight twice, once during transfer and once due to traffic?

A- Yes that is correct.

O- And the flight to South Korea you only missed because you were stuck in traffic?

A- Yes that is correct but also because I woke up late.

O- So after you reached the airport you came to know that you missed the flight?

A- Actually no. Different flights have different procedures. So I still had hope that I can make it on flight. Some airlines close gate 10 minutes before departure. Also there is a possibility that airplane can be delayed. So I was totally dependent on luck.

O- Once you came to know about you missing your flight what did you do?

A- So basically the flight was gone and I could not do anything about it. I had only two options. One was to call customer care executive of the airline or call the agency through which I booked the flight ticket to buy new ticket and get some refund for flight ticket. So in this case I booked the next flight through the agency to South Korea.

O- About you missing the transfer flight, did your flight land on time in Moscow?

A- The flight landed on time but I was lost in the airport. To be precise I was in the wrong hall partly because the directions were not as clear as I would have had liked. I could not find my flight and also thought my flight got cancelled. I found an information desk but there was a long queue and that is why I could not catch my flight.

O- Did you miss your flight because you were not given proper directions??

A- Yes I think so. The Moscow airport is a long one unlike other airports instead of circular one. I landed at terminal A and had to go to terminal F and could not find terminal F as I could not find my flight information.

O- So you could not find assistance is it?

A- Exactly. Because when I checked-in the system could not show me where the flight terminal for my transfer flight is and I would have had to check it once I land. So the problem was that the system could not give proper information of my transfer flight, which I consider as a technical shortcoming. Secondly, I would blame for the

design of the airport. If I would have got proper guidance from screen I would have got proper assistance. Thirdly, I did not have any assistance from the airline as well to direct me to the right terminal and gate of my flight. Nor the airport staff was helpful enough to give me directions. I personally felt the focus of this airport was for the passengers to roam around in duty free for longer as walking along the terminal I passed a lot of duty free shops. So priority for information was less than duty free preference.

O- So basically you felt that it was partly because of duty free you did not get enough information?

A- Yes I think it was more the fault of the airport. But the airline I think could have done something about it. Probably give assistance in some way which was visibly missing. As a result I do not want to ever travel through that airport or that airline.

O- In this case what kind of assistance did the airline give you?

A- I did not have a good assistance from the airline. They told me to buy a ticket to Beijing or else they could send me back to Istanbul for free. So I had to buy a ticket. If they could afford to send me back to Istanbul then they could have sent me to Beijing in the same cost.

O- So you missed your transfer flight then what did you do?

A- I had to buy another ticket to Beijing.

O- What happened to your baggage when you missed the flight?

A- Aah yes. I flew out of Moscow 10 hours later and I landed in Beijing and since I had missed my flight on landing in Beijing my baggage had not reached. I finally received my baggage a day later. But I was asked to pick it up from the airport unlike my experience where KLM dropped it. And in this case there was nobody from the airline to give me the bag but the airport staff handed me my baggage. It made me feel that the airline was not as responsible as they did not give me any update about the baggage was found or was being transferred.

O- So you did not have to interact with anyone from Aeroflot and only interacted with the Chinese airport staff in Beijing?

A- Correct

O- So during the check-in process how do you go by? I ask because you say that you reach the airport an hour and half before the flight.

A- I do online check-in as it is more convenient and use the barcode or QR code to quickly check-in. But this is specific to my experience in Amsterdam, airport. This kind of infrastructure is still not available everywhere. In Beijing I could not use the barcode scanner as there was no system to scan it. So all I could do was to do online check-in.

O- So you mean that in China you need to a manual check-in and in Amsterdam you can take advantage of automated check-in process?

A- Yes that is correct. But it is only limited to airport infrastructure. Like in Amsterdam airport only QR code on mobile is fine but in other airports only mobile is not enough for check-in. But it is also true that at Beijing airport they manually check-in and load luggage check the weight and scanning is done to check for any unwanted items. Here in Amsterdam there is a automatic baggage drop system where luggage is supposed to be kept in certain position and sticker is supposed to be done by the passenger themselves.

O- So you like the automated system at Amsterdam airport you mean?

A- I don't necessarily like it but I understand it is to save time and reduce the airline staff. It is useful for frequent travellers. In Asia I have not seen this system besides if one is not used to the automated system then it can be a time consuming process.

O- I assume you are a frequent traveller now so what would you choose between the automated system and manual check-in procedure?

A- I think I prefer the manual system as then I can consult with them of any doubts that I have. So these rules at times can be overlooked even by frequent travellers. Also the interface communication can be slow than manual ones for people who are old.

O- There is no assistance for automated machines?

A- There is assistance for the automated machines for sure. But there is one or two personnel for ten or more machines. So they are really busy taking care of everyone's queries.

O- So during your first check-in with automated system how was your experience?

A- The interaction was good with the staff and also the interface of the software was good. The user interface in this case was quiet simple.

O- So the software interface that is used is what you liked.

A- Yes it was good. It had language preferences as well. In the end the instructions in other languages are more easily understood. Take for example putting on the sticker. The sticker has to be put on the baggage in a specific manner and there you find the need to be communicated with a language you are more comfortable with.

O- Do you prefer functional facilities for check-in or the facilities are supposed to be visually appealing too?

A- Obviously when you have hi-tech check-in systems then the image of the airline is bound to be really appealing. But with hi-tech system I do fear of the system getting hacked and then information getting haywire. I do not think of this while booking flight ticket but when I like to observe the operations of systems like these.

O- Due to the automated system do you feel your baggage is not safe?

A- Actually no. I do not fear automated system for safety. Humans are more susceptible for error. For automatic systems the only possibility for error occurring is when I fill in the wrong information which again is human error.

O- So for ease of use you prefer manual system and for safety you prefer automated system?

A- I like getting served. But with automated system I can be sure that all the information given by me is correct. So all in all if the system is reliable then I prefer automated system.

O- Does appearance of staff matter to you as well?

A- Not really. As long as they interact and provide service in a courteous way then the appearance does not matter a lot to me. In our tradition the attention is more on politeness and respect. For example the staff of any Asian airlines is courteous and polite unlike other regions. I do not mean to disrespect anyone but it is just a general feel of the service that I get.

O- Does this service style make you uncomfortable?

A- Not uncomfortable. But I do not feel welcome.

Participant 3 - C.S. - USA

O- I'll just give a basic information of what my Thesis is about. If you don't remember like, I am doing my Masters in Management of Technology. At the moment the Thesis that I am doing is related to 'Airline Service Quality and Customer Satisfaction'. So, basically through this interview I'll get an understanding of what are the parts or aspects that help customers improve the service quality. So, before we start, do you have any particular questions or is anything particular you want to

know?

CS- No. Not yet.

O- Okay cool. So, to start with, could you just give a basic background information or maybe something more related to 'Travel'?

CS- Basically, living in the U.S., for the most part, my job doesn't require travel. So, currently, any travel I would be doing would be purely leisure, vacate and holiday and so on. On an average, I fly about a few times a year, once to get to the destination and once to get back. So, in the past year I had flown to the other side of the U.S., to (the place 2:25) and back, and before that it was just travelling internationally between the U.S. and Europe.

O- Okay. So, have you had any experience with which you have not been satisfied with an Airline, like if you want to particularly give any?

CS- For the most part, I have had relatively good experiences on Airlines. So, I have never had any horror stories, I never had to wait exceptionally long at an airport to board. So, for the most part, I have had pretty good luck, I had say, with the Airlines. I have never had anything stolen, never had any baggage stolen or lost, everything's always arrived. So, I consider myself pretty lucky.

O- Okay. That's really nice. Well then, let's start with a basic check-in process, like, when you reach the airport, how much buffer do you keep?

CS- Usually, I try to arrive at least two hours before my flight.

O- Okay. So, that is including the check-in process and everything else?

CS- Yes. I usually try to get dropped off at the Airport two hours before boarding. So, whether it's taking a taxi or somebody drives me, I try to get out and on to the terminal two hours before, in order to do everything; check-in, security, all that.

O- Okay. So, during this process, do you think there's anything important that needs to be communicated between the passenger and the airline?

CS- Well, it would be nice to know, like, how much the estimated time for security check will be; Is it going to be a fifteen minute ordeal or I could just coop right along or is it going to be an hour away? So, it had be a nice thing to know how long its going to take to get through security because for the most part, it craps you. You don't really know.

O- So, the moment you enter the airport, does it mean that you don't find it important to find your check-in desk or do you know where you have to go, generally?

CS- Yeah, for the most part, I know where I am going. So I try to read it beforehand; which terminal or gate I am at, and then a lot of times at the airport when I am coming in, it'll say which airline I am flying and which terminal to go to and then usually the check-in is not too far from where I exit to get into the terminal.

O- Okay, and how about the check-in process? Do you have problems with the check-in process at times?

CS- No. They have been generally pretty good and I haven't had any issues with that. Usually, they are pretty well stacked. So, I have never really had that much of an issue getting seat in a reasonable time.

O- Okay. So, even for excess baggage aspects, is it important that the airline should respond well to it or stick with their norms?

CS- Yeah. For now I think, at least for me it has worked out, maybe its just because I tailored the way I travel to their baggage and the check-in procedures. So I usually take a lone check bag and one carry-on and I try to pack as least stuff as possible to fit it all.

O- Okay, so travel light. So, is there a way you select your airline while booking a ticket or do you have any preferences?

CS- Usually, its cost, definitely one of the key indicators. Second would be If I have a rewards card or a mileage card with them (airlines), for example, I have Sky Miles with Delta. So, if I am booking something I try to see a Delta flight or one of their affiliates in order to get the Sky Miles, so that I can cash it in later.

O- Yeah, okay. So, when you go through the check-in process what do you have to say about the physical facilities or how the ground person communicates with you?

CS- Well, definitely helps if you can see that they are organized, which has been mostly the case. I never really had an issue where I wasn't able to go up to somebody to ask them for help or for clarification information. So, in that respect, it has been pretty convenient.

O- Okay. So, till now you have had a problem free travel experience. However, lets say you have some issues in the future, touchwood, it shouldn't happen. In a scenario where you might experience mishandled baggage or damaged baggage, would you still stay with that airline company or would you rather avoid it?

CS- Well, I think that the more important thing is how they handled it. So, is it something that they just brush off or is it something that they would take the time to invest to try and figure out where my luggage is and just the way they handle it. I think that's more important than it actually being lost because I know stuff happens, they got to deal with a lot of baggage. So, I think the process of them trying to figure out where that luggage is and how they are going to get it to me. Ultimately, that's way more important than it being lost.

O- Okay. So basically, for you, the first preference is that your bag should be there and in case it doesn't happen to be there, then you want good service from them (airlines). Is that what you mean?

CS- Yeah. Certainly.

O- So, in which case would you decide that you have had enough and you are never going to use this airline again?

CS- Well, if its hard to get hold of somebody, so if they give me a run around, if I call their customer service and I just keep going through different menus or if its hard to get in touch with an actual human. If that happens a lot, then eventually, you know, I am going to be sick of having to deal with automated services. So, it definitely helps if they have human staff, that's available to help. Also, if its just things that are repeat. So, if they repeat a lot of problems or issues, they lose my luggage repeatedly, it definitely is not going to fare well.

O- So, as long as you have got prompt service from them, you are happy with it. Okay. So, apart from that, do you feel, while transferring from one flight to the other at a central airport, that you have to rush a lot or any information is less?

CS- To be honest with you, I never had to do a transfer of flight. I've always have direct flights.

O- So, you preferably select flights with less transfer.

CS- Yeah. That's actually another key aspect to selectin flights, I should have mentioned that earlier. I always prefer direct flights. Its makes it a lot easier and I am willing to pay a bit extra for it.

O- Okay. So, except for the security process, you don't mind anything else, is it?

CS- Well the airplane food could be lot better (Laughs). No, I think for the most part, I know it's a stressful thing to get on to a plane, but I think, in most respects, at least in my experiences its been pretty good.

O- Okay. I understand that you have had a very good experience. But what according to you are the pointers or the aspects that should be present in the service of an airline to make the experience good? So, if you could just mention which are the most important aspects, like you can't just do without it, to rate it as a good service.

CS- To rate as a good service, Efficiency. Must say that. So from the moment I get out of the car in to the gate, if that can be as efficient and seamless as possible, that really makes it a lot easier, a lot more enjoyable or lets say much less painful.

O- So, basically you want a smooth flow of the whole process.

CS- Yes, exactly. From getting, you know, even if you are just getting into the airport, stepping out of the car, or getting to the check-in to get my tickets, drop off the bags, security and then to the gate. If that can be as smooth as possible, that's the best.

O- SO, in that smooth process, is on-time departure of the flight also included?

CS- Well I guess, that the departure, when they plan to leave, that kind of gets the ball rolling in terms of how much time do I get myself to get to the airport. So, if I

know it's going to be a real smooth process and its been done before, then maybe I only need an hour to get there. I would only need an hour to get to the airport to do all that. But if I know, if it's a really notorious airport, that has a lot of problems, or maybe if it's a notorious airline hat has lot of issues, then I am going to need at least two maybe three hours.

O- So, do you mean that a delayed flight would be a not satisfactory experience for you or maybe the whole experience of service was not up to the mark?

CS- If the flight is delayed, I would say no because there are multiple reasons to why the flights delay, and that might not be based on just the service at the airport, on the landside. So, I wouldn't automatically dismiss it as something being like the airport or the airline at the airport cost.

O- So, from all these I can only see that one of the biggest sore point for you is the security.

CS- Yeah, especially here in the U.S. They make you strip down and everything.

O- Okay, cool. So, any other points which you would like to add, any suggestions or maybe a good or bad experience that you had.

CS- Well, we have an airline here in the U.S. called Southwest Airlines. What they do is that when you pick up a ticket, its kind of like first come first serve with the tickets. I remember, I think, whoever shows up first at the gate gets priority seating. So, its first come first serve at the gate. I kind of like that.

O- At the gate as in, at the boarding gate or the check-in gate?

CS- Yeah, at the boarding gate. So, if you get there early enough and you get there first in line, you get to choose whichever seat you'll have in the plane. Its kind of a different experience. Its not for everybody but I kind of like that because I like getting there early, getting there settled. So, its just nice to have a free brain over whichever seat you would like to have.

Participant 4 – D.R. – India

O- Hi Dinesh. Thank you for making yourself available for the interview today. Currently I am doing my Thesis on 'Airline Service Quality and Customer Satisfaction for Baggage Handling Aspects'. So, to begin with, how many times do you fly?

DR- Well, last year, I flew from Netherlands to Germany about 4 to 5 times. Before that I have flown to India about 2 to 3 times. We also went to Italy once.

O- Okay. Basically, in the past 2 years, you have travelled about 4 to five times within Europe and a couple of times outside of it. So, could you just briefly explain about your preparations on the day of the flight, like, when do you leave from home etc.?

DR- Yeah, okay. Well, when I was travelling to India for the first time from here, I was a bit worried as I had to take care of lot of stuff like the resident permit, visa and the luggage weight, which was the main criteria as I was allowed to take only 25 kilos. I also had a friend with me, which is better, because if you need to get anything like the boarding pass or maybe go somewhere, you can leave the luggage with your friend and also, you have company in the flight. Here, I didn't find any procedures as such. You just have to show your boarding pass and that's it. So, I reach the airport maximum one and a half hour before my flight time. But, yes, I do check the necessary things like the tickets, passport etc. at least 2 or 3 times and I keep 2 or 3 options ready for how to reach the airport.

O- Okay. So, when you are at the airport, do you find the need of any guidance of where to find the check-in counter etc.?

DR- No, I don't think there's a need of that because be it any airport, they put up everything like the airlines that are flying, their respective check-ins, the flight schedule, the aircraft number, the status of boarding. So, even if it's the first time, you won't find it that difficult. Also, in most of the cases you might have a problem with the luggage because you don't know how much exactly it weighs. But they do give an allowance of about 1 or 2 kilos and you have the option of taking out the jacket and keeping it in the hands. So, if you have all the right documents, everything is almost done.

O- So, what generally is the check-in procedure that you personally have to follow for any airport?

DR- Well, you could always get the boarding pass about 24 hours in advance by doing online check-in. With that, at least here in Europe, they would just weigh your baggage and its almost done. They won't even check your passport. But, if you don't have a boarding pass, then they check your passport and other documents and then give you a boarding pass.

One of the good that things that happened to me was during the transit stuff. I was flying to India and had a transfer of flight at Abu Dhabi. I reached the airport about 4 or 5 hours earlier than the transit aircraft. So, they upgraded me to Business Class, on first come first serve basis.

O- Okay. So, did this have a positive impact on you towards the Airlines?

DR- Yes, it did. The Business Class was really good. I was flying with Etihad Airways. When I was first flying from India to here, I flew with British Airways and their service was not so good. But the Etihad Airways is really good. Also, the food was better in Etihad than with British Airways.

O- So, at the check-in counter, how long do you have to stand in the queue? What do you have to say about that?

DR- Well, for me, its never been more than 15 minutes. Usually, its between 10 to 15 minutes. Most of the airports have a lot of counters for each airline. So, it doesn't take much time. If you reach 2-3 hours earlier, it won't take more than 5 minutes, but if you reach just about before the closing of the counter, it will take about 15 minutes,

not more than that.

O- Okay. You were telling me about pre-booking where you could get your boarding pass 24 hours before. So, do you do that always and just complete your baggage drop while checkin-in?

DR- Yeah. I mostly do it that way because I can select my preferred seat. Also, then, you need not go to the airport 2 or 4 hours before. You can go just one hour before your flight time, show them the boarding pass, drop the baggage and its done.

O- Okay. So, talking about the baggage drop, have you ever had any experience where you had an overweighted baggage or some commodity which isn't allowed?

DR- No, not really. But once, when I was travelling for the first time from India to here, I was with two friends. One of my friends had an overweight bag, but I had some free space in mine. So, when he was asked to remove 2-3 kilos from his bag, he put some things in mine and it was done. Its always better to have someone with you for long journeys or else you might have to just leave some stuff back or pay more etc. Most of the airlines do give an allowance of 1-2 kilos but some airlines like Emirates, don't even allow 500 grams over the limit.

O- Okay. So, after you check-in, the next step is the security. So, how has that process been for you?

DR- Well, the standard procedure is that you have to take out all your electronics, they check it and then you are allowed to go. At some airports, like at Abu Dhabi, they do the security check two times, once, just after you check-in and second, at the gate. Also, whenever you travel, you are not supposed to take any liquids or stuff, more than 100 mL I guess. When we were travelling to Italy, we were allowed to carry 2-3 50-75 mL bottles but not one more than 100 mL bottle.

O- Okay. So, do you feel that you were less informed about the liquids?

DR- Well, actually, its written on the boarding pass that you are not supposed to take liquids with you. We thought that a 150 mL half-filled bottle is allowed but they just check what's written on the bottle and not the quantity inside. So, that way, its not allowed.

O- Okay. So, talking about the transfer of aircrafts, what is the exact procedure you follow during it?

DR- There was an instance where I was flying from India to Netherlands. I had two transfers, from Chennai to Delhi, from Delhi to Abu Dhabi and from Abu Dhabi to Netherlands. At Chennai Airport, I got boarding passes for Chennai to Delhi and from Delhi to Abu Dhabi and I was told that I would get the boarding pass for Abu Dhabi to Netherlands from Delhi. At Delhi I was told that I would get it at Abu Dhabi itself because it was a different airline. It was KLM from Abu Dhabi to Netherlands and the previous flights were Etihad. I reached Abu Dhabi about an hour before my flight. I had to wait for 10 minutes in the queue at the Etihad counter. Then I was told that I am supposed to go to the KLM counter. So, I had to run another 5 minutes or

so to get to the KLM counter and get my boarding pass as I had only about 45 minutes before the counters close. But KLM told me that it was their fault as I should have got the pass either at Delhi or Chennai and they would arranged for a different flight or allowed me to get in even after the counter closes.

Also, once, I was travelling with Etihad from India to Belgium as it was cheaper compared to travelling to Netherlands. But at Abu Dhabi, something got goofed up and when I reached Belgium, my luggage had not reached. So I went to the counter, filled the form, for which I had to wait for hour. Then they told me that they would send me the luggage at my address in Netherlands. I received my luggage in a couple of days. But I wrote to Etihad that I had to buy some necessary stuff as I was not having my luggage and they refunded me a certain amounts.

O- Okay. So, did they refund it to you immediately? Were they continuously updating you about it?

DR- Well, they didn't do it immediately. I had to go through some procedure like filling up the form etc. They refunded me the amount about 3 weeks later. But, yes. I was being updated about it.

O- Okay. So, moving back a bit, could you give some more details on the transfer issue? Was it that the airline itself didn't know that with whom you were flying?

DR- Well, I had booked the flight on a website called Sky Scanner. I had booked it with Etihad but Jet Airways and KLM are partners with Etihad. So my flights from Chennai to Delhi and from Delhi to Abu Dhabi were with Jet Airways, the boarding passes of which I got from Etihad counter. But, the KLM pass, I had to collect from their own counter. Maybe if I had booked tickets from Etihad website, this issue might have not have come up.

O- So, now coming back to the missing baggage issue, what exactly had happened and how was the service given to you?

DR- Well, it happened that I got down from Jet Airways and switched to KLM. This was just one hour time which was not enough for them to shift my baggage at the Abu Dhabi. So, instead of delaying the whole journey, they let the baggage stay back. When I reached Belgium, I came to know of this. They tracked my bag which was in Abu Dhabi and promised me that they would send it to me if I can't collect myself shortly. But it was okay as I landed in Belgium on Friday and got my luggage back on Monday. This happens quite some times during transfers as my friends also have experienced. The service provided by them was quite good.

O- Okay. So, do you have any other experience with baggage that you would like to share?

DR- I was once travelling from Berlin to Rotterdam. I had to work till 5:30 p.m and I had a flight at 9:30 p.m. I had just a laptop bag and a handbag. When I was in the flight, I was reading for my exam next day. When the flight landed, I somehow took only my handbag with me and forgot my laptop bag in the aircraft. When I reached home, I realized that I didn't have my laptop bag with me. I had taken 2 trains and one bus to reach home from the airport. So, I called the bus and train services to

check but they had not found any such bag. It never occurred to me that I might have left it in the plane. Finding the bag was really important for me as it had my passport apart from my laptop in which I had my Thesis stuff. In case of lost passport, you have to lodge a police complaint and contact the embassy. So, I did the same after waiting for 2 days. It becomes pretty expensive because you need to pay a few hundred dollars to get a permit from the embassy to travel without an actual passport and to get a substitute passport. Also, I would have had to buy a new laptop as for most of my work, I use a laptop. I then called Lost and Found Department, again instead of the airport. They too had not found the bag. Two days later, I left for Berlin and luckily was allowed at the border security without a passport on the basis of the police complaint. After I reached Berlin, as a last resort, I called the airlines and they had a bag. I told them my seat number and then they checked the bag. It had my passport, my laptop and my Rolls Royce id. Then I sent a friend of mine to collect my bag.

O- Okay. But, why did the airline not contact you earlier?

DR- When asked them the same question, they told me that they have a rule that they are not supposed to open the lost bags before one week crosses. Come the weekend, they might have called me. They just checked if the bag wasn't hazardous and had kept it with them.

O- Okay. So, do you have any other experience to mention, or maybe any suggestions?

DR- Well, I would only say that airports or airplanes are one of the safest places to lose your belongings. In case it happens, please do not panic and contact the airlines. They keep all the lost items with them till a certain period after which, they report it to the Police. So, you would get your lost item back sooner or later. But yes, after this incidence, I keep a good check on my belongings and make sure I have them all the time.

O- Okay. Thank you Dinesh. That'll be it for now. I will contact you again as I progress in my Thesis.

Participant 5 - S.M. - India

O- Hi Swati. I'll just give you a brief information on how we will be going about the interview. We'll be going flow wise, like, whenever you travel, whenever you are at the airport, whatever procedures you go through, could you just briefly explain the procedures and whatever experiences you have had during those procedures, good or bad?

SM- For me, it's a bit different when I travel domestic, within Europe and when its international. Its much easier when travelling domestic. I don't have to pass through several securities. That's one pain point for me. For domestic, getting into and passing through the security is quite okay. But, for international, as I am an Indian citizen, I have to verify myself, of where I am travelling, which is an additional step. I have to go to the counter, validate my travel plan, my passport, my visa and then go to the security. But, I do understand, that's required.

O- Okay. So, how many times do you travel? And is it for work or leisure?

SM- I've been travelling quite a lot with this job, more than 10 times a year. About 75% of it is for work and the rest is for leisure. The flights are variable, sometimes its more international travel and sometimes its more domestic travel.

O- So, for international flights, is there any particular destination or area you fly to?

SM- Mostly, It's the US, but I have also flown to Japan, Hong Kong and India.

O- So, whenever you are travelling by flight, how much buffer time do you keep to reach the airport?

SM- Well, if its domestic, I try to be there an hour before my flight time. But, for international flights, it increases to one and a half hour or two. That's because I check-in online and I just have to drop my luggage and security which doesn't take much time.

O- Okay. Well, I have interviewed a few people. They say that even with the web check-in, it takes a lot of time for baggage drop because of the queue time. Do you also have such an experience?

SM- Well, actually, no. Probably because I do not take a lot of baggage with me. So, web check-in, for me is quite convenient, especially because I don't have to drop my baggage, I just have to walk through security. At one instance, I was pretty easy because they have an automatic baggage dropping system.

O- So, do you prefer automated baggage drop or manual one, where you have a customer care executive?

SM- Well, for me, its easier when I am at the counter with someone to guide me. Also you get to know if you are within the limit of your baggage weight allowance. So, I prefer manual process to the automatic one.

O- Okay. So, have you had any issues with baggage weight ever?

SM- Actually, quite a few times. Sometimes, its fine cause it just plus 2 or 3 kilos. However, at one instance, I was flying with KLM, I had in mind that I was allowed three 23kilo bags, but I took two, one of which was 28 kilos instead of adding the third bag, which was not allowed. So, I had to shift my stuff.

O- Okay. So, how was your experience over this? Did the airline help you in any way?

SM- No. They just said that they cannot allow that and I had to take help, from my friends around, to move my stuff in some other baggage. I do understand that they have all kinds of regulations for baggage size and weight. So, its okay.

O- Okay. So, you couldn't dispose or remove any stuff?

SM- Well, I had to because I had to bring it down to the level allowed. Luckily, I had a couple of friends travelling with me. So, I could shift some stuff in their bags.

O- So, if you didn't have any friends with you at that time, what were the other options?

SM- If I didn't have any friends with me, probably I would have argued a bit more or negotiated or may have complained because I really had to take all that stuff.

O- So, any other issues any other issues you have ever had or any other experiences?

SM- Well, this was a negative but I also had a good experience, again with KLM. I mostly travel with KLM, especially for international flights. Its direct, which helps. It was a flight to India and it got delayed by more than 3 hours. We had to wait as there was no other option. However, one of my colleagues told me that there's a rule which says that if the flight is delayed by more than 2 hours, the passengers are given some compensation. So, I wrote to KLM and they actually reimbursed quite a good amount with an apology mail. But I guess, a lot of people don't know about it. Even I was informed by a colleague of mine. After that, I did it to all the other airlines that were delayed. There was another one with United Airlines, in U.S. I was travelling from San Francisco to LA. The flight was for about an hour and it got delayed by more than 4 hours. So, I wrote them an email as well and I got some compensation.

O- Okay. So, this one good aspect that you do get compensations for excessive delays. When your flight got delayed, how was your experience? And how did you know that its got delayed?

SM- Well, it got delayed on the spot. I reached the airport and I came to know that its delayed. And its not like the flight gets delayed for three hours so that you can go somewhere and come back. It gets delayed by an hour in increments. About the delays, I saw it on the screen at the airport. I am not subscribed to Airline notifications.

O- So basically, you didn't have anyone from the airlines to help you or give you updates on that. Was that problematic for you?

SM- No, not really because once you are at the airport, you are anyway more cautious of what's happening around you and you keep checking for the flight status yourself.

O- So, in a way, you mean to say that as long as you have checked in and at the gate, you don't have a problem with the flight getting delayed, is it?

SM- Well, yes, if I am aware enough. I mean, I know some people who couldn't make to their flight which got delayed and maybe they forget it or maybe are having something.

O- Okay. So, have you ever missed a flight?

SM- Luckily, no. I don't want to ever miss a flight.

O- Okay. After you are done checking-in, you go through the security process. What do you have to say about that process?

SM- I hate that process and I'm tired of it. If you have to travel say, every two weeks or every month, its really weird that you have to take all your electronics, all the liquids and stuff out at the security counter and put it all back in. Sometimes, it's the country which is more annoying. Like, in the US., when you enter the country and are going to some other city, though it's a domestic flight, you sometimes have to go through the security again. Of course, it does have a good objective, but, its annoying.

O- And, do you have any notable experiences at the security? Probably you had something in your bag and they asked you to remove it.

SM- Yeah, that happens quite a lot. They just feel that there's something in the bag and they check it again. I think that's fine.

O- Okay. Now, coming to the duty free items. Do you look for duty free items or do you directly go to the terminal?

SM- Well, I don't really go with an intention to go shopping. But yes, if you have time, its fine to just browse through. Sometimes I take liquor but I don't really go there for shopping.

O- Now, let's talk about transfer of flights between say, A point a B point. Do you have transfers when you fly or do you take direct flights?

SM- Yeah. Its mostly when I travel international. Last year, I went to a city which has no direct flight from here. So, there were transfers and some of them were really annoying because of the security.

O- Okay. So, is it only because of the security that you feel transfers aren't good? Have there been any instances when you had really short transfer time?

SM- Yeah. I would say its mostly the security, the rest is fine. There have been instances when I had short transfer times, but, I made it up in time. Its okay, because there are people from the airlines to help you and guide you to go to the right gate. Also its pretty clear where you have to go as they put it up clearly enough on the airport.

O- Okay. So, you do have assistance to hurry you up through the security because if the executives are not present then you might get stuck up in the security process again.

SM- Yeah, that's true. But my experience has been that usually its just from one gate to the other . Only in the US, did I have to take my bags, go to the counter and go through the whole security process all over again.

O- Okay. So, coming to the baggage aspect, do you have any experience wherein your baggage was broken or misplaced or late?

SM- Not with me but this happened with my parents, with KLM. When my parents arrived here, there were two similar bags and we picked up the wrong one. We realized it about an hour later but luckily, we were still at the airport. So, we went to the KLM counter and asked for assistance. They guided us to the special office they have for baggage delays. We went to the belt area where we had to just drop the wrong bag and find ours. Our bag was not on the belt but was kept on the side. But yes, we did find the bag. So, its okay.

O- Okay. So, during this, how was the guidance give to you? Was the assistance provided to you till the end or it wasn't?

SM- No, it was not that they were guiding them. We went to the service counter and they just told to go to the different belts where we had to search for the bag ourselves.

O- So, other than this, do you have any experiences that you would like to share?

SM- There was one instance, where I was at the Indian Airport. The tag that they put up on your bag, that fell of mine. So at the security, they sent me all the way back to the check-in counter to get a new tag. That made it a really short boarding time for me and I had to literally run to get things done in time.

There's another instance, where me and my colleague were travelling with AirBaltic. He reached the Airport a bit late because of train delay and he came straight to the security. He had a pair of scissors, which are generally allowed. But, he was sent back to check-in. This too was a very short boarding time. When we reached our destination, we realized that his bag was never checked in. So, he contacted the airline and was in touch with them for about 6 hours and after that we came to know that the bag was coming with next flight. This was a bit weird because he should have been informed at the check-in that it might happen that they might not be able to check the bag in and it might come with next flight. Nevertheless, he got the bag and everything was fine.

O- Okay. Thank you Swati. That would be it for now. I am sure this will help me a lot in my Thesis.

Participant 6 - X.M. - China

O- Hello Xiaoman. Thank you for coming for this interview. Basically, my thesis is about Airline Service Quality and Customer Satisfaction for baggage handling aspect. So, before we go ahead, do you have any kind of questions?

X- No.

O- Okay. So, to start with, could you just give a basic background information about yourself?

X- Well, my name is Xiaoman. I am from China. I have done Bachelors in Geographical Information Systems. After that I worked for a company O.N. Haviers,

two years in China and two and a half years in Singapore. Now, I am studying Management of Technology in TU Delft.

O- So, basically, you worked for a total of four and half years. So, you used to travel quite a lot, for work?

X- When I was working in Singapore, I used to travel a lot, at least once every month.

O- Wow! Okay. So, basically you have a good flight experience according to that then. So, to start with, if you could remember, what all activities you do when you reach the airport, could you explain briefly?

X- Well, first I need to go to the counter to check-in, for luggage, if I have any, and to get my ticket. After that I have to pass through the security counter. Then you can wait in the line to enter the airplane. Its basically these three steps.

O- Okay. So, when do you reach the airport, just in time or do you keep some buffer time?

X- Usually one or two hours before my flight time. It also depends on the country you are in, for example, in Singapore, its very fast. There are many counters and the process speeds are very fast. However, I remember when I travelled to Philippines, I had to arrive about three hours before flight time.

O- Okay. So, you say that you modulate your arrival time at the airport according to the speed of service that you get.

X- Yes. It also depends on the time of day, like, if I am travelling in the morning, I think less people travel at that time. So probably, I do not need to buffer a long time. It also depends on the seasons like, if its summer holiday, I guess, more people travel.

O- Okay. So, most of your travel, is it for leisure or for work?

X- Mostly it's a business trip.

O- Okay. So, you say that according to country the check-in time and other processes time varies. So, do find it problematic to be in the queue? Is that the reason why you modulate your timing of arrival at the airport?

X- Yeah. For example, if I travel to Philippines, and if I come on Friday, its very crowded. My friends tell me that Fridays, it usually terrible. The airport is crowded and you have to stand in the queue for a long time. I also remember that once I had to pass through the security immigration in Malaysia which took me about two hours. So it depends.

O- Okay. So, you don't like waiting the queue for a long time, like check-in?

X- Yeah. Right now I really feel that the Singapore airport is the best because they

have a lot of different kinds of machines. You can punch through the machines, like the service officers do.

O- Okay. So, you mean automatic machines? Like the one in Amsterdam, a Skipper?

X- Yes.

O- So basically, you prefer automatic machines to the manual process?

X- Yes, because of the speed. But you need to have the work permit. For example, I have the work permit in Singapore. So, I can use the machines there. But if I travel to countries where I don't have permit, Philippines for example, I have to go to the counter. Also, they have separate counters for the local people and the foreigner and usually, there are less counters for the foreigners.

O- Okay. So, there are very less counters for foreigners and more for the local people. So, you don't like to be segregated, is it?

X- Yes. Also, sometimes it happens there is nobody at the local counter. In that case they ask us to go there.

O- Okay. So, you said that automated check-in over manual process would be preferable for you. So, you don't prefer human interaction, is it?

X- Well, I feel it takes more time.

O- So, is it that it doesn't matter to you as long as your check-in is fast?

X- I think that the most important thing is that it (check-in process) should be fast.

O- Okay. So, do you have any experiences during checking in your baggage that you would particularly like to share?

X- Well its been so far so good. But it depends on which airport or which airline. Sometimes they damage your luggage. Sometimes they just throw away your luggage. Also, some airports are stricter in terms of the weight.

O- Okay. So, you say that depending on the airport and airline, at times, the baggage gets damaged. Have you ever experienced a damaged baggage?

X- Yes. When I was in U.S. I took a flight from Las Vegas to Los Angeles, my baggage was broken. Probably my luggage quality was not so good but I think the reason was they just throw the baggage.

O- Okay. So, do you remember which airline you were flying with?

X- Yeah. American Airlines.

O- Okay. So, what help did you get from them or what did you do after your bag got

damaged?

X- Well, I tried to use the taps. I try to fix it because I still had to transfer that time. Its not convenient to buy a new bag, so, I tried to fix it myself just to survive for another flight.

O- But you didn't go to the airline to tell them about it?

X- No. I just felt it was too troublesome. So, I did not complain.

O- Okay, Was there a reason as to why you did not complain?

X- Well, you spend a lot of time in trying to explain to them and I probably would have to fill some forms etc. Still there is no guarantee that I will be catered to after that. So, that's the reason I did not complain.

O- Okay. Now, talking about the security process, you said that at some airports, like at Philippines you had to wait for about two hours. So, do you think its very bring to do security check-in?

X- I don't know if I can say its boring because it's a necessary process. However, probably, they should use new technology or they should have more counters or probably they should plan to where to see when it might happen more passengers to pass through. I think they can do it better.

O- So, you mean to say its necessary to have security and you are okay with spending a bit more time at security because of safety issues?

X- Yes, I believe that.

O- Okay. Do you feel secure with the kind of security check-in that happens or at times, do you have a doubt?

X- Well, they check your I.D., they check your passport to make sure it is a real one. Some airports, they also check your finger prints like, when I have to pass through the Singapore airport, they check my finger prints. Also when I was in the U.S, at the Los Angeles airport, I even have to go through the X-Ray machine where they scan your body. It's a little bit troublesome, but, no choice.

O- And after security check-in, do you directly go to your flight?

X- Well, you at least have about a half to one hour. So, I just go around inside because after you pass through the security gate, there are some shops present. So, I go shopping and get something.

O- During this whole process, do you ever feel that you are less informed about anything?

X- So for its good because I am already kind of familiar with the process.

O- So, since you are quite a frequent traveller, you don't feel the need to take

anyone's help or you don't need that much of assistance.

X- Yeah, so far, I mean. Probably, sometimes I have difficulty to find the counter because different airlines have different counters. Usually, I have a problem finding the counter the first time, but you just have to check with the officer at the airport. They help you.

O- So, do you feel that there is a need, by the airlines, to inform beforehand to make it easier to find the counter?

X- Yeah. For example, if I take the Singapore Airlines itenary, it will show which transit or counter to go to. But, at some airports, like the Philippines airport, it depends. You may go to one counter at a time but at a different counter the next time.

O- So you prefer that someone from the airlines is present to tell you where to go

X- Yes. If I cannot find it, I need this kind of person to tell me or it is better if they can inform in advance instead of me needing to figure out after I reach the airport.

O- So, you prefer advance information about the counter. Other than this, do you have any experience you would like to share, about anything in the beginning of the process which was noteworthy or which you didn't like?

X- Well, after a while, I feel that online check-in is quite good. But it depends like, at some airports the online process is really poor. At some airports it works while at some it doesn't. At some airports they have separate counters for online check-ins but at some airports, even if I check-in online, they don't have a separate counter and I have to stand in the queue for my luggage and other things. I also remember that, when I was at US airport, they have machines in which you can weigh your luggage bring the baggage to the counter yourself which saves time.

O- So, you prefer self-service option?

X- Yeah. Its basically similar to a supermarket. So you have different options for check-in and you can choose whichever you like.

O- So, other than this, have you ever experienced a delayed flight?

X- Yeah, I have experienced delayed flights. I really hate it.

O- But, if the flight has been delayed, how has your experience been like, did the airline tell you that the flight has been delayed or you didn't know and it kept on getting delayed?

X- Sometimes they inform in advance but sometimes, after I reach the airport, they realise that the flight is delayed. They never explain to you as to why it happened or they never give you food or other stuff.

O- So, even after the flight is delayed, you don't get service?

X- Yeah. But, it depends on the airport as well.

O- So, have you always been notified when the flight has got delayed?

X- Well, at least when you reach the airport, they let you know of that.

O- So you have efficient guidance given by the airline?

X- They let you know through the announcements on radio or

O- Okay. So, now that we have spoken about the start process, have you experienced transfer process or a hopping flight?

X- Yeah. I flew from Las Vegas to Los Angeles and then from Los Angeles to Hong Kong. But only if I take the same airline, they will transfer the luggage for me.

O- So, only for the same airline, the baggage gets transferred. Else, you need to claim it, is it?

X- Yeah, for different airlines you have to transfer it yourself.

O- So, you want the baggage to reach the destination. You don't prefer picking up the baggage between transfers?

X- Yeah. I mean, it is better if they can do it themselves. But I remember that once, I was flying from Singapore to Hong Kong and from Hong Kong to San Francisco. Even if I had different airlines, they helped me. I talked to an officer. I told them about my stuff and flight number and they helped me to transfer the luggage.

O- Okay. So, they did help you. So, in Hong Kong, you interacted with them and asked them if they could help you transfer the baggage?

X- Yeah. My first flight was , I guess, A Star and the second one was Singapore Airlines. So, I talked to the Singapore Airlines officers and they helped me.

O- So, was it very fast or did you have to fill up any more information or forms?

X- No, no need. I just had to present my ticket, tell them about my flight and they did it for me. No need to fill any form.

O- And, during that transfer process, when you are going from one terminal to the other, after you get down the flight, you don't get the information about where the flight is or do you know about it.

X- Well, there are a lots of screens which you check on.

O- Okay. So, you have never missed a flight in that?

X- No. So far, I haven't missed any flight.

O- But, you think its important to have information board?

X- Yeah.

O- Saying about baggage claim, you said that your bag got damaged once. Have you ever experienced a misplaced baggage or a lost baggage?

X- No. So far, no.

O- So, when your bag got damaged, you decided not to complain because of thet issues with the paper work. So, what would have made it different for you?

X- Probably if it was an expensive item or any important stuff, I would have talked to them. But, it was just my bag and the stuff inside was not so expensive, just clothes and other stuff.

O- Okay, So you would have gone to them only if it was some expensive stuff. And while interacting with the Airline officials, do find any language problems?

X- So far, no problem.

O- So as long as they interact with you in English or Chinese, you are okay with it.

X- Yes.

O- Any other information which you would like to add or any other notable experience which you would like to share?

X- Well, I find it troublesome that sometimes, I am not completely aware of what kind of stuff I have to do. When I pass though the security check-in, they say that there is something inside my luggage that I should not be carrying. So, I have to open my luggage again and try to find maybe something like, small scissors.

O- So, you feel that at times, you are less informed about what is legal to take on the flight and what is not?

X- It's the last step before you enter inti the airplane. So, the only thing you can do is throw away that stuff. Also, they write down your name mentioning that so and so passenger carried so and so stuff which is not allowed.

O- Yeah, okay. So, do you have any preferences or suggestions on this?

X- Yeah. Why not have a device, before I check-in, so that If I am not so sure, I can scan my luggage there and they can give me an indication that I probably have some illegal stuff in my luggage. That way, I can probably adjust my luggage beforehand, before I check-in.

O- Okay. Do you have any preference about the personnel you interact with or you dint really pay attention to it?

X- Well I just care about their service. Some people are polite and patient and some are not. Even at the security counter, when you pass through, at some airports, the officers smile and talk to you and don't make you feel nervous. But, at some airports, they just won't talk to you and only do their job.

O- Okay. So, polite people are preferred to non-polite ones?

X- Yeah. Also, the person should be approachable.

O- Okay. So, going by approachable, when a person is well dressed, you feel safe to approach. So, does the appearance of a person, or the way he is dressed or clean he is, does it matter to you or its not important?

X- Its always better for them to wear their uniforms, or formal clothes. The person I go to for asking for help should look more professional.

O- Okay. So, I think, that should be it for now. Thank you very much for giving me your time. I am sure this will be very helpful for me.

Appendix 5

Survey

Customer Satisfaction Survey for Airlines

Dear Sir/Madam,

The ground services consist of numerous processes which can leave a big impact on customer flight experience (check-in process, baggage handling, complaint processing, compensation payments). There are various agencies like the security, check-in, baggage handling, airport authorities that are involved in making the process as smooth as possible. This research helps at contributing towards improving the service quality of airline ground services. The survey is divided into 3 parts. The first part is comparisons between a list of criteria related to service quality. The second part is related to factors that may affect your expectations and the third part is to gather your background information. All information collected from the survey will be kept confidential and anonymous. The survey filled by you is helpful for airlines to serve you better so please do answer all the questions as a completed survey can be useful for the study.

Sincerely, Oshan Kothadiya (MSc. Student - TU Delft, The Netherlands)

We first define a few terms that we are using in our survey to make it easy for you to understand the questions being asked.

Tangibles: The appearance of physical facilities, advanced equipment, personnel and communication materials in the service process, such as cleanliness, appearance of staff and appropriate technical equipment for support.

Reliability: The ability to perform the promised service dependably and accurately. For example the consistency in meeting promises and services like speed of check-in process and the completion of tasks on-time like getting your checked-in baggage on time.

Responsiveness: General willingness to help customers and provide prompt service, which refers to the ability of responding to individual customer requirements and showing sincere interest in problem solving.

Assurance: Includes the competence and courtesy of employees and their ability to convey trust and credibility. The dimension would include staff training in competent and courteous charisma among employees and the feeling of safety in the transactions with the customers.

Empathy: Encompasses communication to customers and understanding of customers resulting in individualized attention to customers. This is an element in the service process that covers the level of individual and personal attention and the understanding of specific customer needs.

Suppose you are a airline passenger travelling to some destination. The following criteria and considered appropriate to measure service quality of an airline.

PART 1

1. In order to have good service quality which criteria do you think as the most important one? *

- Tangibles
- Reliability
- Responsiveness
- Assurance
- Empathy

2. Which criteria do you view as the least important? *

- Reliability
- Responsiveness
- Assurance
- Empathy

3. How much more important is Tangibles compared to Reliability?

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9

4. Now, you will see a few comparisons of your most important criterion with other criteria.

How much more important is-

Tangibles over Responsiveness

Tangibles over Assurance

Tangibles over Empathy

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

		1	2	3	4	5	6	7	8	9
"Tangibles" over "Responsiveness"	o	o	o	o	o	o	o	o	o	o
"Tangibles" over "Assurance"	o	o	o	o	o	o	o	o	o	o
"Tangibles" over "Empathy"	o	o	o	o	o	o	o	o	o	o

5. Now, you will see a few comparisons of other criteria with your least important criterion.

How much more important is-

Responsiveness over Reliability

Assurance over Reliability

Empathy over Reliability

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

	1	2	3	4	5	6	7	8	9
"Responsiveness" over "Reliability"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Assurance" over "Reliability"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Empathy" over "Reliability"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These questions concern the Tangibles dimension

6. Which factor is the most important for you, from an airline at the airport?

Physical Facilities = Airports, better check-in facilities

Advanced Equipment = Automated baggage drop, mobile barcode scanners at check-in

Personnel = Visual appearance of airline staff (professional appearance) *

- Physical Facilities
- Advanced Equipment
- Personnel

7. Which factor do you view as the least important? *

- Advanced equipment
- Personnel

8. How much more important is Physical facilities compared to Advanced Equipment?

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

1 2 3 4 5 6 7 8 9

9. Now, you will see a few comparisons between your most important criterion, Physical facilities with other criterion, Personnel and your least important criterion, Advanced Equipment.

How much more important is-

Physical facilities over Personnel

Personnel over Advanced equipment

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

	1	2	3	4	5	6	7	8	9
"Physical facilities" over "Personnel"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Personnel" over "Advanced equipment"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These questions concern the Reliability dimension

10. Which factor is the most important for you, from an airline at the airport?

Consistent service = Receiving standard service of airline,
Security checks of cabin baggage, baggage weighing
First time right = Arrival of check-in baggage at destination *

- Consistent service
- First time right

11. How much more important is Consistent service compared to First time right?

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

1 2 3 4 5 6 7 8 9

These questions concern the Responsiveness dimension

12. Which factor is the most important for you, from an airline at the airport?

Willingness to help = Assisting while check-in or transfer process, Helping in-case of baggage issues
Prompt handling of requests/complaints = Quick action for complaints, mobile barcode scanners *

- Willingness to help
- Prompt handling of requests/complaints

13. How much more important is Willingness to help compared to Prompt handling of requests/ complaints?

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

1 2 3 4 5 6 7 8 9

These questions concern the Assurance dimension

14. Which factor is the most important for you, from an airline at the airport?

Trustworthy crew = Theft from baggage
Knowledge to answer questions = Staff ability to answer questions put forth by customers
Crew courteousness = How airline staff respond to a customer *

- Trustworthy crew
- Knowledge to answer questions
- Crew courteousness

15. Which factor do you view as the least important? *

- Knowledge to answer questions
- Crew courteousness

16. How much more important is Trustworthy crew compared to Knowledge to answer questions? 1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

o1 o2 o3 o4 o5 o6 o7 o8 o9

17. Now, you will see a few comparisons between your most important criterion, Trustworthy crew with other criterion, Crew courteousness and your least important criterion, Knowledge to answer questions.

How much more important is-

Trustworthy crew over Crew courteousness

Crew courteousness over Knowledge to answer questions

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

1 2 3 4 5 6 7 8 9

"Trustworthy crew" over

"Crew courteousness" o o o o o o o o o
o

"Crew courteousness" over

"Knowledge to answer questions" o o o o o o o o o

These questions concern the Empathy dimension

18. Which factor is the most important for you, from an airline at the airport?

Personal attention = Constant updates of baggage after misplacing

Your best interest at heart = returning forgotten baggage, etc.

Understand needs = compensation reimbursement from the airline due to baggage mishandling issues *

- Personal attention
- Your best interest at heart
- Understand needs

19. Which factor do you view as the least important? *

- Your best interest at heart
- Understand needs

20. How much more important is Personal attention compared to Your best interest at heart?

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2,4,6,8=Intermediate values *

o 1 o 2 o 3 o 4 o 5 o 6 o 7 o 8 o 9

21. Now, you will see a few comparisons between your most important criterion, Personal attention with other criterion, Understand needs and your least important criterion, Your best interest at heart.

How much more important is-

Personal attention over Understand needs
 Understand needs over Your best interest at heart

1 = equal value, 3 = slightly more value, 5 = reasonably more value, 7 = much more value, 9 = extremely high value; 2, 4, 6, 8 = Intermediate values *

	1	2	3	4	5	6	7	8	9
"Personal attention" over "Understand needs"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Understand needs" over "Your best interest at heart"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part 2

To what extent the following factors have influence on your choice of airline

22. Word of mouth *

Very low Low Medium High Very High

23. Personal needs *

Very low Low Medium High Very High

24. Past experience *

Very low Low Medium High Very High

25. External communications *

Very low Low Medium High Very High

Part 3

Background Information

26. Gender? *

- Female
- Male

27. Age? *

- <18
- 18-24
- 24-30
- 30-36
- 36-42
- 42

28. Nationality *

- United States of America
- India
- China
- An EU country
- Indonesia

29. What is the purpose of your travel for majority of the time? *

- Work
- Leisure
- Other

30. How many times have you flown in the past 12 months? (a round trip counts as a once only) *

- None
- 1
- 2
- 3-5
- 6 and more

31. Occupation? *

- Employed
- Self-Employed
- Retiree
- Student
- Other

Congratulations! You have completed the survey.

Appendix 6

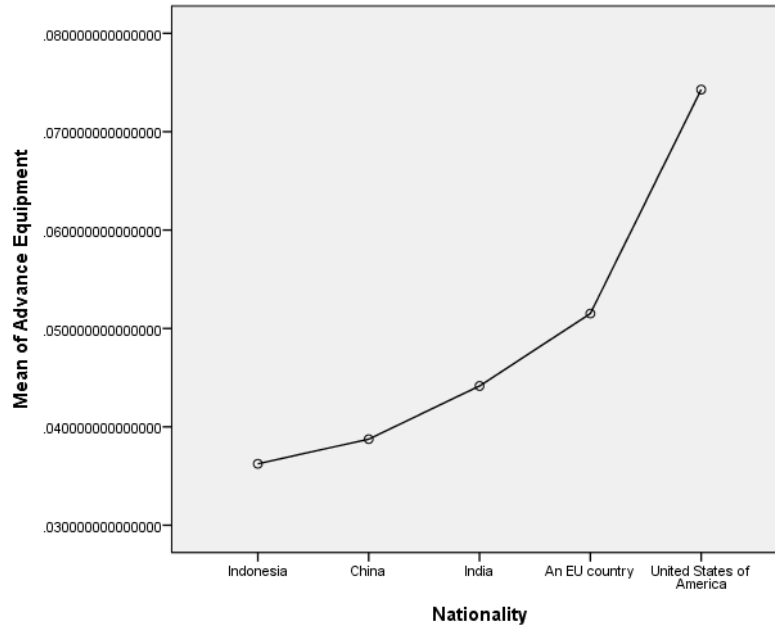
Statistical analysis

One-way ANOVA for sub-criteria with nationality

Nationality with tangibles sub-criteria

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Advance Equipment	Between Groups	.020	4	.005	1.249	.293
	Within Groups	.549	135	.004		
	Total	.569	139			
Personnel	Between Groups	.007	4	.002	1.311	.269
	Within Groups	.188	135	.001		
	Total	.195	139			
Physical Facilities	Between Groups	.008	4	.002	.323	.862
	Within Groups	.788	135	.006		
	Total	.796	139			

One-way ANOVA of tangible sub-criteria



Means comparison Nationality with advanced equipment

4.2.3.3 Nationality with reliability sub-criteria

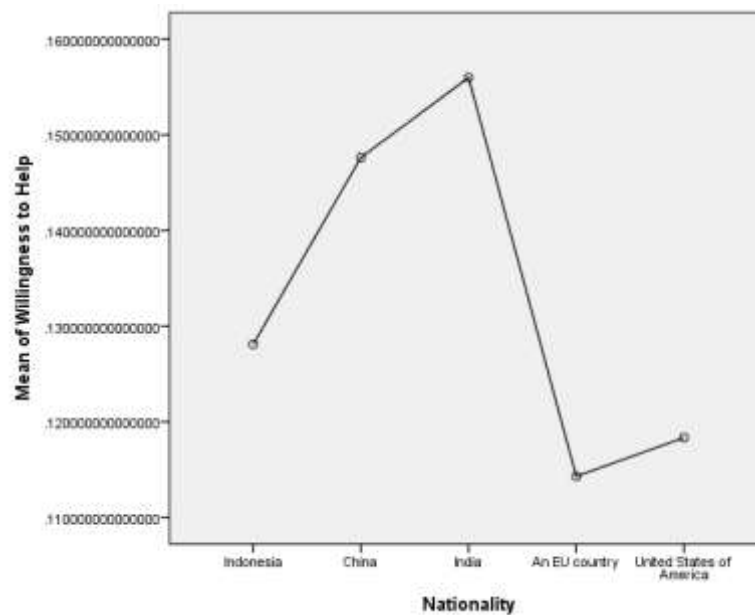
		Sum of Squares	df	Mean Square	F	Sig.
Consistent Service	Between Groups	.091	4	.023	.836	.504
	Within Groups	3.690	135	.027		
	Total	3.782	139			
First Time Right	Between Groups	.112	4	.028	1.304	.272
	Within Groups	2.896	135	.021		
	Total	3.008	139			

One-way ANOVA of reliability sub-criteria

4.2.3.4 Nationality with responsiveness sub-criteria

		Sum of Squares	df	Mean Square	F	Sig.
Prompt Handling of Request	Between Groups	.003	4	.001	.079	.989
	Within Groups	1.265	135	.009		
	Total	1.267	139			
Willingness to Help	Between Groups	.042	4	.010	.662	.619
	Within Groups	2.123	135	.016		
	Total	2.165	139			

One-way ANOVA of responsiveness sub-criteria

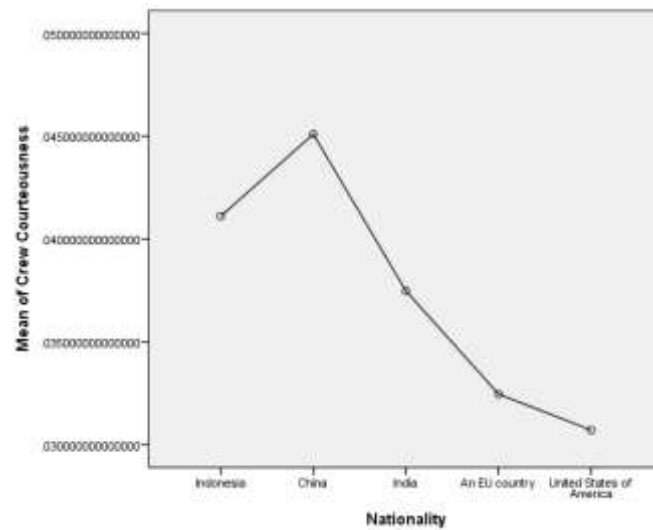


Willingness to help means graph

4.2.3.5 Nationality with assurance sub-criteria

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Crew Courteousness	Between Groups	.003	4	.001	.758	.554
	Within Groups	.141	135	.001		
	Total	.145	139			
Knowledge to Answer Questions	Between Groups	.006	4	.001	.365	.833
	Within Groups	.537	135	.004		
	Total	.543	139			
Trustworthy Crew	Between Groups	.012	4	.003	.541	.706
	Within Groups	.735	135	.005		
	Total	.746	139			

One-way ANOVA of assurance sub-criteria



Crew courteousness means graph

4.2.3.5 Nationality with empathy sub-criteria

		ANOVA				
		Sum of Squares	df	Mean Square	F	Sig.
Personal Attention	Between Groups	.009	4	.002	.856	.492
	Within Groups	.360	135	.003		
	Total	.369	139			
Understand Needs	Between Groups	.030	4	.007	1.465	.216
	Within Groups	.682	135	.005		
	Total	.712	139			
Your Best Interest at Heart	Between Groups	.007	4	.002	.723	.578
	Within Groups	.325	135	.002		
	Total	.332	139			

One-way ANOVA of empathy sub-criteria