

Master Thesis

In-flight service components influencing passenger satisfaction on long-distance flights within full-service airlines

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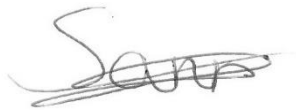
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Declaration

I herewith declare that:

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Name: Sanne Scheffers

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Place: Leeuwarden – The Netherlands

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Abstract

This study is written to explore which in-flight service components influence the passenger satisfaction according to passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam. Since very few studies have been conducted to understand the influence of hospitality in the airline industry, it is useful for full-service airlines to know which in-flight service components influences passenger satisfaction. This study gives a clear picture of the overall in-flight service on-board on long-distance flights. This study has integrated nine in-flight service components, which are heart-warming, heart-assuring, heart-soothing, courtesy, appreciation, socializing, comfort, comfortable seats and legroom, and food and beverages. The findings of this study showed that only the comfort related in-flight service components actually influence passenger satisfaction, and reflect that passengers consider their comfort as the most important component during their flight. For full-service airlines it is important to improve the comfort on-board the aircraft, since this will lead to more satisfied passengers.

Key words: Passenger satisfaction, In-flight service components, Full-service airline, Airline hospitality, Hospitableness

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1. Introduction

1.1 Research background

The success of any organization depends on customer satisfaction. Customer satisfaction is the feeling of pleasure or disappointment when a customer compares a product's perceived performance with his or her prior expectations (Oliver, 1981). Customer satisfaction is influenced by specific product or service features, perceptions of product and service quality, personal factors and situational factors, which leads to a positive and favourable word-of-mouth and is a source of indirect marketing for brand building (Wilson, Zeithaml, Bitner, & Gremler, 2016; Park, Robertson, & Wu, 2004). Therefore, measuring customer satisfaction is a key element for business as it can significantly contribute to improve service quality.

In the full-service airline industry passengers tend to evaluate airlines based on their level of satisfaction with the in-flight service (Park et al., 2004). Passengers form expectations that turn into satisfaction based on their overall assessment of service performance and expectations of airlines. According to Nameghi and Ariffin (2013) hospitableness of cabin crew performance is one of the most important factors in order to create passenger satisfaction. Hospitableness is a crucial dimension in the creation of memorable service experiences and customer loyalty, and influences consumer satisfaction. Superior quality of hospitableness offered by service organizations increases satisfaction with the core service offering as well as developing a strong bond between the organization and guests (Lovelock, Wirtz, Keh, & Lu, 2002). For full-service airline companies it is therefore necessary to measure hospitableness from a passenger perspective to gain competitive advantage in today's highly competitive environments (Ariffin, Nameghi, & Zakaria, 2013).

According to Tasci and Semrad (2016) hospitableness is defined as the positive attitudinal, behavioural, and personality characteristics of the hosts that result in positive emotional responses in guest feelings welcomed, wanted, cared for, safe, and important. These characteristics of the hosts form a three-dimensional structure of hospitableness including heart-warming, heart-assuring and heart-soothing factors. These factors represent the extent to which hosts' hospitable behaviour is motivated

by and expresses in a genuine desire to please and care for others, and the extent to which hosts are understanding and take care of guests' needs (Lashley, 2008; Telfer, 2016). Hospitableness is the overarching layer and the differentiating aspect of hospitality and is expressed in human interaction between hosts and guests (Tasci & Semrad, 2016). It is what makes or breaks the entire customer experience about a company's products and services. It is the most prominent, dynamic, and influential component of hospitality, marking the delivery of tangible and intangible components of hospitality to guests.

Another important component to create passenger satisfaction is airline hospitality. Full service airlines offer their passengers in-flight service by the cabin crew. According to Ariffin and Nameghi (2013) there are four dimensions of airline hospitality from the perspective of cabin crew's performance, namely courtesy, appreciation, socializing and comfort. Courtesy involves interaction with the passengers in a polite manner, and appreciation is about thankfulness and gratitude towards the passengers. Socializing consists of small talk and spending time with the passengers, and comfort involves to what extent the passengers are able to get good rest on-board the aircraft. Passengers use the cabin crew's hosting quality and in-flight hospitality as a point to distinguishing airline services (Ahn, Kim, & Hyun, 2015).

In order to achieve competitive advantage in the airline industry, the in-flight experience should be increased. The in-flight experience itself is something exceptional for the passenger and can affect their choice of airline, emotions, feeling, satisfaction and loyalty with the airline services (Ahn et al., 2015; Archana & Subha, 2012). The host-guest interactional relationship is an important element of the in-flight experience. Unsatisfied in-flight experience such as inhospitableness of cabin crew's performance may lead the passengers to switch to a different airline for their next flight (Archana & Subha, 2012). As a result, passenger's loyalty towards the airline's brand will decrease and the airline will lose customers. Therefore, the focus of airline companies is no longer on what they deliver but on how they deliver their services. The hospitableness element of the human component is what makes the service special and leads to customer satisfaction. Satisfying passengers and translating this

satisfaction into behavioural commitment is key for airline companies to remain competitive.

1.2 Purpose of the study

Very few studies have been conducted to understand the influence of hospitality in the airline industry (Nameghi, 2013). This study focuses on the in-flight hospitality on long-distance flights within full-service airlines. In this study, full-service airlines are defined as airlines which offer value through superior services and are driven by professionalism and superior service quality. A long-distance flight is defined as a flight that lasts six hours or more. The main purpose of this study is to examine to what extent the in-flight service components influences the passenger satisfaction. More specifically, to explore which in-flight service components influences the passenger satisfaction according to passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam.

1.3 Overview of the thesis

This study consists of two main parts, which are theoretical review and empirical research. After this introduction chapter, the second chapter presents previous literature related to the theories of customer satisfaction, customer satisfaction in the airline industry, hospitableness and airline hospitality. Together with the first chapter, this chapter forms the theoretical review part of the study.

In the third chapter the problem definition is described. Furthermore, the conceptual model of this study, including the problem statement and proposed hypothesis are presented. The fourth chapter describes the methodology section, including a description of the research design, selected instruments and sampling. In addition, this chapter explains the data collection procedure and the data analysis methods which will be used to analyse the data. Chapter five presents the results of the study, where the empirical data will be presented in tables. Chapter six presents the discussion section based on the interpretations of the empirical findings. The last chapter contains the conclusions and recommendations for the industry and future research. Chapter three to seven form together the empirical research part of the study.

2. Literature review

In this chapter, previous literature related to the theories of customer satisfaction, customer satisfaction in the airline industry, hospitableness and airline hospitality are presented. The concepts are defined and the sub-dimensions of these concepts are described.

2.1 Customer satisfaction

Customer satisfaction is essential for corporate survival in the service industry. Oliver (1981) defined customer satisfaction as the feeling of pleasure or disappointment when a customer compares a product's perceived performance with his or her expectations. This is further supported by Churchill and Surprenant (1982), who defined customer satisfaction as an output as resulting from purchase or consumption from the customers comparison between the benefits and costs together with the expected consequences. In addition, Fornell, Johnson, Anderson, Cha and Bryant (1996) defined customer satisfaction as an overall evaluation based on the total purchase and consumption experience with the good or service over time.

The survival and financial performance of service organizations are directly dependent on achieving higher customer satisfaction than their competitors (Deng, Kuo, & Chen, 2008). In order to achieve customer satisfaction, service organizations must provide services that meet specific levels of perceived value from customers. Clemes, Gan, Kao and Choong (2008) stated service quality is the basis for customer satisfaction. Companies should deliver a high standard of service quality to achieve a high level of customer satisfaction. This is confirmed by Zwarc (2005) who noted that service quality increases customer satisfaction, which leads to customer loyalty and increased corporate profits. Furthermore, Tsafarakis, Kokotas and Pantouvakis (2018) stated there is a strong link between customer satisfaction, customer retention and profitability. However, Wilson et al. (2016) found that customer satisfaction is influenced by multiple factors, namely specific product or service features, perceptions of product and service quality, personal factors and situational factors.

2.2 Measuring customer satisfaction

Service quality is the measurement of the results from comparing the perception about received services with prior expectations of what those services should provide. Service quality measurement can be considered as important in order to understand how it can relate to the effectiveness of the service provided and also lead to customer satisfaction. In order to measure service quality, Parasuraman, Zeithaml and Berry (1985) developed the SERVQUAL model. The model proposed that service quality is measured by five dimensions: reliability, assurance, tangibles, empathy and responsiveness. Reliability is mainly associated with the service outcome, while the other four dimensions are associated with the delivery of the service (Parasuraman et al., 1985).

The first dimension reliability can be defined as the ability to provide the promised service dependably and accurately (Parasuraman et al., 1985). In order to satisfy the customers, companies need to provide accurate services, which can be delivered on time in well manner and without errors. In order to be reliable, companies have to deliver what they promise (Vaz & Mansori, 2013).

The second dimension is assurance, which entails the knowledge and courtesy of employees and their ability to inspire trust and confidence (Parasuraman et al., 1985). Courtesy comprises politeness, respect, consideration and friendliness. The third dimension of the SERVQUAL model is tangibles, which stands for the appearance of physical facilities, equipment, personnel and communication materials (Parasuraman et al., 1985). This dimension mainly emphasizes the condition of the physical surroundings.

The dimension empathy can be defined as caring, individualized attention the employees provide to its customers, and includes the organization's representatives, communication and understanding of their customers (Parasuraman et al., 1985).

The level of a company's empathy is determined by the degree of personalized service offered to their customers (Donnelly, Wisniewski, Dalrymple, & Curry, 1995).

The last dimension is responsiveness, which includes the willingness to help customers and provide prompt service (Parasuraman et al., 1985). A company's responsiveness is evaluated by customers by assessing how much time the employees need to meet the customer requests, questions or complaints. In order to

keep the customers trustworthiness, the company should be able to recover the problems quickly (Donnelly et al., 1995).

2.3 Customer satisfaction in the airline industry

2.3.1 Hospitableness Scale

Passengers tend to evaluate airlines based on their level of satisfaction with the in-flight service (Park et al., 2004). Within the full-service airline industry, passengers form expectations that turn into satisfaction based on their overall assessment of service performance and expectations of airlines. According to Nameghi and Ariffin (2013) hospitableness of cabin crew performance is one of the most important factors in order to create passenger satisfaction. This is supported by Chen (2008), who showed that hospitality from the perspective of cabin crew performance is the most important factor in creating superior service quality, and highlighted the importance of the cabin crew and flight facilities for passenger satisfaction. Furthermore, the study of Mohamed and Zainol (2017) stated that cabin crew's hospitable characteristics and behaviour during the in-flight service delivery will form positive attitudes towards airlines among full-service airline passengers.

According to Tasci and Semrad (2016) hospitableness is defined as the positive attitudinal, behavioural, and personality characteristics of the hosts that result in positive emotional responses in guest feelings welcomed, wanted, cared for, safe, and important. In order to measure the individual hospitableness of employees, Tasci and Semrad (2016) developed a Hospitableness Scale for the tourism and hospitality industry. The Hospitableness Scale consists of three dimensions of hospitableness. These dimensions were termed as the 3-Hs of hospitableness consisting of heart-warming, heart-assuring, and heart-soothing factors.

2.3.1.1 Heart-warming factors

The heart-warming factor is the most important factor of hospitableness and includes the positive host characteristics and attitudes, like welcoming, courteous, respectful, and kind. These characteristics may result in feeling wanted, which evokes a positive emotional response from guests. This is confirmed by Ariffin and Maghzi (2012), who stated that warm welcoming is the most apparent aspect of hospitality. This is further

supported by Lashley (2008), who stated that the quality of the interactions between contact staffs and guests significantly contribute to the development of the emotional value. The quality of the emotions generated from these experiences in the end will lead to guest satisfaction. Furthermore, the study of Kim, Kim and Hyun (2016) found out that a host employee's politeness, helpfulness and warmth will encourage the guest's satisfaction.

2.3.1.2 Heart-assuring factors

The heart-assuring factor includes host characteristics and attitudes promoting a feeling of safety and security in guests, like trustworthy, honest, and reliable. This is supported by Loureiro and Fialho (2017), who stated that the cabin crew's professionalism and their expression of interest in passengers will affect passengers' perceptions, where the feeling of safety will enhance the overall satisfaction and confidence in the airline. This is further supported by Ali (2015), who found out that providing individual attention positively contributes to customer satisfaction. Moreover, the study of Mohamed and Zainol (2017) stated that passengers recognized by the cabin crew, being treated individually with more attention and care, or being respected by the cabin crew will perceive their flight experience as being fun and pleasant. The study of Ariffin and Maghzi (2012) revealed that guest's emotional state including safety and security is an important element of hospitality specifically in the context of hotel services.

2.3.1.3 Heart-soothing factors

The heart-soothing factor includes the general host characteristics and attitudes that create comforting and calming feelings in guests, like generous, sociable, and open. Teng and Chang (2013) and Ariffin and Maghzi (2012) revealed in their studies that appropriate hosting quality can form the guest's psychological comfort through host-guest interactions. Guests who perceive host employees who show feelings of generosity, authentic smiles and friendliness will consider their service experience as being joyful, honoured and memorable. Moreover, Saha (2009) stated that passengers' perception of the way they are treated by the cabin crew is an important factor which contributes to passenger's perceived in-flight service quality.

The hospitableness scale captures the extent to which hosts' hospitable behaviour is motivated and expresses in a genuine desire to please and take care for others and the extent to which hosts' understand and provide the guests' needs (Lashley, 2008; Telfer, 2016).

2.3.2 Airline hospitality

According to Ariffin and Nameghi (2013) there are four dimensions of full-service airline hospitality from the perspective of cabin crew's performance, namely courtesy, appreciation, socializing and comfort.

2.3.2.1 *Courtesy*

Courtesy is found the most important dimension and the core of airline hospitality. This is supported by Manjrekar, Kamathn and Bhonsale (2008) who define hospitality as entertaining guests with courtesy and warmth. This is also confirmed by Telfer (2000), who stated hospitality is about the "warmth" of the greeting and smiling, and the best efforts shown to help guests. Furthermore, Gustafsson, Edvardsson, Nickson, Warhurst and Dutton (2005) and Parasuraman et al. (1985) stated for hospitality organisations, courtesy of the front-line staff is one of the most important determinant of service quality. In the context of airline services, the cabin crew is expected to interact with passengers in a polite manner and with full respect. This is confirmed by the study of Wattanacharoensil and Yoopetch (2012), who revealed that being polite and respectful are the most important components to represent successful cabin crews.

In addition, when interacting with passengers, the cabin crew is expected to maintain eye contact with natural smiling faces (Ariffin & Nameghi, 2013). A cabin crew's smile has become an expected part of the in-flight experience (Murphy, 2001). This is supported by Wattanacharoensil and Yoopetch (2012), who stated that cabin crew's smiles and greetings create a positive influence on passengers. Furthermore, Mohamed and Zainol (2017) revealed in their study that passengers who experience that the cabin crew is making eye contact when communicating with them will perceive their flight experience with the airline as being comfortable.

2.3.2.2 Appreciation

The second most important dimension of airline hospitality is appreciation, which means some blend of thankfulness and gratitude towards the passengers. It refers to the appreciation of the passengers and their willingness to fly with the airlines. The cabin crew is expected to thank the passengers for being on-board, wish them a friendly goodbye, and also invite them to fly again with the airline in the near future (Ariffin & Nameghi, 2013). This is supported by Mohamed and Zainol (2017), who stated that passengers who perceive that the cabin crew wish them a friendly goodbye when leaving the aircraft will perceive their flight experience with the airline as pleasant and enjoyable.

2.3.2.3 Socialising

The third dimension is socialising, which means to associate or mingle sociably with other people. The cabin crew is expected to spend time with the passengers in the form of small talk. This is supported by Sreenivasan, Sian Lee and Goh (2012), who stated that the socialisation of the cabin crew was the most important interactional service being discussed by airline passengers. Furthermore, Babbar and Koufteros (2008) found that personal touch (personalisation) does substantially affect the satisfaction level of passengers on the overall service offered by an airline. Moreover, the study of Mohamed and Zainol (2017) revealed that passengers who perceive that the cabin crew is hospitable by spending time with them, will eventually perceive their flight experience as pleasant.

2.3.2.4 Comfort

The fourth dimension of airline hospitality is comfort, which is more focused on the tangible component of the airline service and is defined as a subjective experience that involves physical and physiological harmony between a person and their environment (De Looze, Kuijt-Evers, & Van Dieen, 2003). This is confirmed by Richards, Jacobson and Kuhlthau (1978), who found out that passenger's comfort could be explained in relation to satisfaction and the willingness to fly again with the same type of aircraft. This is further supported by Dabholkar, Shepherd and Thorpe (2000), who demonstrated the important role played by comfort, considered to be a positive emotion in the evaluation of service quality. The greater the level of comfort,

the more hospitable the service as perceived by airline passengers. This is supported by Paswan and Ganesh (2005), who found out customers displaying high levels of comfort tend to be more satisfied with the service. Furthermore, Forgas, Moliner, Sànchez and Palau (2010) found that comfort can lead to passenger satisfaction and loyalty to an airline.

The cabin crew is expected to ensure that the passengers are able to get good rest on-board the aircraft and that the passengers are physically and emotionally comfortable while flying with them. This is supported by Ahmadpour, Robert and Lindgaard (2014), who stated that the overall passenger's comfort level is highly influenced by the service of the cabin crew, temperature and noise on-board the aircraft. Moreover, the study of Fisk, Patricio, Rosenbaum and Massiah (2011) found that a favourable perception of the in-flight temperature will develop a positive overall evaluation of the in-flight experience. However, Park, Lee and Nicolau (2020) stated that comfortable in-flight temperature may not generate passenger satisfaction since they take this factor for granted. Nevertheless, failing air-conditioning during a flight will extremely dissatisfy passengers. In the context of full-service airlines, O'Connell and Williams (2005) explained comfort is one of the main reasons why passengers choose a full-service airline. This is supported by the study of Tan, Chen and Rauterberg (2010), who stated that comfort is the main contributor to passenger's acceptance of transportation systems.

However, the study of Ahmadpour et al. (2014) showed that only on short distance flights passenger satisfaction were significant to the overall passenger comfort. Their study showed that there was no significant relationship between passenger satisfaction and the overall passenger comfort on long distance flights. Moreover, Lashley (2008) stated that it is not the tangible elements of the service which generates customer satisfaction, but it is the quality of the service treatment by the contact staffs that contributes to customer satisfaction. This is confirmed by Lashley and Morrison (2013), who found that the host-guest interpersonal relationship is the core differentiating factor between hospitality and service. Although guest's emotions are partially influenced by tangible elements of the service offerings, hospitality emphasizes on the emotional dimensions arising from the interpersonal relationship between hosts and guests. Nevertheless, the tangible elements of the service

offerings should not be ignored in efforts to achieve high guest satisfaction. Pizam (2007) stated that the social interactions of the staff with guests, together with improved guest amenities will increase the guest's mental and physical well-being. In addition, Ariffin and Aziz (2012) found that merging the tangible with the intangible elements of service offerings will ensure a memorable service experience for the guests.

2.3.3 Key drivers that influences in-flight passenger satisfaction

Sezgen, Mason and Mayer (2019) found that staff attitudes are very important to establish satisfaction with an airline and identified four key drivers that influences in-flight passenger satisfaction within full-service airlines.

2.3.3.1 *Friendly-helpful staff*

The first factor is friendly-helpful staff, which is linked with the greatness of service. Staff attitudes are one of the most important components for full-service airline passengers to establish satisfaction with the airline. This is supported by Forgas et al. (2010), who found that professionalism of the cabin crew is the key satisfaction attribute for full-service airlines. Moreover, Safwan, Hunjra, Ashfaq and Naqvi (2012) stated that customer satisfaction is positively correlated with cabin crew performance, which is linked with their care, personal approach, and personal attention towards the passengers. This is further confirmed by the study of Ban and Kim (2019), who revealed that staff positively influences the customer satisfaction of the airline. Furthermore, the study of Ali (2015) stated that there is a significant relationship between friendly and helpful staff and customer satisfaction.

2.3.3.2 *Comfortable seats and legroom*

The second factor is comfortable seats and legroom, which is linked with the comfort of seats and the sufficiency of legroom. This is confirmed by Koklic, Kukar-Kinney and Vegelj (2017), who found a strong positive relationship between customer satisfaction and quality of staff and the airline tangibles seat comfort and legroom. The study of Richards et al. (1978) found that comfortable seats and legroom correlate highly with passenger satisfaction. Their study revealed that legroom, seat firmness, seat width and seat shape were the most important factors contributing to

the overall passenger comfort. This is supported by Vink, Bazley, Kamp and Blok (2012), who demonstrated high correlations between legroom and seat and comfort. In addition, their study highlighted a correlation between comfort and satisfaction. Besides, the study of Ban and Kim (2019) found that seat comfort is positively related to customer satisfaction of airlines.

Furthermore, the studies of Alamdari (1999) and IATA (2013) found out that personal in-flight entertainment contributes greatly to passengers' satisfaction with airline services and demonstrated that watching in-flight entertainment and sleeping are the most important activities during long-distance flights. This is confirmed by Park et al. (2020), who stated that in-flight entertainment affects the passenger satisfaction. The study of Saha (2009) found that the functionality of the electrical devices provided in the seating area and in-flight entertainment are critical components for a favourable evaluation of the in-flight experience.

2.3.3.3 Food and beverages

Another key driver that satisfy passengers is food and beverages, which consist of the availability of different food options. This is supported by Ali (2015) and Barsky and Labagh (1992), who stated food and beverages as a significant attribute of customer satisfaction. The studies of Ban and Kim (2019) and Park et al. (2020) also supported this, who found that food and beverages had impact on customer satisfaction of airlines. Furthermore, Zahari, Salleh, Kamaruddin and Kutut (2011) found in their study that in-flight meals predicts passengers' level of satisfaction and influence passengers' re-flying intention. In addition, the studies of An & Noh (2009) and Muturi, Sagwe and Namukasa (2013) found that food quality is an important attribute for full-service airline passengers in order to generate satisfaction. This is also supported by the study of Han and Hyun (2017), who revealed that food and beverages quality has a significant effect on the in-flight service performance from the passengers' perspective. However, the study of Kurtulmuşoğlu, Can and Tolon (2016) revealed that the variety and quality of the food and beverages offered on-board is not considered by passengers when determining their preferred airline. Nevertheless, King (2001) found out that some passengers switch to more expensive airlines only because of their higher quality food.

2.3.3.4 In-flight service

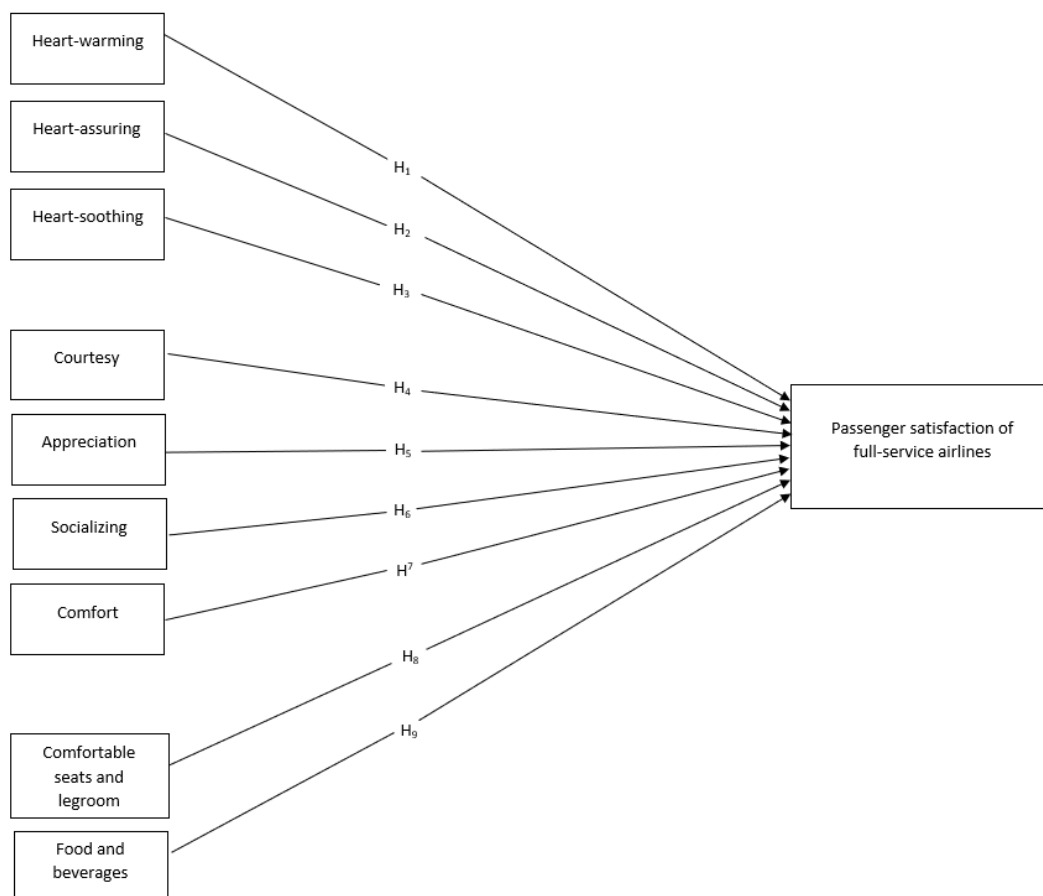
The last factor is in-flight service, which corresponds to the overall in-flight service assessment to passengers. This is supported by Archana and Subha (2012) and Ahn et al. (2015), who found out that the in-flight experience is something exceptional for the passenger and can affect the satisfaction with the airline services. The studies of Ng, Sambasivan and Zubaidah (2011) and Muturi et al. (2013) confirmed this and found out that in-flight services offered by the cabin crew affects passenger satisfaction. Cabin crew's service performance can enhance passengers' overall flight experience. Furthermore, Han, Hyun and Kim (2014) stated that excellence service performance significantly influences passenger's positive evaluation of their flight experience. However, Rajaguru (2016) stated that the balance between value for money and service quality attributes is the most important for full-service airline passengers. This is supported by the study of Etemad-Sajadi, Way and Bohrer (2016), who have indicated that passenger's perceived in-flight service quality positively affects passenger satisfaction. Furthermore, Nadiri, Hussain, Ekiz and Erdoğan (2008) found out that passenger perceived service quality has a positive effect on passenger satisfaction and loyalty. Park et al. (2004) and Hussain, Al Nasser and Hussain (2015) confirmed that there is a positive relationship between airline customer satisfaction and brand loyalty. Forgas et al. (2010) found that satisfaction and trust are the main drivers of passenger loyalty for full-service airlines.

3. Issues for Investigation

3.1 Conceptual model

In order to identify the underlying dimensions of passenger satisfaction within full-service airlines as well to develop the instrument to measure the construct, a conceptual model has been made. The independent variables of the conceptual model are based on two concepts. First, the Hospitableness Scale developed by Tasci and Semrad (2016), which consist of three dimensions of hospitableness. The second concept consist of four dimensions of airline hospitality of cabin crew's performance, developed by Ariffin and Nameghi (2013). In addition to the independent variables, there are two covariates in the conceptual model. These covariates are based on the key drivers that influences in-flight passenger satisfaction of full-service airlines, developed by Sezgen et al. (2019). The conceptual model is shown in figure 1.

Figure 1: Conceptual model 'Passenger satisfaction of full-service airlines'



3.2 Problem statement and hypotheses

Based on the above conceptual model, a problem statement has been formulated. The problem statement of the study is:

To what extent do the in-flight service components influence passenger satisfaction of full-service airlines?

In order to fully answer the problem statement, nine hypotheses are proposed, which are shown below.

H₁: Heart-warming characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

H₂: Heart-assuring characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

H₃: Heart-soothing characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

H₄: Courtesy of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

H₅: Appreciation of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

H₆: Socialisation of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

H₇: The level of comfort positively influences passenger satisfaction of full-service airlines.

H₈: Comfortable seats and legroom have a positive impact on passenger satisfaction of full-service airlines.

H₉: The availability of a wide range of food and beverages choices on-board has a positive impact on passenger satisfaction of full-service airlines.

4. Methodology

This chapter will present the method which will be used in this study. First, the research design, selected instruments and sampling will be described. Thereafter, the data collection procedure and the data analysis methods were used to analyse the data will be explained. At the end of this chapter various ethical issues and limitations of the research design will be described.

4.1 General Research Design

In general there are two research approaches, which are quantitative and qualitative research. According to Bell, Bryman and Harley (2019) quantitative research covers approaches involving the collection of numerical data which attempt to measure or count social phenomena and the relationships between them. Within quantitative research measurements are applied, which does not occur in qualitative research. Qualitative research usually emphasizes words rather than numbers in the collection of data and focuses on gaining an in-depth understanding of underlying reasons, opinions, and motivations (Bell et al., 2019). Since the purpose of this study is to measure to what extent the in-flight service components influences the passenger satisfaction, a quantitative research approach has been used. Within this approach measurements are applied which focuses on relationships between data.

In this study, a quantitative research approach was used in the form of a correlational study by measuring the relationship of two variables. The strength of the relationship between the in-flight service components and passenger satisfaction of full-service airlines has been measured. Of all seven independent variables and two covariates, it has been determined to what extent they are related to the passenger satisfaction. Thereafter, the extent to which the in-flight service components influence the passenger satisfaction was determined. A correlational study has been conducted because it can be used to determine whether there is a relationship between two or more variables in a single study. The correlation coefficient provides a measure of degree and direction of relationship (Bell et al., 2019).

4.2 Instrumentation

4.2.1 Instrument

In this study, the strength of the relationship between the in-flight service components and passenger satisfaction of full-service airlines has been measured. The data which was needed to measure this is the passenger satisfaction with the in-flight service components and the overall passenger satisfaction with the full-service airline. It has been determined to what extent the in-flight service components are related to the passenger satisfaction and to which extent they influence the passenger satisfaction.

The instrument used in the study is a self-completion questionnaire in the form of a web-based survey. In order to measure the passenger satisfaction with the in-flight service components and the overall passenger satisfaction, a 5-point Likert scale was used, based on closed questions with a horizontal format. In the questionnaire respondents were presented with statements that formed the measure of the passenger satisfaction with the in-flight service components. They were asked to indicate their level of agreement or disagreement based on their experience of the last time they flew with a full-service airline, with each statement by indicating whether they: 1. Strongly disagree, 2. Disagree, 3. Neutral, 4. Agree, or 5. Strongly agree.

Making use of a self-completion questionnaire is quick and cheap to administer and is convenient for the respondents (Bell et al., 2019). In addition, the relationship between the in-flight service components and passenger satisfaction can easily be measured by making use of the 5-point Likert scale within the questionnaire. The score will show to what extent the passengers agree or disagree with the statements, and the score of the last statement will show the passenger's overall satisfaction with the full-service airline. Making use of close questions will turn the processing of data for analysis into a fairly simple task, because they can be pre-coded (Bell et al., 2019).

Within the questionnaire, four in-flight service concepts were covered, namely customer satisfaction, passenger satisfaction, hospitableness and airline hospitality.

The definitions of these concepts are described in a research matrix, followed by examples of indicators which will be used in the questionnaire. The research matrix is shown in table 1 below. Besides the four in-flight service concepts, background information from the participants were gathered in the questionnaire. Respondents were asked how often they fly with a full-service airline and what their travel purpose was the last time they flew with a full-service airline. Besides, respondents were asked who their company was during this flight, and in which seat class they stayed. In addition, their gender, age and continent of origin were asked in order to measure if this has any effect on the hypotheses.

4.2.2 Reliability and validity

In order to evaluate the quality of the study, reliability and validity are the most prominent criteria. Reliability refers to the consistency of a measure of a concept and involves three prominent factors, namely stability, internal reliability and inter-rater reliability (Bell et al., 2019). In order to measure the stability of the in-flight service concept measures, the Pearson's r test was performed. Using the correlation coefficient, the statistical significance of the relationship between the in-flight service components and the passenger satisfaction were measured. In order to measure the internal reliability, Cronbach's alpha was used to test whether each in-flight service component is indeed related to the overall passenger satisfaction or whether they lack coherence (Bell et al., 2019). The inter-rater reliability has been tested by making use of the intraclass correlation coefficient by measuring the level of agreement between rates of participants (Gwet, 2014).

Validity refers to the issue of whether or not an indicator or a set of indicators that is devised to gauge a concept really measures that concept (Bell et al., 2019). In order to ensure the internal validity of the study, a pilot study was conducted to investigate the equivalence of concepts in both the English and Dutch version of the questionnaire. In addition, the pilot study investigated potential misinterpretation due to different ways of thinking and whether the questions are formulated appropriately (Van Teijlingen & Hundley, 2001). In order to ensure the external validity, the participants were selected randomly causing each unit of the population has an equal probability of being included in the sample. The sample should represent the target

population and eliminate sampling bias (Dawson, 2019). To ensure face validity, the measures from the conceptual model are based on previous studies of researchers with expertise in that field.

Table 1: Research matrix

Concept	Definition	Indicator	Source
Customer satisfaction	The feeling of pleasure or disappointment when a customer compares a product's perceived performance with his or her expectations	- Overall evaluation of the full-service airline - Service quality of the full-service airline - Personal factors (purpose of travel, frequency of flying)	Oliver (1981), Clemes et al. (2008), Wilson et al. (2016), Fornell et al. (1996)
Passenger satisfaction	The feeling of pleasure or disappointment when the passenger compares the perceived in-flight service with his or her expectations	- Friendly-helpful staff - Comfortable seats and legroom - Food and beverages - In-flight service	Park et al. (2004), Sezgen et al. (2019)
Comfortable seats	Seats which make the passenger feel physically relaxed when they use it	- A comfortable seat during the flight - Availability of a neck pillow and blanket - Availability to watch movies on a screen in the front seat	Sezgen et al. (2019), Koklic et al. (2017)

Legroom	The amount of space available for your legs when you are sitting behind another seat	- Sufficient legroom during the flight	Cambridge Dictionary (2020), Sezgen et al. (2019), Koklic et al. (2017)
Food and beverages	Fresh, prepared foods as well as packaged foods, and alcoholic and non-alcoholic drinks	- Availability of a range of different food and beverages options	Sezgen et al. (2019), An and Noh (2009)
Hospitableness	The positive attitudinal, behavioural, and personality characteristics of the hosts that result in positive emotional responses in guest feelings welcomed, wanted, cared for, safe, and important	- Heart-warming factors - Heart-assuring factors - Heart-soothing factors	Tasci and Semrad (2016)
Heart-warming factors	The positive host characteristics and attitudes all of which may result in feeling wanted, eliciting a positive emotional response from guests	- Cabin crew's warm welcoming to all passengers - Cabin crew's interaction with passengers in a polite manner - Cabin crew's interaction with passengers with full respect	Tasci and Semrad (2016), Gallarza, Saura and Garcia (2002), Wilkins, Merrilees and Herington (2007), Gallarza and Saura (2006)

		- Cabin crew's constantly friendliness towards the passengers	
Heart-assuring factors	Host characteristics and attitudes promoting a feeling of safety and security in guests	- Cabin crew's effort to provide personal attention to the passengers - Cabin crew's effort to response promptly to the passengers' requests - Cabin crew's effort to ensure the safety of the passengers during the flight	Tasci and Semrad (2016), Kim and Lee (2011), Forgas et al. (2010), Mohsin and Lockyer (2010), Johanson and Woods (2008), Wilkins et al. (2007)
Heart-soothing factors	General host characteristics and attitudes that create comforting and calming feelings in guests	- Cabin crew's offering of any kind of assistance to the passengers - Cabin crew's engagement in "small talk" with the passengers - Cabin crew's ensuring that passengers are comfortable during sitting	Tasci and Semrad (2016), Johanson and Woods (2008), Mohsin and Lockyer (2010), Gilbert and Wong (2003), Barsky and Nash (2002), O'Connell and Williams (2005)

Airline hospitality	Hospitality from the perspective of cabin crews' performance	- Courtesy - Appreciation - Socialising - Comfort	Ariffin and Nameghi (2013)
Courtesy	The showing of politeness in one's attitude and behaviour towards others	- Cabin crew's politeness to the passengers - Cabin crew's full respect to the passengers - Cabin crew's eye contact with the passengers during conversation - Cabin crew's natural smiling faces	Ariffin and Nameghi (2013), Gallarza et al. (2002), Wilkins et al. (2007), Gallarza and Saura (2006), Johanson and Woods (2008)
Appreciation	Some blend of thankfulness, admiration, approval, and gratitude	- Cabin crew's offering of some kind of gifts or token of appreciation to the passengers - Cabin crew's friendly goodbye wishes to the passengers	Ariffin and Nameghi (2013), Barksy and Nash (2002), Johanson and Woods (2008)

		- Cabin crew's thankfulness for flying with the airline - Cabin crew's invitation to the passengers to fly with the airline again in the future	
Socialising	To associate or mingle sociably with others	- Cabin crew's engagement in "small talk" with the passengers - Cabin crew's interaction with passengers in a polite manner - Cabin crew's effort to spend time with the passengers	Ariffin and Nameghi (2013), Johanson and Woods (2008), Mohsin and Lockyer (2010), Kim and Lee (2011)
Comfort	A state of physical and emotional ease and freedom from pain or constraint	- Cabin crew's effort to ensure that the passengers are able to get good rest of sleep - Cabin crew's effort to ensure that the in-flight temperature is comfortable to the passengers - Cabin crew's effort to ensure that passengers are comfortable while	Ariffin and Nameghi (2013), Kim and Moon (2009), Wu and Liang (2009), Hyun, Kim and Lee (2011), Barsky and Nash (2002), O'Connell and Williams (2005)

		sitting	
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4.3 Sample

Bell et al. (2019) defined the research population as a group of individuals having one or more characteristics of interest. According to Romano (2004) there are two types of populations, which are target population and accessible population. The target population includes a group of individuals or events to which researchers wish to generalize the results of their study. In this study, the target population are passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam. The accessible population is a subset of the target population that is accessible to a researcher because of geographic, temporal, or cultural characteristics (Romano, 2004). The accessible population in this study are passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam, and currently reside in the Netherlands. Therefore, the sampling unit is a passenger who have taken a long-distance flight of a full-service airline from Schiphol Airport and currently reside in the Netherlands. Since many international people reside in the Netherlands, it can actually present the subset of the target population.

The non-random sampling method which has been used in this study is snowball sampling. The sampling method is one of the factors influencing the sampling error. The greater the sampling error, the less accurate the estimation of the population values (Grossnickle, 2001). Therefore, random sampling is always preferable to non-random sampling. However, random samples are not always available when the population being researched is difficult to reach. Because of the limited access and physical contact restrictions due to the COVID-19 breakout, snowball sampling was the most applicable approach, since the method is common used in populations that are difficult to access due to their closed nature (Breweton & Millward, 2001). Since the amount of the sampling population is unknown, the Cochran formula was used in order to calculate the sample size of this study (Sarmah & Hazarika, 2012). Assuming the maximum variability, which is equal to 50% and taking 95% confidence level with a margin of error of 7%, the calculation for the required sample size is shown below.

$$n_0 = \frac{z^2 pq}{e^2} = \frac{(1,96)^2(0,5)(0,5)}{(0,07)^2} = 137,2$$

According to the formula, the required sample size will be 137 participants. Because of a 20% probability of non-response, the sample size of this study is 165 participants.

4.4 Data collection procedure

In this study the data has been collected by a self-completion questionnaire in the form of an online survey. The online survey was distributed in two ways in order to generate as many respondents as possible. First, the online survey was shared to acquaintances from the researcher via social media platforms WhatsApp and Facebook. The researcher shared the online survey with her acquaintances who once have taken a long-distance flight of a full-service airline from Schiphol Airport and currently reside in the Netherlands. In addition, the respondents were asked to refer other qualified potential respondents that belong to the research population. Second, the online survey was shared on the online platform SurveySwap, which is a platform where students find survey participants for free by filling in each other's survey. The tool made it possible to determine the target group, based on the country of residence and other factors. In order to make sure that all respondents were within the study population, two extra questions were added in the survey. These two questions were based on the duration of the flight in hours and the airline company, in order to make sure the respondents actually complete the survey based on their last experience on a long-distance flight with a full-service airline. The data has been collected in April and May 2020 and was processed anonymously.

As soon as sufficient surveys were completed, the collected data was processed in SPSS. The statistical significance of the relationship between the in-flight components and the passenger satisfaction was measured by Pearson's r test using the correlation coefficient. In order to test the internal reliability, Cronbach's alpha was used (Bell et al., 2019).

4.5 Data analysis method

After receiving 173 valid returned result, the numerical data has been analysed by making use of Statistical Package for the Social Science (SPSS), which is possibly the most widely used computer software for the analysis of quantitative data (Bell et al., 2019). The analysis process consists of five steps which are described below.

4.5.1 Descriptive analysis

First, an univariate analysis was performed by using the descriptive statistics of SPSS for analysing the frequency of each factor and generating the mean value and standard deviation of all scale items (Bell et al., 2019). Descriptive statistics are a useful way to summarise data and provide a description of the sample (Marshall & Jonker, 2010).

In this study, the descriptive analysis was applied by describing the demographic information of the respondents. First, the sample profile has been described by the general characteristics of the study sample. The amount of male and female participants were described, followed by the participants' continent of origin and age category. Second, the respondents' background concerning full-service airlines has been summarized. The participants' frequency of flying and purpose of travel were described, followed by the participants' companions and seat class.

In addition, a descriptive analysis of the dimensions of the conceptual model of this study has been performed. Of both the seven independent variables and two covariates (Heart-warming, Heart-assuring, Heart-soothing, Courtesy, Appreciation, Socializing, Comfort, Comfortable seats and legroom, and Food and beverages) and the dependent variable (Passenger satisfaction of full-service airlines) the rating of each variable in general was described by calculating the N-number of people, mean and standard deviation values.

4.5.2 Reliability analysis

Second, SPSS's reliability analysis was performed using Cronbach's alpha in order to test whether each in-flight service component is indeed related to the overall passenger satisfaction or whether they lack coherence. Cronbach's alpha is the most

common measure of internal consistency when there are multiple Likert questions in a survey that form a scale, and determining if the scale is reliable by calculating the average of all possible split-half reliability coefficients (Warrens, 2015). The alpha coefficient (α) takes values between 1 and 0. An alpha coefficient of 1 indicates perfect internal reliability, while an alpha coefficient of 0 indicates no internal reliability. It is usually accepted that an alpha coefficient of 0.8 and above implies an acceptable level of internal reliability (Bell et al., 2019).

The reliability analysis was applied in this study to measure the overall consistency of the items of each in-flight service component and whether deleting certain items will improve the reliability of the study. First, Cronbach's alpha was used to calculate the alpha coefficient of each dimension. Thereafter, the focus was on the items per dimension. The values of the alpha coefficient if the items would be deleted from the original data have been examined. If the alpha coefficient by deleting the item is higher than the general alpha coefficient for the dimension, the item was deleted from the original data. To confirm this, the corrected item-total correlation score, and the scale mean and variance if the item would be deleted were examined. Finally, it has been examined if the alpha coefficient of each dimension scale was above 0.8 in order to have an acceptable level of internal reliability.

4.5.3 Correlation analysis

After the reliability analysis, correlation statistics were used to measure the strength of the relationship between two or more variables (Diez, Cetinkaya-Rundel, & Barr, 2019). In order to find out if the in-flight service components and the passenger satisfaction were related, a bivariate analysis was performed by Pearson's r test using the correlation coefficient (Bell et al., 2019). The correlation coefficient (r) always takes values between -1 and 1, and describes the strength of the linear relationship between variables. A correlation coefficient near +1 indicates a strong and positive relationship between variables, while a correlation coefficient near -1 indicates a strong and negative relationship between variables. A correlation coefficient near zero indicates that there is no apparent linear relationship between variables (Diez et al., 2019).

The correlation analysis was applied by measuring if there are some significant relations between the transformed mean value of each in-flight service component and the overall passenger satisfaction. For each in-flight service component both the positive as the negative relationship with the overall passenger satisfaction was presented. Therefore, the proposed hypotheses could be tested effectively. Within the correlation analysis, two hypotheses have been tested: H0: There is no relationship, and H1: There is a relationship. The H0 was rejected if the p-value or significance is less than 0.05.

4.5.4 Multiple regression analysis

In order to test the conceptual model of the study, a multiple regression analysis has been performed. While the correlation analysis only can determine the linear relationship between one dependent variable and one independent variable, the multiple regression analysis focuses on the relationship between a dependent variable and two or more independent variables (Diez et al., 2019). The result of multiple regression is the R value, which stands for the multiple correlation coefficient. The multiple correlation coefficient is the combined correlation of a set of independent variables with the dependent variable, taking into account the fact that each independent variable might be correlated with each of the other independent variables (Bernard, 2013). Besides the R value, multiple regression calculates the R^2 value, which determines the amount of variability in the dependent variable that can be explained by the independent variables (Diez et al., 2019).

The multiple regression analysis was applied to test if the value of each of the nine in-flight service components significantly directly influence the passenger satisfaction of full-service airlines and have a predictive function as well. It was determined whether the value of the dependent variable (passenger satisfaction) can be predicted by the value of the in-flight service components. Therefore, the conceptual model has been tested to see if passengers satisfaction of full-service airlines can be significantly predicted by the independent variables and covariates.

4.5.5 Analysis of variance

In order to test whether the mean outcome differs across two or more sample groups, the ANOVA test has been used. It considers all groups simultaneously to decipher whether there is evidence that some difference exists. ANOVA uses a test statistic F , which represents a standardized ratio of variability in the sample means relative to the variability within the groups (Diez et al., 2019). If the ANOVA test is significant, it indicates that at least two of the groups have means that are significantly different from each other. However, it does not tell you which of the groups are different. ANOVA does not consider the direction of the differences between the group means, so there is no equivalent to a one-tailed test (DeCoster, 2006).

In this study, the ANOVA test was applied to determine if there is a significance difference between the sample groups, based on difference in gender, age, and continent of origin. It was determined whether the sample groups have significant different opinions in each scale. It was examined whether the F value is varying between and within the sample groups. In order to see if these differences between the opinions of the sample groups are significant, two hypotheses were tested. H_0 : There is no difference, and H_1 : There is a difference. The H_0 was rejected if the p -value or significance is less than 0.05. Finally, a conclusion has been drawn whether the results of this study may or may not be influenced by respondents' gender, age, and continent from origin.

4.6 Ethical issues

In this study it was important to protect the participants and to treat them correctly. Various ethical issues were taken into account within this study. First, the avoiding of harm by ensuring that participants are in no way harmed as a result of their participation in this study (Bell et al., 2019). The data within the online questionnaire has been collected anonymously. No names were asked in the survey, only the participants' gender, age, continent of origin and their background concerning full-service airlines were asked.

Second, informed consent was taken into account. The participants were given as

much information as possible about the study in order to be able to make an informed decision about whether or not they want to participate in it (Bell et al., 2019). The aim of the study and the objectives of the survey were explained to the participants, as well as the time it will take to complete the survey. This allowed participants to consider their choices and to discuss their decision with others if appropriate. The third ethical issue that was taken into account is privacy. Private and personal domains subjects were not been asked in the survey. In addition, the participants had the choice to not share their opinion on a specific question if they do not want to answer the question.

4.7 Limitation of the design

The research design also had a number of limitations. First, sampling in online surveys poses some specific challenges, since not everyone has the technical ability to handle online surveys and therefore the research was restricted to online populations. An additional issue in relation to online sampling and sampling-related error was the matter of non-response, since there is growing evidence that online surveys typically generate lower response rates than postal questionnaire surveys (Pedersen & Nielsen, 2016). Another issue was the possibility for multiple replies, since online surveys carry a risk that some people may mischievously complete the questionnaire more than once, which will decrease the reliability of the research (Bell et al., 2019). In addition, online survey respondents may misinterpret the questions they were asked, since the questions cannot be explained to them and this would potentially undermine the accuracy of their answers (Peytchev, Conrad, Couper, & Tourangeau, 2010).

5. Results

In this chapter, the collected data will be analysed by making use of Statistical Package for the Social Science (SPSS). First, a descriptive analysis will be performed by describing the demographic information of the respondents and the scales of the dimensions of the conceptual model. Second, a reliability analysis will be performed, followed by a correlation analysis and multiple regression analysis. Finally, an analysis of variance will be displayed, followed by a predictive conceptual model.

5.1 Sample profile

By using the descriptive analysis of SPSS the general characteristics of the study sample are shown in table 2. The table shows that in total 173 passengers who have taken long-distance flights from Schiphol Airport in Amsterdam participated in this study. According to the table, most of the participants were female (71.7%) and they mainly come from Europe (78%). Regarding the age category, most of the participants were between 21 and 30 years old (75.1%).

Table 2: Descriptive statistics for sample profile

	Frequency	Valid Percent
Gender		
Male	48	27.7
Female	124	71.7
Other	1	0.6
Total	173	100.0
Continent of origin		
Asia	30	17.3
North America	5	2.9
South America	2	1.2
Europe	135	78.0
Australia	1	0.6
Total	173	100.0
Age		
<21	16	9.2
21-30	130	75.1
31-40	10	5.8
41-50	5	2.9
51-60	6	3.5
61+	6	3.5
Total	173	100.0

5.2 Respondents' background concerning full-service airlines

The descriptive analysis of SPSS was also used to summarize the respondents' background concerning full-service airlines, which is shown in table 3. The table shows that most of the respondents fly once a year (35.8%) and once every few years (35.8%) with a full-service airline. Among them, the most respondents travelled for leisure purpose (84.4%) the last time they flew with a full-service airline. In addition, they mainly travelled with family or friends (46.8%) and stayed in economy class during this flight (91.3%).

Table 3: Descriptive statistics for sample's background concerning full-service airlines

	Frequency	Valid Percent
Frequency of flying		
Once a week or more	1	0.6
2-3 times a month	1	0.6
Once a month	1	0.6
A few times a year	46	26.6
Once a year	62	35.8
Once every few years	62	35.8
Total	173	100.0
Purpose of travel		
Business	12	6.9
Leisure	146	84.4
Both	15	8.7
Total	173	100.0
Companions		
Only myself	51	29.5
My colleague(s)	5	2.9
My partner	36	20.8
Family/friends	81	46.8
Total	173	100.0
Seat class		
Economy class	158	91.3
First class/Comfort class	8	4.6
Business class	7	4.0
Total	173	100.0

5.3 Descriptive analysis of dimensions

The conceptual model of this study has seven independent variables, two covariates (Heart-warming, Heart-assuring, Heart-soothing, Courtesy, Appreciation, Socializing, Comfort, Comfortable seats and legroom, and Food and beverages) and one dependent variable (Passenger satisfaction of full-service airlines). In order to describe the rating of each variable in general and calculating the N-number of people, mean and standard deviation values, the descriptive analysis of SPSS was used again.

As shown in table 4, the mean value of all four times of the dimension heart-warming is relatively high, which indicates that the respondents experienced a lot of heart-warming characteristics and attitudes of the cabin crew the last time they flew with a full-service airline. Among them, the item “When boarding the plane, the cabin crew offered me a warm welcoming” has the highest mean value ($\mu=4.43$, $\sigma=0.537$) and is therefore the most experienced item by the respondents. The item “During the flight the cabin crew was constantly friendly to me” has the lowest mean value ($\mu=4.25$, $\sigma=0.735$), however, the value is still high. The standard deviation of this dimension is varying from 0.573 to 0.746, which means there is a relatively low difference between respondents’ opinions in this dimension.

Table 4: Descriptive statistics of the dimension Heart-warming

Heart-warming	N	Mean	St. Deviation
When boarding the plane, the cabin crew offered me a warm welcoming	173	4.43	0.573
During the flight the cabin crew interacted with me in a polite manner	173	4.36	0.724
During the flight the cabin crew treated me with full respect	173	4.36	0.746
During the flight the cabin crew was constantly friendly to me	173	4.25	0.735

As stated in table 5, the dimension heart-assuring consists of three items in which the item “During the flight the cabin crew ensured my safety” has the highest mean value ($\mu=4.19$, $\sigma=0.676$), which indicates that the respondents experienced that the cabin crew ensured their safety the last time they flew with a full-service airline. The item “During the flight the cabin crew made an effort to provide me personal attention” has the lowest mean value ($\mu=3.46$, $\sigma=0.866$), which shows that the respondents had the least experience that the cabin crew provide them personal attention during the flight. The standard deviation of this dimension is varying from 0.676 to 0.866, which means

there are certain differences between respondents' opinions in this dimension, however these differences are not that high.

Table 5: Descriptive statistics of the dimension Heart-assuring

Heart-assuring	N	Mean	St. Deviation
During the flight the cabin crew made an effort to provide me personal attention	173	3.46	0.866
During the flight the cabin crew responded promptly to my requests	173	3.84	0.790
During the flight the cabin crew ensured my safety	173	4.19	0.676

The dimension heart-soothing also consists of three items (see table 6), in which the item "During the flight the cabin crew offered me any kind of assistance" has the highest mean value ($\mu=3.76$, $\sigma=0.799$) and the item "During the flight the cabin crew engaged with me in a small talk" has the lowest mean value ($\mu=2.78$, $\sigma=1.067$). This indicates that the respondents hardly experienced that the cabin crew engaged with them in a "small talk". The standard deviation of this dimension is varying from 0.799 to 1.067, which means that the differences between respondents' opinions in this dimension are slightly higher than the previous mentioned dimensions.

Table 6: Descriptive statistics of the dimension Heart-soothing

Heart-soothing	N	Mean	St. Deviation
During the flight the cabin crew offered me any kind of assistance	173	3.76	0.799
During the flight the cabin crew engaged with me in a "small talk"	173	2.78	1.067
During the flight the cabin crew ensured that I was comfortable while sitting	173	3.59	0.915

As shown in table 7, the mean value of all four items in the dimension courtesy is relatively high, indicating that the respondents experienced courtesy of the cabin crew the last time they flew with a full-service airline. The item "During the flight the cabin crew interacted with me in a polite manner" has the highest mean value ($\mu=4.36$, $\sigma=0.724$), together with the item "During the flight the cabin crew treated me with full respect" ($\mu=4.36$, $\sigma=0.746$), and are therefore the most experienced by the respondents. The item "During the flight the cabin crew showed natural smiling faces almost all the time" has the lowest mean value ($\mu=3.90$, $\sigma=0.805$), however, the value is still high. The standard deviation of this dimension is varying from 0.724 to 0.805, which means there are certain differences between respondents' opinions in this dimension, however a slightly decrease compared with the previous mentioned dimension.

Table 7: Descriptive statistics of the dimension Courtesy

Courtesy	N	Mean	St. Deviation
During the flight the cabin crew interacted with me in a polite manner	173	4.36	0.724
During the flight the cabin crew treated me with full respect	173	4.36	0.746
During the flight the cabin crew always maintained eye contact with me during conversations	173	3.91	0.904
During the flight the cabin crew showed natural smiling faces allmost all the time	173	3.90	0.805

In the dimension appreciation (see table 8), the item “After landing, the cabin crew wished me a friendly goodbye” has the highest mean value ($\mu=4.43$, $\sigma=0.602$), followed by the item “After landing, the cabin crew sincerely thanked me for flying with the airline” ($\mu=4.16$, $\sigma=0.810$), which shows that the respondents experienced this during their flight. The item which has the lowest mean value is “During the flight the cabin crew offered me some kind of gifts or token of appreciation” ($\mu=2.51$, $\sigma=1.076$), which indicates that the respondents hardly experienced some kind of gifts or token of appreciation offered by the cabin crew. The standard deviation of this dimension is varying from 0.602 to 1.100, which means that the differences between respondents’ opinions in this dimension are slightly higher than the previous mentioned dimension.

Table 8: Descriptive statistics of the dimension Appreciation

Appreciation	N	Mean	St. Deviation
During the flight the cabin crew offered me some kind of gifts or token of appreciation	173	2.51	1.076
After landing, the cabin crew wished me a friendly goodbye	173	4.43	0.602
After landing, the cabin crew sincerely thanked me for flying with the airline	173	4.16	0.810
After landing, the cabin crew invited me to fly with the airline again in the future	173	3.83	1.100

In the dimension socializing (see table 9), the item “During the flight the cabin crew interacted with me in a polite manner” has the highest mean value ($\mu=4.36$, $\sigma=0.724$). The items “During the flight the cabin crew engaged with me in a small talk” ($\mu=2.78$, $\sigma=1.067$) and “During the flight the cabin crew made an effort to spend time with me” have the lowest mean value ($\mu=2.64$, $\sigma=1.034$). This shows that the respondents hardly experienced that the cabin crew made an effort to spend time with them and engaged with them in a “small talk”. The standard deviation of this dimension is

varying from 0.724 to 1.067, which means the level of differences between respondents' opinions in this dimension is approximately similar to the previous dimension.

Table 9: Descriptive statistics of the dimension Socializing

Socializing	N	Mean	St. Deviation
During the flight the cabin crew engaged with me in a "small talk"	173	2.78	1.067
During the flight the cabin crew interacted with me in a polite manner	173	4.36	0.724
During the flight the cabin crew made an effort to spend time with me	173	2.64	1.034

As shown in table 10, the dimension comfort consists of three items, whose mean value are slightly high and does not differ much from each other. The item "During the flight the cabin crew ensured that I was comfortable while sitting" has the highest mean value ($\mu=3.59$, $\sigma=0.915$), while the item "During the flight I was able to get a good rest of sleep" has the lowest mean value ($\mu=2.91$, $\sigma=1.261$), and indicates that the respondents were hardly able to get a good rest of sleep during their flight. The standard deviation of this dimension is varying from 0.915 to 1.261, which means there is a relatively higher difference between respondents' opinions in this dimension.

Table 10: Descriptive statistics of the dimension Comfort

Comfort	N	Mean	St. Deviation
During the flight I was able to get a good rest of sleep	173	2.91	1.261
During the flight the in-flight temperature was comfortable to me	173	3.25	1.024
During the flight the cabin crew ensured that I was comfortable while sitting	173	3.59	0.915

Regarding the two covariates of the conceptual model of this study, the mean value of the items of the covariate comfortable seats and legroom differ from each other, which is shown in table 11. The item "During the flight I had a screen at my disposal to watch movies" has the highest mean value ($\mu=4.35$, $\sigma=0.776$), followed by the item "During the flight, I had a neck pillow and blanket at my disposal ($\mu=3.99$, $\sigma=0.979$), indicating that the respondents had a screen and a neck pillow and blanket at their disposal during their flight. The items with the lowest mean value are "During the flight my seat was comfortable" ($\mu=3.14$, $\sigma=1.055$) and "During the flight I had sufficient legroom" ($\mu=3.23$, $\sigma=1.084$), which shows that the respondents hardly experienced a comfortable seat and sufficient legroom during their flight. The

standard deviation of this dimension is varying from 0.776 to 1.084, which means there are certain differences between respondents' opinions in this dimension.

Table 11: Descriptive statistics of the dimension Comfortable seats and legroom

Comfortable seats and legroom	N	Mean	St. Deviation
During the flight my seat was comfortable	173	3.14	1.055
During the flight, I had a neck pillow and blanket at my disposal	173	3.99	0.979
During the flight I had a screen at my disposal to watch movies	173	4.35	0.776
During the flight I had sufficient legroom	173	3.23	1.084

As shown in table 12, the second covariate food and beverages consists of one item: "A wide range of food and beverage choices were available during the flight". The item has a mean value of 3.87, which indicates that the respondents slightly experienced a wide range of different food and beverage choices during their flight. The item has a standard deviation of 0.908, which means there are certain differences between respondents' opinions in this dimension either.

Table 12: Descriptive statistics of the dimension Food and beverages

Food and beverages	N	Mean	St. Deviation
A wide range of different food and beverage choices were available during the flight	173	3.87	0.908

Table 13 shows that the dependent variable of this study consists of one item as well, which is "Based on my last experience, my overall satisfaction with the airline is...". The item has a relatively high mean value (4.05), which shows that the respondents are overall satisfied with the airline based on their experience of the last time they flew with a full-service airline. The item has a standard deviation of 0.658, which shows there are certain differences between respondents' opinions in this dimension, however these differences are not that high.

Table 13: Descriptive statistics of the dimension Passenger satisfaction of full-service airlines

Passenger satisfaction of full-service airlines	N	Mean	St. Deviation
Based on my last experience, my overall satisfaction with the airline is...	173	4.05	0.658

As described above, it can be concluded that the mean value of all variables of this study is varying from 2.51 to 4.43. In addition, the standard deviation of those

variables is varying from 0.573 to 1.261. This difference reflects that there are differences between respondents' opinions.

5.4 Reliability analysis

In order to measure the overall consistency of the items of each in-flight service component and whether deleting certain items will improve the reliability of the study, SPSS's reliability analysis has been performed using Cronbach's alpha. Since the covariate food and beverages consists of one item, it was not possible to perform a reliability test and therefore the dimension is not included in the analysis.

As shown in table 14, 26 items were remained for further analysis, while 3 items were deleted from the original data. In the dimension Appreciation, the item "During the flight the cabin crew offered me some kind of gifts or token of appreciation" was deleted, since it will increase the α coefficient from .594 to .710. Moreover, the corrected item-total correlation score of this item was .163 and therefore quite low. The second item that has been deleted is "During the flight the cabin crew interacted with me in a polite manner" from the dimension Socializing, since it will increase the α coefficient from .580 to .674 and the corrected item-total correlation score of this item was also low (.226). The third item that has been deleted is "During the flight the cabin crew ensured that I was comfortable while sitting" from the dimension Comfort, since the α coefficient will increase from .662 to .694 and the corrected item-total correlation score of this item was .365 and therefore low. Besides, the item is measuring something else than the other items in the scale, since the other items will measure tangible components while this item is measuring an intangible component. Therefore, based on the content the item should be removed as well.

In addition, when the item "When boarding the plane, the cabin crew offered me a warm welcoming" in the dimension Heart-warming will be deleted, the α coefficient will increase from .866 to .899. However, since the increase is not that high and the corrected item-total correlation score of this item still reached .513, the item was still remained in the original data. The same applies for the item "During the flight the cabin crew always maintained eye contact with me during conversations" from the dimension Courtesy. When deleting this item, the α coefficient will increase from .806

to .835. However, since the α coefficient is already above 0.8 and the item-total correlation score still reached .482, the item was remained in the data. Besides, the item “During the flight the cabin crew ensured my safety” from the dimension Heart-assuring was still remained in the data, despite the fact that when the item will be deleted the α coefficient will increase from .617 to .633. The item was remained since the items in the scale are coherent and the increase is not that high. The statistical tables of the reliability analysis are shown in appendix II.

Table 14: Descriptive & reliability statistics of each dimension

	N	N of items	Cronbach's Alpha	Mean	St. Deviation
Heart warming	173	4	.866	4.353	.589
Heart-assuring	173	3	.617	3.829	.588
Heart-soothing	173	3	.644	3.376	.713
Courtesy	173	4	.806	4.133	.634
Appreciation	173	3	.710	4.139	.686
Socializing	173	2	.674	2.711	.912
Comfort	173	2	.694	3.081	1.005
Comfortable seats and legroom	173	4	.602	3.679	.662
Food and beverages	173	1	-	3.867	.908

As shown in table 14, the α coefficients of all the dimensions are not that high, except for the dimensions “Heart-warming” (.866) and “Courtesy” (.806). Due to the fact that an α coefficient above 0.8 has an acceptable level of internal reliability, only the data of these two dimensions is reliable enough for further analysis. However, with a limited number of items per dimension it is difficult to get a high α coefficient, which explains the lower scores. Moreover, the items in the scales correlate well with each other, since the corrected item-total correlation scores of all items are above 0.3 after deleting the above mentioned three items.

In addition, table 14 shows that the dimension “Heart-warming” has the highest mean value ($\mu=4.353$, $\sigma=.589$), followed by “Appreciation” ($\mu=4.139$, $\sigma=.686$) and “Courtesy” ($\mu=4.133$, $\sigma=.634$). The dimension “Socializing” has the lowest mean value ($\mu=2.711$, $\sigma=.912$). The standard deviations of the dimensions are varying from .588 to 1.005, which means there are certain differences between respondents’

opinions. These range in variance is explicable for a 5-point Likert scale because respondents had multiple answer options.

5.5 Correlation analysis

In order to measure if the in-flight service components and the passenger satisfaction are related, SPSS correlation analysis has been performed by Pearson's r test using the correlation coefficient.

As shown in table 15, the majority of the independent variables have positive relationships with each other. Of all independent variables, the in-flight service components "Heart-warming" and "Courtesy" have the strongest correlation ($r=.865$, $p<0.01$), followed by the components "Heart-soothing" and "Socializing" ($r=.815$, $p<0.01$), and "Heart-assuring" and "Heart-soothing" ($r=.634$, $p<0.01$). Moreover, the components "Appreciation" and "Comfort" have the weakest correlation ($r=.162$, $p<0.05$), followed by the components "Socializing" and "Comfortable seats and legroom" ($r=.193$, $p<0.05$).

Regarding the concepts from the conceptual model, the three hospitableness dimensions (Heart-warming, Heart-assuring, and Heart-soothing) correlate above average and slightly high with each other, since the correlation coefficient is varying from .480 to .634. In addition, the four airline hospitality dimensions (Courtesy, Appreciation, Socializing, and Comfort) correlate moderately with each other, since the correlation coefficients are not that high and vary from .162 to .420. Regarding the relationship between the two concepts, the hospitableness dimensions indeed relate to the airline hospitality dimensions, since they significantly positively correlate with each other as the correlation coefficients vary from .311 to .865.

Next to the two concepts, the two covariates (Comfortable seats and legroom, and Food and beverages) correlate quite moderately with each other, since the correlation coefficient contains a value of 0.356. Furthermore, the covariates are moderately related to the hospitableness and airline hospitality dimensions, since the correlation coefficients are varying from .193 to .500.

All independent variables have significant moderate relationships with the dependent variable. Of all independent variables, the in-flight service component "Courtesy" has

the strongest correlation with “Passenger satisfaction of full-service airlines” ($r=.526$, $p<0.01$), followed by the components “Heart-warming” ($r=.511$, $p<0.01$) and “Comfort” ($r=.437$, $p<0.01$). Furthermore, the component “Appreciation” has the weakest correlation with “Passenger satisfaction of full-service airlines” ($r=.216$, $p<0.01$), followed by the component “Socializing” ($r=.248$, $p<0.01$). The table of the correlation analysis is shown in appendix III.

Table 15: Correlation matrix

	Heart-warming	Heart-assuring	Heart-soothing	Courtesy	Appreciation	Socializing	Comfort	Comfortable seats and legroom	Food and beverages	Passenger satisfaction of full-service airlines
Heart-warming	1									
Heart-assuring	.547**	1								
Heart-soothing	.480**	.634**	1							
Courtesy	.865**	.580**	.541**	1						
Appreciation	.468**	.373**	.329**	.420**	1					
Socializing	.316**	.572**	.815**	.419**	.271**	1				
Comfort	.311**	.422**	.340**	.323**	.162*	.210**	1			
Comfortable seats and legroom	.327**	.451**	.294**	.345**	.197**	.193*	.414**	1		
Food and beverages	.474**	.458**	.359**	.500**	.282**	.266**	.352**	.356**	1	
Passenger satisfaction of full-service airlines	.511**	.419**	.396**	.526**	.216**	.248**	.437**	.419**	.420**	1

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

* . Correlation is significant at the 0.05 level (2-tailed).

5.6 Multiple regression analysis

The multiple regression analysis was applied to test if the value of each of the nine in-flight service components significantly directly influence the passenger satisfaction of full-service airlines and have a predictive function as well. Therefore, in order to determine whether the value of the dependent variable (Passenger satisfaction of full-service airlines) can be significantly predicted by the value of the independent variables and covariates (Heart-warming, Heart-assuring, Heart-soothing, Courtesy, Appreciation, Socializing, Comfort, Comfortable seats and legroom, and Food and beverages), three models have been tested. These three models are based on the content of the conceptual model of this study.

5.6.1 Hospitableness Scale

The first model was used to test if the passenger satisfaction of full-service airlines can be significantly predicted by the three dimensions of hospitableness. As shown in table 16, the result of the regression model reveals that the prediction of the three components is moderate ($R=.547$), and can only explain 29.9% ($R^2=.299$) of the passenger's satisfaction of full-service airlines variation. In addition, the table shows that the variance explained is indeed significant ($F=24.007$, $p<0.05$), and therefore this regression model is a suitable fit to the data.

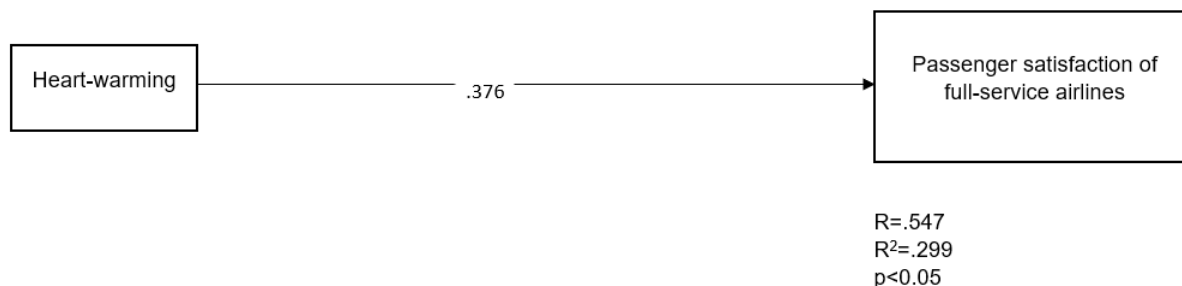
Table 16 shows that the component "Heart-warming" is the only significant predictor for passenger satisfaction, since the p value is less than 0.05. Besides, the component is moderately correlated with the passenger satisfaction ($\beta=.376$). The value of Beta (β) indicates the strength of the effect of each independent variable to the dependent variable. The complete output of the regression analysis is shown in appendix IV.

Table 16: Regression analysis with dependent variable "Passenger satisfaction of full-service airlines"

Variables	Beta	P
Heart-warming	.376	.000
Heart-assuring	.127	.155
Heart-soothing	.134	.116
R	.547	
R²	.299	
F	24.007	
sig(F)	.000	

Figure 2 below shows the overall significant performance of this model, in which the in-flight service component “Heart-warming” is the only significant predictor for passenger satisfaction of full-service airlines.

Figure 2: Significant predictor for passenger satisfaction of full-service airlines



5.6.2 Airline hospitality

The second model was used to test if the passenger satisfaction of full-service airlines can be significantly predicted by the four dimensions of airline hospitality. As shown in table 17, the quality of the prediction model is relatively moderate ($R=.598$), and can explain 35.7% ($R^2=.357$) of the passenger's satisfaction variation. The table also indicates that the variance explained is significant ($F=23.337$, $p<0.05$), and therefore this model is a suitable fit to the data.

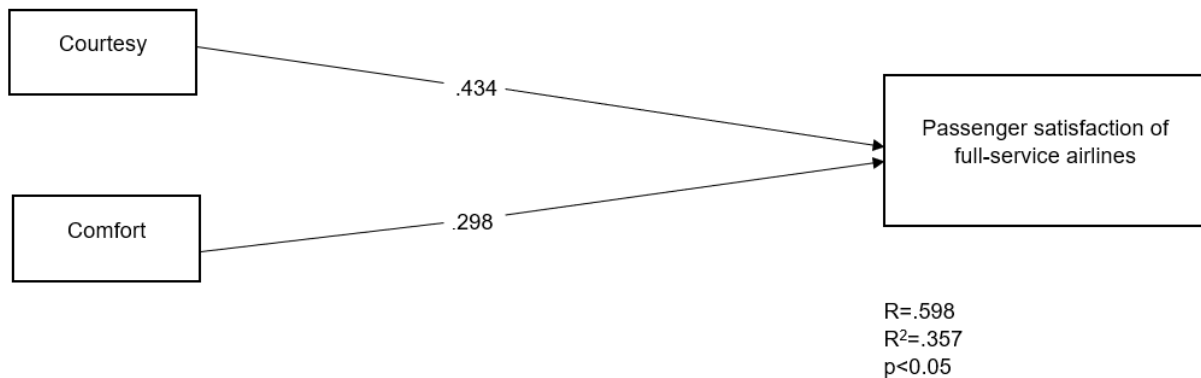
Table 17 shows that the components “Courtesy” and “Comfort” are significant predictors for passenger satisfaction, since their p values are less than 0.05. Both the components “Courtesy” ($\beta=.434$) and “Comfort” ($\beta=.298$) are moderately correlated with passenger satisfaction. The value of Beta (β) indicates the strength of the effect of each independent variable to the dependent variable. The complete output of the regression analysis is shown in appendix IV.

Table 17: Regression analysis with dependent variable “Passenger satisfaction of full-service airlines”

Variables	Beta	P
Courtesy	.434	.000
Appreciation	-.017	.806
Socializing	.008	.903
Comfort	.298	.000
R	.598	
R²	.357	
F	23.337	
sig(F)	.000	

Figure 3 below shows the overall significant performance of this model, in which the in-flight service components “Courtesy” and “Comfort” are the significant predictors for passenger satisfaction of full-service airlines.

Figure 3: Significant predictors for passenger satisfaction of full-service airlines



5.6.3 Key drivers that influences in-flight passenger satisfaction

The third model was used to test if the passenger satisfaction of full-service airlines can be significantly predicted by the two covariates of the conceptual model. Table 18 shows that the prediction of the two covariates is moderate (R=.509), and can only explain 25.9% (R²=.259) of the passenger’s satisfaction variation. Besides, the variance explained is indeed significant (F=29.744, p<0.05), making this regression model a suitable fit to the data.

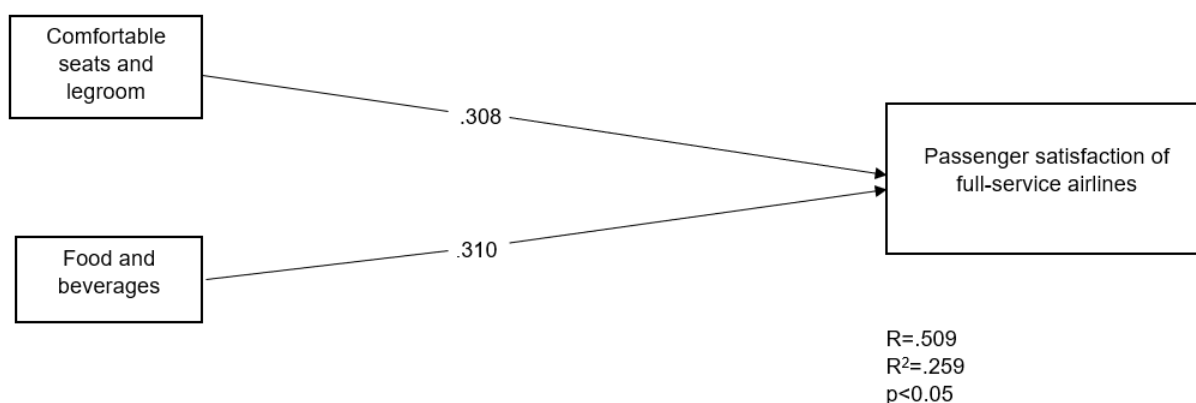
The table shows that both the two covariates “Comfortable seats and legroom” and “Food and beverages” are significant predictors for passenger satisfaction, since their p values are below 0.05. Both covariates “Comfortable seats and legroom” (β=.308) and “Food and beverages” (β=.310) are positively correlated with passenger satisfaction, however the values are not that high. The value of Beta (β) indicates the strength of the effect of each independent variable to the dependent variable. The complete output of the regression analysis is also shown in appendix IV.

Table 18: Regression analysis with dependent variable "Passenger satisfaction of full-service airlines"

Variables	Beta	P
Comfortable seats and legroom	.308	.000
Food and beverages	.310	.000
R	.509	
R ²	.259	
F	29.744	
sig(F)	.000	

Figure 4 below shows the overall significant performance of this model, in which the covariates "Comfortable seats and legroom" and "Food and beverages" are the significant predictors for passenger satisfaction of full-service airlines.

Figure 4: Significant predictors for passenger satisfaction of full-service airlines



5.6.4 Stepwise regression

After the above shown multiple regressions analysis, a stepwise regression analysis has been performed with the variables from the previous regressions, which are the significant predictors for passenger satisfaction of full-service airlines. So, the non-significant predictors are not included in the stepwise regression analysis, since they do not add value. As shown in table 19, Model 1 indicates that the component "Heart-warming" significantly predict the value for passenger satisfaction of full-service airlines, since the p value is less than 0.05. Model 2 indicates that the components "Courtesy" and "Comfort" can significantly predict the value for passenger satisfaction, and Model 3 illustrates that only the components "Comfort" and "Comfortable seats and legroom" are significant predictors for passenger satisfaction,

since their p values are below 0.05. Of these two components, “Comfort” has the strongest correlation with passenger satisfaction ($\beta=.214$).

Generally, Model 3 is better than the other two models, since it has the highest R value compared to the other models ($R=.632$), and therefore this model forms the highest prediction for passenger satisfaction of full-service airlines. Moreover, Model 3 has the highest R^2 value (.399) and explains 3.4% ($\Delta R^2=.034$) more variation of the passenger’s satisfaction compared to Model 2, and 13.8% ($\Delta R^2=.104 + \Delta R^2=.034$) more variation compared to Model 1. Besides, the variance explained in Model 3 is indeed significant ($\Delta F=4.726$, $p<0.05$), making this model a suitable fit to the data. Furthermore, Model 3 can predict all remaining scales’ contribution to the total variability of passenger satisfaction, while Model 1 and Model 2 can only test the contribution of “Heart-warming”, and “Courtesy and Comfort” to the total variance explained. The complete output of the stepwise regression analysis is shown in appendix IV.

Table 19: Stepwise regression analysis

Variables	Model 1		Model 2		Model 3	
	Beta	P	Beta	P	Beta	P
Heart-warming	.511	.000	.183	.138	.157	.195
Courtesy			.274	.027	.211	.087
Comfort			.292	.000	.214	.002
Comfortable seats and legroom					.169	.015
Food and beverages					.105	.150
R	.511		.604		.632	
R²	.261		.365		.399	
F	60.329		32.416		22.197	
sig(F)	.000		.000		.000	
ΔR^2			.104		.034	
ΔF			13.906		4.726	
sig. F Change			.000		.010	

5.7 Analysis of variance

In order to determine whether the results of this study are influenced by respondents’ gender, age, and continent from origin, the ANOVA test was applied. The null hypothesis of this test is that there is no difference between the opinions of the sample groups. If the ANOVA test is significant and the p value is less than 0.05, it

indicates that at least two of the groups have means that are significantly different from each other. The results of the test are described below per category.

5.7.1 Gender

First, the ANOVA test was applied in order to determine whether the results of this study were influenced by respondents' gender. As shown in table 20, the F is the ratio of the two mean square values (between groups df=2 / within groups df=170). The F value is varying from .350 (p=.705) to 4.531 (p=.012). The table indicates a significant difference between the opinions of the sample groups within the dimensions "Heart-assuring" and "Comfortable seats and legroom", since their p values are less than 0.05. Within the dimension "Heart-assuring", the variation among the sample group means is 3.896, while the variation among the sample group means within the dimension "Comfortable seats and legroom" is 4.531. Therefore, the results of this study within these two dimensions were influenced by respondents' gender.

Table 20: ANOVA test by gender

	N	Mean	Std. Dev	F		N	Mean	Std. Dev	F
Heart-warming					Heart-assuring				
Male	48	4.38	.604	F(2,170) =.557 p=.574	Male	48	3.97	.591	F(2,170) =3.896 p=.022
Female	124	4.35	.586		Female	124	3.78	.574	
Other	1	3.75			Other	1	2.67		
Total	173	4.35	.589		Total	173	3.83	.588	
Heart-soothing					Courtesy				
Male	48	3.53	.750	F(2,170) =1.520 p=.222	Male	48	4.18	.703	F(2,170) =1.102 p=.335
Female	124	3.32	.696		Female	124	4.12	.605	
Other	1	3.33			Other	1	3.25		
Total	173	3.38	.713		Total	173	4.13	.634	
Appreciation					Socializing				
Male	48	4.17	.623	F(2,170) =.730 p=.484	Male	48	2.96	.922	F(2,170) =2.727 p=.068
Female	124	4.13	.710		Female	124	2.62	.896	
Other	1	3.33			Other	1	2.00		
Total	173	4.14	.686		Total	173	2.711	.912	
Comfort					Comfortable seats and legroom				
Male	48	3.33	.947	F(2,170) =2.121 p=.123	Male	48	3.72	.696	F(2,170) =4.531 p=.012
Female	124	2.98	1.018		Female	124	3.68	.630	
Other	1	3.00			Other	1	1.75		
Total	173	3.08	1.005		Total	173	3.68	.662	
Food and beverages					Passenger satisfaction of full-service airlines				
Male	48	3.96	1.031	F(2,170) =.350 p=.705	Male	48	4.13	.640	F(2,170) =.406 p=.667
Female	124	3.83	.862		Female	124	4.02	.668	
Other	1	4.00			Other	1	4.00		
Total	173	3.87	.908		Total	173	4.05	.658	

5.7.2 Age

Second, the ANOVA test was applied in order to determine whether the results of this study were influenced by respondents' age. As shown in table 21, the F ratio is the ratio of the two mean square values (between groups df=5 / within df=167). The F value is varying from .253 (p=.938) to 3.495 (p=.005). The table indicates a significant difference between the opinions of the sample groups within the dimension "Food and beverages", since the p value is less than 0.05. Within this dimension, the variation among the sample group means is 3.495. Therefore, within the dimension "Food and beverages" the results of this study were influenced by respondents' age.

Table 21: ANOVA test by age

	N	Mean	Std. Dev	F		N	Mean	Std. Dev	F
Heart-warming					Heart-assuring				
<21	16	4.22	.591	F(5,167) =.253 p=.938	<21	16	3.75	.615	F(5,167) =1.234 p=.295
21-30	130	4.37	.588		21-30	130	3.89	.598	
31-40	10	4.30	.675		31-40	10	3.53	.526	
41-50	5	4.35	.720		41-50	5	3.60	.641	
51-60	6	4.29	.557		51-60	6	3.61	.328	
61+	6	4.46	.600		61+	6	3.67	.422	
Total	173	4.35	.589		Total	173	3.83	.588	
Heart-soothing					Courtesy				
<21	16	3.31	.649	F(5,167) =.947 p=.452	<21	16	4.03	.718	F(5,167) =.359 p=.876
21-30	130	3.43	.748		21-30	130	4.16	.625	
31-40	10	2.97	.457		31-40	10	3.93	.850	
41-50	5	3.27	.796		41-50	5	4.15	.742	
51-60	6	3.44	.544		51-60	6	4.08	.342	
61+	6	3.17	.350		61+	6	4.13	.468	
Total	173	3.38	.713		Total	173	4.13	.634	
Appreciation					Socializing				
<21	16	3.92	.715	F(5,167) =1.062 p=.383	<21	16	2.69	1.047	F(5,167) =.856 p=.512
21-30	130	4.17	.675		21-30	130	2.77	.934	
31-40	10	3.90	.610		31-40	10	2.30	.675	
41-50	5	4.47	.767		41-50	5	2.30	.837	
51-60	6	3.94	.976		51-60	6	2.75	.612	
61+	6	4.33	.558		61+	6	2.42	.585	
Total	173	4.14	.686		Total	173	2.71	.912	
Comfort					Comfortable seats and legroom				
<21	16	3.38	1.147	F(5,167) =.827 p=.532	<21	16	3.66	.618	F(5,167) =1.830 p=.110
21-30	130	3.09	.997		21-30	130	3.73	.634	
31-40	10	2.60	.775		31-40	10	3.23	.862	
41-50	5	2.90	1.140		41-50	5	3.15	1.167	
51-60	6	2.92	1.021		51-60	6	3.79	.401	
61+	6	3.25	1.084		61+	6	3.79	.459	
Total	173	3.08	1/005		Total	173	3.68	.662	
Food and beverages					Passenger satisfaction of full-service airlines				
<21	16	3.81	.834	F(5,167) =3.495 p=.005	<21	16	4.31	.704	F(5,167) =1.508 p=.190
21-30	130	3.99	.831		21-30	130	4.04	.675	
31-40	10	3.10	1.287		31-40	10	3.80	.422	
41-50	5	3.00	1.414		41-50	5	4.20	.447	
51-60	6	3.33	.816		51-60	6	4.33	.516	
61+	6	3.83	.753		61+	6	3.67	.516	
Total	173	3.87	.908		Total	173	4.05	.658	

5.7.3 Continent of origin

Third, the ANOVA test was applied in order to determine whether the results of this study were influenced by respondents' continent of origin. As shown in table 22, the F ratio is the ratio of the two mean square values (between groups $df=4$ / within $df=168$). The F value is varying from .880 ($p=.477$) to 3.423 ($p=.010$). The table indicates a significant difference between the opinions of the sample groups within the dimensions "Courtesy" and "Passenger satisfaction of full-service airlines", since their p values are below 0.05. Within the dimension "Courtesy", the variation among the sample group means is 2.546, and the variation within the dimension "Passenger satisfaction of full-service airlines" is 3.423. Therefore, the results of this study within these two dimensions were influenced by respondents' continent of origin.

Table 22: ANOVA test by continent of origin

	N	Mean	Std. Dev	F		N	Mean	Std. Dev	F
Heart-warming					Heart-assuring				
Asia	30	4.33	.551	F(4,168) =1.372 p=.246	Asia	30	3.92	.579	F(4,168) =1.203 p=.312
North America	5	4.15	.379		North America	5	3.47	.767	
South America	2	3.50	1.768		South America	2	3.33	.471	
Europe	135	4.37	.582		Europe	135	3.83	.583	
Australia	1	4.75			Australia	1	3.33		
Total	173	4.35	.589		Total	173	3.83	.588	
Heart-soothing					Courtesy				
Asia	30	3.34	.703	F(4,168) =1.728 p=.146	Asia	30	4.10	.635	F(4,168) =2.546 p=.041
North America	5	2.80	.380		North America	5	3.95	.411	
South America	2	2.67	1.414		South America	2	2.88	1.945	
Europe	135	3.42	.708		Europe	135	4.17	.605	
Australia	1	2.67			Australia	1	3.50		
Total	173	3.38	.713		Total	173	4.13	.634	
Appreciation					Socializing				
Asia	30	4.00	.594	F(4,168) =1.383 p=.242	Asia	30	2.85	.975	F(4,168) =1.652 p=.163
North America	5	3.93	.683		North America	5	1.90	.224	
South America	2	3.50	.707		South America	2	2.00	1.414	
Europe	135	4.18	.700		Europe	135	2.73	.897	
Australia	1	5.00			Australia	1	2.00		
Total	173	4.14	.686		Total	173	2.71	.912	
Comfort					Comfortable seats and legroom				
Asia	30	3.23	1.089	F(4,168) =.880 p=.477	Asia	30	3.69	.700	F(4,168) =1.659 p=.162
North America	5	2.50	.707		North America	5	2.95	1.124	
South America	2	3.00	.707		South America	2	3.50	.000	
Europe	135	3.08	.998		Europe	135	3.71	.631	
Australia	1	2.00			Australia	1	3.50		
Total	173	3.08	1.005		Total	173	3.68	.662	
Food and beverages					Passenger satisfaction of full-service airlines				
Asia	30	3.63	1.066	F(4,168) =1.578 p=.183	Asia	30	3.93	.785	F(4,168) =3.423 p=.010
North America	5	3.40	1.342		North America	5	4.20	.447	
South America	2	3.00	.000		South America	2	2.50	2.121	
Europe	135	3.95	.849		Europe	135	4.10	.584	
Australia	1	4.00			Australia	1	4.00		
Total	173	3.87	.908		Total	173	4.05	.658	

6. Discussion

Based on the interpretations of the empirical findings and the studied literature review, this chapter evaluates the proposed hypotheses and answers the problem statement of this study. Based on these evaluations, an adjusted conceptual model will be made and presented at the end of the chapter. In addition, the limitations of the findings will be described.

6.1 Evaluation of chosen topic

The main purpose of this study is to explore which in-flight service components influences the passenger satisfaction according to passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam. This topic has been chosen because of the current trend of the personalized in-flight guest experience within the full-service airline industry, combined with the researcher's interest in the key service element of full-service airlines, which is hospitableness of the cabin crew. Contrary to this trend, based on the descriptive results of this study presented in chapter 5, it is striking that the respondents had least experienced the personal service of the cabin crew, compared to the other in-flight service components. The descriptive analysis of the dimensions shows that the respondents had the least experience that the cabin crew made an effort to spend time with them and provide them personal attention during the flight. In addition, the respondents hardly experienced that the cabin crew engaged with them in a "small talk". However, the respondents did experience the hospitableness of the cabin crew. According to the descriptive analysis, the respondents were warmly welcomed by the cabin crew and have been treated with full respect during the flight. Besides, the cabin crew interacted with them in a polite manner and was constantly friendly to them during the flight.

6.2 Evaluation of hypotheses

H1: Heart-warming characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

Based on the statistical results of the stepwise regression analysis, this hypothesis is rejected. Therefore it can be said that, heart-warming characteristics and attitudes of the cabin crew have no significant effect on passenger satisfaction of full-service

airlines. Although in the correlation analysis the in-flight service component were positively correlated with passenger's satisfaction and the regression analysis of the Hospitableness Scale showed that it is indeed a significant predictor for passenger satisfaction, the stepwise regression analysis revealed that the component is not a significant predictor. This result does not match the study of Tasci and Semrad (2016), in which they demonstrated that the heart-warming factor of hospitableness has a significant effect on customer satisfaction. Furthermore, the results of this study has not proven the study of Ariffin and Maghzi (2012), stating that warm-welcoming is the most apparent aspect of hospitality in order to create customer satisfaction. In addition, the findings of Sezgen et al. (2019) and Kim et al. (2016) have not been confirmed, in which they stated that friendly-helpful staff and employee's politeness and warmth influences the passenger satisfaction.

H2: Heart-assuring characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

Based on the statistical results of this study, this hypothesis is also rejected. Even though in the correlation analysis the heart-assuring characteristics and attitudes of the cabin crew were positively correlated with passenger's satisfaction level of full-service airlines, it turned out not to be a significant predictor for passenger satisfaction from the regression analysis. This result does not correspond with Tasci and Semrad's (2016) statement, in which they stated that the heart-assuring factor of hospitableness has a significant effect on customer satisfaction. Besides, this result does not match the study of Loureiro and Fialho (2017), who stated that the cabin crew's professionalism and their expression of interest in passengers positively affect passengers' perceptions. Furthermore, the statements of Ali (2015) and Mohamed and Zainol (2017) were rejected, who pointed out that individual attention from the cabin crew contributes to passenger satisfaction.

H3: Heart-soothing characteristics and attitudes of the cabin crew have a positive impact on passenger satisfaction of full-service airlines.

This hypothesis is rejected in this study, since the heart-soothing characteristics and attitudes of the cabin crew is not a significant predictor for passenger satisfaction. Although in the correlation analysis the heart-soothing characteristics and attitudes of

the cabin crew were positively related with passengers' satisfaction, it did not confirm a significant effect on the passenger satisfaction level in the regression analysis. This result is the opposite of the findings of Tasci and Semrad (2016), who stated that the heart-soothing factor of hospitableness has a significant effect on customer satisfaction. Moreover, this result contradicts the study of Khatib (1998), which demonstrated that the provision of prompt service was significantly related to passenger satisfaction. Furthermore, the findings of Teng and Chang (2013) and Ariffin and Maghzi (2012) were rejected, since they stated that appropriate hosting quality through host-guest interactions can form guest's psychological comfort.

H4: Courtesy of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

According to the statistical results of the stepwise regression analysis, this hypothesis has been rejected. While the correlation analysis showed that courtesy of the cabin crew positively correlated with passenger's satisfaction and the regression analysis of the dimensions of airline hospitality showed that it is indeed a significant predictor for passenger satisfaction, the stepwise regression analysis revealed that the component is not a significant predictor. Therefore, the courtesy of the cabin crew has not a significant positive effect on passenger satisfaction of full-service airlines. This result is not consistent with the study of Ariffin and Nameghi (2013), in which they disclosed that courtesy is the core of airline hospitality in order to create passenger satisfaction. This result also does not correspond to the study of Ali (2015), who stated that staff courtesy has a positive significant effect on customer satisfaction. In addition, the findings of Wattanacharoensil and Yoopetch (2012) were rejected, since they stated that cabin crew's smiles and greetings positively influence the passengers.

H5: Appreciation of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

Based on the results of the regression analysis, this hypothesis was rejected as well. The appreciation of the cabin crew has no significant effect on passenger satisfaction of full-service airlines. Although appreciation did correlate slightly with passenger satisfaction in the correlation analysis, the in-flight service component turned out not

to be a significant predictor for passenger satisfaction from the regression analysis. This result rejects Ariffin and Nameghi's (2013) statement, who stated that some blend of thankfulness from the cabin crew and gratitude towards the passengers are key components in order to generate passenger satisfaction. Besides, this result does not match the study of Mohamed and Zainol (2017), who stated that wishing the passengers a friendly goodbye will perceive their experience as pleasant and enjoyable.

H6: Socialisation of the cabin crew has a positive impact on passenger satisfaction of full-service airlines.

This hypothesis was also rejected in this study, since the socialisation of the cabin crew has no significant effect on passenger satisfaction of full-service airlines. The correlation analysis showed that socialisation of the cabin crew did slightly positively correlated with passenger satisfaction, however the regression analysis revealed that it is not a significant predictor for passenger satisfaction. Therefore, Ariffin and Nameghi's (2013) statement has been rejected, since they stated that the cabin crew is expected to spend time with the passengers in the form of small talk in order to create passenger satisfaction. Furthermore, this result rejects the study of Sreenivasan et al. (2012), since they stated that socialisation of the cabin crew was the most important interactional service being discussed by airline passengers. In addition, the statement of Babbar and Koufteros (2008) has been rejected as well, since their study revealed that personal touch does substantially affect the satisfaction level of passengers on the overall service offered by an airline.

H7: The level of comfort positively influences passenger satisfaction of full-service airlines.

Based on the results of both the correlation and regression analysis, this hypothesis has been confirmed, which means that the level of comfort has a significant positive effect on passenger satisfaction of full-service airlines. Therefore, this result is entirely consistent with the study of Ariffin and Nameghi (2013), who stated that the greater the level of comfort, the more hospitable the service as perceived by airline passengers. The outcome of the correlation and regression analysis has also supported the previous findings of Forgas et al. (2010) and Paswan and Ganesh

(2005), in which they revealed that comfort as a perceived value component can lead to passengers' satisfaction. In addition, the findings of this study correspond to the study of Fisk et al. (2011) as well, who found that comfortable in-flight temperature will develop a positive overall evaluation of the in-flight experience.

However, the findings of this study reject the findings of Ahmadpour et al. (2014), since they revealed that there was no significant relationship between passenger satisfaction and the overall passenger comfort on long distance flights. In addition, the result of this study does not match Lashley's (2008) statement, who stated that it is not the tangible elements of the service which generates customer satisfaction, but it is the quality of the service treatment by the contact staff that contributes to customer satisfaction.

H8: Comfortable seats and legroom have a positive impact on passenger satisfaction of full-service airlines.

This hypothesis has been confirmed in this study, since the correlation and regression analysis revealed that comfortable seats and legroom is a significant predictor for passenger satisfaction of full-service airlines. This outcome is consistent with the study of Sezgen et al. (2019), in which they stated that comfortable seats and legroom influences in-flight passenger satisfaction within full-service airlines. Besides, the findings of Koklic et al. (2017) were confirmed as well, since they found a strong relationship between customer satisfaction and airline tangibles. Furthermore, the findings of Richards et al. (1978), Vink et al. (2012) and Ban and Kim (2019) were supported, since they stated that comfortable seats and legroom are positively related to passenger satisfaction.

H9: The availability of a wide range of food and beverages choices on-board has a positive impact on passenger satisfaction of full-service airlines.

The results of the stepwise regression analysis have rejected this hypothesis, since it turned out that the availability of a wide range of food and beverages choices on-board is not a significant predictor for passenger satisfaction of full-service airlines. While the correlation and regression analysis of the covariates showed that the in-flight service component has indeed a significant effect on passenger satisfaction,

the stepwise regression analysis has not confirmed this. Therefore, the research results rejected the findings of Ali (2015) and Barsky and Labagh (1992), who pointed out that food and beverages products are significant determinants of customer satisfaction. Moreover, the findings of Ban and Kim (2019) and Park et al. (2020) have been rejected, since they stated that food and beverages had impact on customer satisfaction of airlines. Eventually, the results of this study has not proven the study of Zahari et al. (2011), stating that in-flight meals predicts passengers' level of satisfaction.

As described above, two out of nine hypotheses have been confirmed in this study. In table 23 below, the evaluation of the hypotheses is presented in one overview.

Table 23: Evaluation of hypotheses

Hypotheses		Evaluation
H1: Heart-warming	→ Passenger satisfaction	x
H2: Heart-assuring	→ Passenger satisfaction	x
H3: Heart-soothing	→ Passenger satisfaction	x
H4: Courtesy	→ Passenger satisfaction	x
H5: Appreciation	→ Passenger satisfaction	x
H6: Socializing	→ Passenger satisfaction	x
H7: Comfort	→ Passenger satisfaction	✓
H8: Comfortable seats and legroom	→ Passenger satisfaction	✓
H9: Food and beverages	→ Passenger satisfaction	x

6.3 Other findings

The outcomes from the ANOVA test revealed that the results of this study within the dimensions "Heart-assuring" and "Comfortable seats and legroom" were influenced by respondents' gender. This outcome is supported by Aksoy, Atilgan and Akinci (2003), who found that passenger expectations regarding in-flight activities and cabin features are influenced by gender. In addition, the study of Kurtulmuşoğlu, Can, Pakdil and Tolon (2018) revealed that comfortable chairs, seat spaces and legroom were determined to be the three most important criteria for female passengers, while male passengers ranked these service features in the seventh and ninth place. Moreover, the ANOVA test revealed that within the dimension "Food and beverages" the results of this study were influenced by respondents' age. This result is confirmed by the study of Aksoy et al. (2013), who revealed that age was found to have a

significant effect on passengers' expectations regarding food and beverage services. The ANOVA test also revealed that the results of this study within the dimensions "Courtesy" and "Passenger satisfaction of full-service airlines" are significantly influenced by respondents' continent of origin. This outcome has supported the previous findings of Khatib (1998), who found that passengers from different nationalities showed significantly different levels of satisfaction. Besides, the findings of Punel, Hassan and Ermagun (2019) were confirmed as well, since they found that the geographical regions shaped by the country of residence of passengers impact travel experience, perception, and evaluation of airline services.

6.4 Answer to the problem statement

To what extent do the in-flight service components influence passenger satisfaction of full-service airlines?

By making use of the different analyses described in chapter 5, an answer to the problem statement has been formulated. Overall, the findings of this study revealed that the in-flight service components "Comfort" and "Comfortable seats and legroom" had significant positive influences on passenger's satisfaction of full-service airlines. Among them, the level of comfort has the most significant effect on passenger satisfaction of full-service airlines, in which respondents showed their care for a good rest of sleep during the flight and comfortable in-flight temperature. In addition, comfortable seats and legroom had a positive influence on passenger satisfaction, since having a screen available to watch movies and the availability of a neck pillow and blanket were important for the respondents. Besides, respondents showed their care for sufficient legroom and a comfortable seat during the flight. This result is well proved to the study of Ban and Kim (2019), in which they stated seat comfort has a significant impact on passenger satisfaction. Furthermore, the results of this study are consistent with the study of IATA (2013), in which they demonstrated that watching in-flight entertainment and sleeping are the most important activities during long-distance flights.

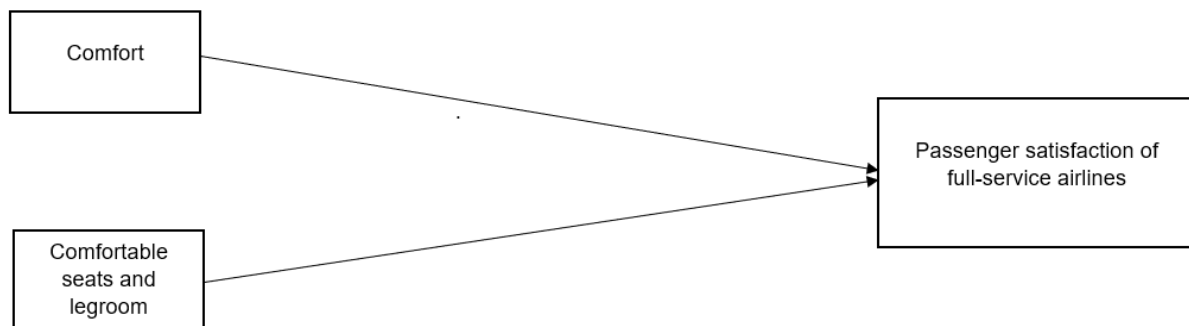
6.5 Review of conceptual model

This study is based on the conceptual model presented in chapter 3 (figure 1). After performing the various analyses in chapter 5, it turns out that not all the dimensions

from the conceptual model actually had significant influences on passenger satisfaction of full-service airlines. Instead of nine dimensions, there are only two dimensions that positively influence the passenger satisfaction. Because of this, an adjusted conceptual model has been made in order to reflect the findings of this study. As shown in figure 5 below, two independent variables actually have significant effects on the dependent variable passenger satisfaction of full-service airlines, which are the in-flight service components “Comfort” and “Comfortable seats and legroom”.

The findings of this study are based on both the tangible and intangible in-flight service components on long-distance flights within full-service airlines, and investigated the significant relationships both mutually and with the dependent variable passenger satisfaction. By including both types of in-flight service components, this study has covered almost all aspects that have been researched in previous studies, and gives a clear picture of the overall in-flight service on-board.

Figure 5: Adjusted conceptual model



6.6 Limitation of findings

The findings of this study have a number of limitations. First, due to the coronavirus breakout it was not possible to conduct the survey on Schiphol Airport and ask passengers whether they want to participate in this study, since the airport was closed and it was no longer allowed to fly. Therefore, it was not possible to select the participants randomly, which decreases the degree of unbiased representation of the sampling population. Furthermore, this was also detrimental to the data collection

procedure, since it was limited. Due to this limitation, only 173 respondents were approached who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam, and currently reside in the Netherlands. Due to this limited sample size and the fact that 75% of the respondents were between 21 and 30 years old, the findings of this study cannot well represent all passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam.

In addition, this study is more focused on the in-flight service in economy class, since 91% of the respondents stayed in economy class during the flight. Therefore, this study does not provide a general picture of the in-flight service components on a long-distance flight of a full-service airline, but it mainly gives a picture of the components in the economy class. The results of the study are also influenced by this, as passengers in first class/comfort class and business class receive a more extensive service from the cabin crew, and have more comfortable seats and legroom at their disposal.

Besides, the results of this study showed there were significant differences in the passenger satisfaction of full-service airlines for passengers with another continent of origin. Although all passengers currently reside in the Netherlands, 22% of the respondents came from continents other than Europe. Therefore, the findings of this study cannot well represent the population, it evaluated passengers from all continents and it turned out that the results of this study were influenced by respondents' continent of origin.

Finally, three items were deleted from the original data in the reliability analysis. Since two scales only had two items left, this had led to a loss in criterion validity and reliability. According to the study of Raykov (2008) deleting items from a scale will lead to lower criterion validity as well as reliability compared to an initial scale. In addition, the findings of Eisinga, Grotenhuis and Pelzer (2013) revealed that more items lead to better construct representation and the main way to make measures more reliable is to increase the number of items. Therefore, the influence of the three removed items was not included in this study.

7. Conclusions & recommendations

Based on the findings of this study, this chapter summarizes the main findings and presents recommendations for both the industry and future research.

7.1 Conclusions

In the full-service airline industry, the success of an airline depends on passenger satisfaction. Passengers tend to evaluate airlines based on their level of satisfaction with the in-flight service and the in-flight hospitality experience is becoming a key differentiator. Since very few studies have been conducted to understand the influence of hospitality in the airline industry, it is useful for full-service airlines to know which in-flight service components influences the passenger satisfaction. In order to explore this, the main purpose of this study was to explore which in-flight service components influences the passenger satisfaction according to passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam.

Overall, it can be concluded that the purpose of this study has been achieved, since two out of nine hypotheses have been confirmed. This study has found that the level of comfort and comfortable seats and legroom positively influence the passenger satisfaction of full-service airlines. More specifically, this study found that a good rest of sleep during the flight and comfortable in-flight temperature positively influence the passenger satisfaction. In addition, having a screen available to watch movies and the availability of a neck pillow and blanket were reliable components for the increase of passenger's satisfaction. Besides, this study found that sufficient legroom and a comfortable seat during the flight had a positive impact on passenger satisfaction of full-service airlines. These findings reflect that passengers consider their comfort as the most important component during their flight.

The problem statement of this study has been answered sufficiently, since all the hypotheses have been tested in a reliable manner. However, the research has a limited outcome, since only two of the nine hypotheses from the original conceptual model (see figure 1) were confirmed. Instead of the hospitableness of cabin crew's performance during the flight, only the comfort related in-flight service components

actually influences passenger satisfaction of full-service airlines in this study. These findings are presented in the adjusted conceptual model in figure 5. Since this study integrated both the tangible and intangible in-flight service components on long-distance flights within full-service airlines, the findings of this study gives a clear picture of the overall in-flight service on-board compared to previous conducted studies. Therefore, the findings of this study are useful for full-service airlines flying from Schiphol Airport in Amsterdam.

7.2 Recommendations for practice

Based on the findings of this study, various recommendations can be made to full-service airlines flying long-distance flights from Schiphol Airport in Amsterdam. First, because the majority of passengers who have taken a long-distance flight of a full-service airline from Schiphol Airport in Amsterdam stayed in economy class, it is wise for full-service airlines to focus more on the in-flight service to passengers in economy class.

Second, since the findings of this study revealed that the level of comfort positively influence the passenger satisfaction, it is recommended to full-service airlines to make sure that during the flight the in-flight temperature is comfortable to all passengers by making sure it is neither too cold nor too hot on-board the aircraft. Besides, it is recommended to provide the passengers a good rest on-board the aircraft and make sure they are physically and emotionally comfortable while flying with them.

Third, since the findings stated that comfortable seats and legroom have a positive impact on passenger satisfaction of full-service airlines, it is recommended to full-service airlines to make sure that all seats on-board the aircraft are comfortable to the passengers by providing them a neck pillow and blanket. In addition, it is recommended to provide each seat on-board the aircraft with a screen, so passengers are able to watch movies and make use of in-flight entertainment during their flight. Besides, passengers find it important to have sufficient legroom. Therefore, for full-service airlines it is worth considering to increase the legroom

between seats in economy class, and to design more comfortable cabin interiors in order to enhance passenger comfort.

Instead of focussing on the hospitableness of cabin crew performance during the flight, full-service airlines are recommended to improve the comfort on-board the aircraft, since this will lead to more satisfied passengers. The greater the level of comfort, the more hospitable the service as perceived by passengers, and the more satisfied they are with the full-service airline.

7.3 Recommendations for future research

Since the findings of this study have a number of limitations, a couple of recommendations can be made for future research within this field. First, in order to ensure the degree of unbiased representation of the sampling population, future research can make use of simple random sample by selecting the participants randomly. In addition, future research should ensure a larger sample size and a fair distribution in age category in the sampling population, which ensures that the findings of the study should well represent the whole sample population.

Furthermore, in order to provide a general picture of the in-flight service components, future research should not only focus on passengers who stayed in economy class, but should also focus on passengers who stayed in first class/comfort class and business class. Moreover, the results of this study showed there were significant differences in the passenger satisfaction of full-service airlines for passengers with another continent of origin. For future research it is therefore useful to analyse the data based on the different continents of origin from the passengers. Finally, in order to make the scales measures more reliable, it is recommended to increase the number of items per scale, since in this study two scales had only two items, which had led to a loss in criterion validity and reliability.

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Appendices

Appendix I: Research questionnaire

Research into the influence of in-flight service components on passenger satisfaction

This survey was made to examine to what extent the in-flight service components of full-service airlines influences the passenger satisfaction on long distance flights. This research is part of a Master Thesis of a student of NHL Stenden Leeuwarden. It will take about 5 minutes to complete the survey and your answers will be processed anonymously.

Thank you in advance for your time and completing the survey.

START SURVEY

1. How often do you fly with a full-service airline? (long distance flights only)

- ☐ Once a week or more ☐ 2-3 times a month ☐ Once a month ☐ A few times a year ☐ Once a year ☐ Once every few years

2. The last time you flew with a full-service airline, what was the purpose of your travel?

- ☐ Business ☐ Leisure ☐ Both

3. Who was your company during this flight?

- ☐ Only myself ☐ My colleague(s) ☐ My partner ☐ Family/friends

4. Which seat class did you stay during the flight?

- ☐ Economy class ☐ First class/Comfort Class ☐ Business class

5. You will be presented with statements based on in-flight service components of full-service airlines. Please fill in to what extent you agree or disagree with the following statements **based on your experience of the last time you flew with a full-service airline.**

Statement	1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
- When boarding the plane, the cabin crew offered me a warm welcoming	☐	☐	☐	☐	☐
- During the flight the cabin crew interacted with me in a polite manner	☐	☐	☐	☐	☐
- During the flight the cabin crew treated me with full respect	☐	☐	☐	☐	☐
- During the flight the cabin crew was constantly friendly to me	☐	☐	☐	☐	
- During the flight the cabin crew made an effort to provide me personal attention	☐	☐	☐	☐	☐
- During the flight the cabin crew responded promptly to my requests	☐	☐	☐	☐	☐
- During the flight the cabin crew ensured my safety	☐	☐	☐	☐	☐
- During the flight the cabin crew offered me any kind of assistance	☐	☐	☐	☐	☐
- During the flight the cabin crew engaged with me in a "small talk"	☐	☐	☐	☐	☐
- During the flight the cabin crew ensured that I was comfortable while sitting	☐	☐	☐	☐	☐
- During the flight the cabin crew always maintained eye contact with me during conversations	☐	☐	☐	☐	☐
- During the flight the cabin crew showed natural smiling faces almost all the time	☐	☐	☐	☐	☐
- During the flight the cabin crew made an effort to spend time with me	☐	☐	☐	☐	☐
- During the flight the cabin crew offered me some kind of gifts or token of appreciation	☐	☐	☐	☐	☐
- After landing, the cabin crew wished me a friendly goodbye	☐	☐	☐	☐	☐
- After landing, the cabin crew sincerely thanked me for flying with the airline	☐	☐	☐	☐	☐
- After landing, the cabin crew invited me to fly with the airline again in the future	☐	☐	☐	☐	☐
- During the flight I was able to get a good rest of sleep	☐	☐	☐	☐	☐
- During the flight the in-flight temperature was comfortable to me	☐	☐	☐	☐	☐
- During the flight my seat was comfortable	☐	☐	☐	☐	☐
- During the flight I had sufficient legroom	☐	☐	☐	☐	☐
- During the flight, I had a neck pillow and blanket at my disposal	☐	☐	☐	☐	☐
- During the flight I had a screen at my disposal to watch movies	☐	☐	☐	☐	☐
- A wide range of different food and beverage choices were available during the flight	☐	☐	☐	☐	☐

Statement	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
6. Based on my last experience, my overall satisfaction with the full-service airline is...	☐	☐	☐	☐	☐
7. What is your gender?					
☐	☐	☐			
Male	Female	Other			
8. What is your age?					
☐	☐	☐	☐	☐	☐
<20	21 to 30	31 to 40	41 to 50	51 to 60	61 +
9. From which continent are you from?					
☐	☐	☐	☐	☐	☐
Asia	Africa	North America	South America	Europe	Australia

Appendix II: Reliability Analysis (Cronbach's Alpha)

1. Heart-warming

Reliability Statistics

Cronbach's Alpha	N of Items
.866	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
When boarding the plane, the cabin crew offered me a warm welcoming	12.98	4.046	.513	.899
During the flight the cabin crew interacted with me in a polite manner	13.05	3.021	.800	.793
During the flight the cabin crew treated me with full respect	13.05	2.898	.827	.780
During the flight the cabin crew was constantly friendly to me	13.16	3.098	.743	.818

2. Heart-assuring

Reliability Statistics

Cronbach's Alpha	N of Items
.617	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight the cabin crew made an effort to provide me personal attention	8.03	1.447	.439	.504
During the flight the cabin crew responded promptly to my requests	7.65	1.485	.520	.375
During the flight the cabin crew ensured my safety	7.29	2.011	.335	.633

3. Heart-soothing

Reliability Statistics

Cronbach's Alpha	N of Items
.644	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight the cabin crew offered me any kind of assistance	6.37	2.897	.383	.637
During the flight the cabin crew engaged with me in a "small talk"	7.35	2.007	.474	.530
During the flight the cabin crew ensured that I was comfortable while sitting	6.54	2.285	.526	.446

4. Courtesy

Reliability Statistics

Cronbach's Alpha	N of Items
.806	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight the cabin crew interacted with me in a polite manner	12.17	3.896	.706	.722
During the flight the cabin crew treated me with full respect	12.17	3.819	.707	.719
During the flight the cabin crew always maintained eye contact with me during conversations	12.62	3.899	.482	.835
During the flight the cabin crew showed natural smiling faces almost all the time	12.63	3.804	.632	.752

5. Appreciation

Reliability Statistics

Cronbach's Alpha	N of Items
.594	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight the cabin crew offered me some kind of gifts or token of appreciation	12.42	4.233	.163	.710
After landing, the cabin crew wished me a friendly goodbye	10.50	4.705	.400	.536
After landing, the cabin crew sincerely thanked me for flying with the airline	10.77	3.687	.569	.389
After landing, the cabin crew invited me to fly with the airline again in the future	11.10	2.984	.504	.406

6. Socialising

Reliability Statistics

Cronbach's Alpha	N of Items
.580	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight the cabin crew engaged with me in a "small talk"	7.01	1.831	.512	.261
During the flight the cabin crew interacted with me in a polite manner	5.42	3.327	.226	.674
During the flight the cabin crew made an effort to spend time with me	7.14	2.020	.463	.355

7. Comfort

Reliability Statistics

Cronbach's Alpha	N of Items
.662	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight I was able to get a good rest of sleep	6.84	2.427	.561	.447
During the flight the in-flight temperature was comfortable to me	6.50	3.228	.529	.496
During the flight the cabin crew ensured that I was comfortable while sitting	6.16	4.043	.365	.694

8. Comfortable seats and legroom

Reliability Statistics

Cronbach's Alpha	N of Items
.602	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
During the flight my seat was comfortable	11.57	4.014	.448	.477
During the flight, I had a neck pillow and blanket at my disposal	10.72	4.655	.332	.569
During the flight I had a screen at my disposal to watch movies	10.36	5.175	.352	.559
During the flight I had sufficient legroom	11.49	4.042	.413	.508

Appendix III: Correlation analysis

		Heart-warming	Heart-assuring	Heart-soothing	Courtesy	Appreciation	Socializing	Comfort	Comfortable seats and legroom	Food and beverages	Passenger satisfaction of full-service airlines
Heart-warming	Pearson Correlation	1	,547**	,480**	,865**	,468**	,316**	,311**	,327**	,474**	,511**
	Sig. (2-tailed)		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Heart-assuring	Pearson Correlation	,547**	1	,634**	,580**	,373**	,572**	,422**	,451**	,458**	,419**
	Sig. (2-tailed)	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Heart-soothing	Pearson Correlation	,480**	,634**	1	,541**	,329**	,815**	,340**	,294**	,359**	,396**
	Sig. (2-tailed)	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Courtesy	Pearson Correlation	,865**	,580**	,541**	1	,420**	,419**	,323**	,345**	,500**	,526**
	Sig. (2-tailed)	0,000	0,000	0,000		0,000	0,000	0,000	0,000	0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Appreciation	Pearson Correlation	,468**	,373**	,329**	,420**	1	,271**	,162*	,197**	,282**	,216**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000		0,000	0,033	0,009	0,000	0,004
	N	173	173	173	173	173	173	173	173	173	173
Socializing	Pearson Correlation	,316**	,572**	,815**	,419**	,271**	1	,210**	,193*	,266**	,248**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000		0,006	0,011	0,000	0,001
	N	173	173	173	173	173	173	173	173	173	173
Comfort	Pearson Correlation	,311**	,422**	,340**	,323**	,162*	,210**	1	,414**	,352**	,437**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,033	0,006		0,000	0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Comfortable seats and legroom	Pearson Correlation	,327**	,451**	,294**	,345**	,197**	,193*	,414**	1	,356**	,419**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,009	0,011	0,000		0,000	0,000
	N	173	173	173	173	173	173	173	173	173	173
Food and beverages	Pearson Correlation	,474**	,458**	,359**	,500**	,282**	,266**	,352**	,356**	1	,420**
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000		0,000
	N	173	173	173	173	173	173	173	173	173	173
Passenger satisfaction of full-service airlines	Pearson Correlation	,511**	,419**	,396**	,526**	,216**	,248**	,437**	,419**	,420**	1
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,004	0,001	0,000	0,000	0,000	
	N	173	173	173	173	173	173	173	173	173	173

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

* . Correlation is significant at the 0.05 level (2-tailed).

Appendix IV: Regression analysis

1. Hospitableness Scale → Passenger satisfaction of full-service airlines

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.547 ^a	.299	.286	.556	.299	24.007	3	169	.000

a. Predictors: (Constant), Heart-soothing, Heart-warming, Heart-assuring

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	22.271	3	7.424	24.007	.000 ^b
	Residual	52.261	169	.309		
	Total	74.532	172			

a. Dependent Variable: Passenger satisfaction of full-service airlines

b. Predictors: (Constant), Heart-soothing, Heart-warming, Heart-assuring

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.257	.340		3.697	.000
	Heart-warming	.420	.088	.376	4.787	.000
	Heart-assuring	.143	.100	.127	1.429	.155
	Heart-soothing	.124	.079	.134	1.580	.116

a. Dependent Variable: Passenger satisfaction of full-service airlines

2. Airline hospitality → Passenger satisfaction of full-service airlines

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.598 ^a	.357	.342	.534	.357	23.337	4	168	.000

a. Predictors: (Constant), Comfort, Appreciation, Socializing, Courtesy

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	26.621	4	6.655	23.337	.000 ^b
	Residual	47.910	168	.285		
	Total	74.532	172			

a. Dependent Variable: Passenger satisfaction of full-service airlines

b. Predictors: (Constant), Comfort, Appreciation, Socializing, Courtesy

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.640	.309		5.311	.000
	Courtesy	.450	.078	.434	5.787	.000
	Appreciation	-.016	.066	-.017	-.246	.806
	Socializing	.006	.050	.008	.123	.903
	Comfort	.195	.043	.298	4.545	.000

a. Dependent Variable: Passenger satisfaction of full-service airlines

3. Key drivers that influences in-flight passenger satisfaction → Passenger satisfaction of full-service airlines

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.509 ^a	.259	.251	.570	.259	29.744	2	170	.000

a. Predictors: (Constant), Food and beverages, Comfortable seats and legroom

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.320	2	9.660	29.744	.000 ^b
	Residual	55.212	170	.325		
	Total	74.532	172			

a. Dependent Variable: Passenger satisfaction of full-service airlines

b. Predictors: (Constant), Food and beverages, Comfortable seats and legroom

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.056	.267		7.697	.000
	Comfortable seats and legroom	.306	.070	.308	4.360	.000
	Food and beverages	.225	.051	.310	4.391	.000

a. Dependent Variable: Passenger satisfaction of full-service airlines

4. Stepwise regression

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.511 ^a	.261	.256	.568	.261	60.329	1	171	.000
2	.604 ^b	.365	.354	.529	.104	13.906	2	169	.000
3	.632 ^c	.399	.381	.518	.034	4.726	2	167	.010

a. Predictors: (Constant), Heart-warming

b. Predictors: (Constant), Heart-warming, Comfort, Courtesy

c. Predictors: (Constant), Heart-warming, Comfort, Courtesy, Comfortable seats and legroom, Food and beverages

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	19.437	1	19.437	60.329	.000 ^b
	Residual	55.094	171	.322		
	Total	74.532	172			
2	Regression	27.223	3	9.074	32.416	.000 ^c
	Residual	47.309	169	.280		
	Total	74.532	172			
3	Regression	29.757	5	5.951	22.197	.000 ^d
	Residual	44.775	167	.268		
	Total	74.532	172			

a. Dependent Variable: Passenger satisfaction of full-service airlines

b. Predictors: (Constant), Heart-warming

c. Predictors: (Constant), Heart-warming, Comfort, Courtesy

d. Predictors: (Constant), Heart-warming, Comfort, Courtesy, Comfortable seats and legroom, Food and beverages

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.569	.323		4.865	.000
	Heart-warming	.570	.073	.511	7.767	.000
	(Constant)	1.399	.302		4.626	.000
2	Heart-warming	.204	.137	.183	1.490	.138
	Courtesy	.285	.128	.274	2.227	.027
	Comfort	.191	.042	.292	4.499	.000
3	(Constant)	1.043	.323		3.232	.001
	Heart-warming	.175	.134	.157	1.301	.195
	Courtesy	.219	.128	.211	1.720	.087
	Comfort	.140	.045	.214	3.122	.002
	Comfortable seats and legroom	.168	.068	.169	2.450	.015
	Food and beverages	.076	.052	.105	1.447	.150

a. Dependent Variable: Passenger satisfaction of full-service airlines