

Passenger Satisfaction with the Quality of Service Offered at the Bandaranaike International Airport (BIA)

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Authors' contributions

This work was carried out in collaboration between both authors. Author DGEKPKD designed the study, managed the literature, collected data and performed analysis. Author EAGS managed the literature and performed the statistical analysis and wrote the first draft of the manuscript. Both authors read and approved the final manuscript.

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ABSTRACT

Aim: Bandaranaike International Airport (BIA) is important in the development of the Sri Lankan economy. To remain competitive in the service sector it is essential to focus more on improving service quality as it directly creates greater customer satisfaction. In respect of international airports satisfied passengers often revisit a destination thus increasing micro and macro level income and profitability. Hence, satisfied and loyal passengers are an important factor in remaining competitive among international airports. Although there is ample research that explores service quality and passenger satisfaction with airports, research is sparse in regard to Sri Lanka. Hence, the aim of this study is to identify the most important service quality dimensions influencing passenger satisfaction at BIA and to examine the relationship between each SERVQUAL dimension on passenger satisfaction.

Place and Duration of Study: Bandaranaike International Airport (BIA) between April to July 2019.

Methodology: The sample for this study consisted of 150 passengers at BIA and a five-point Likert scale questionnaire was developed for this study based on the SERVQUAL model to analyse the

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impact of the five dimensions (reliability responsiveness, assurance, empathy and tangibility) of service quality at BIA. A quantitative approach was used and questionnaires were distributed by hand as well as by electronically using Facebook, Messenger, WhatsApp, Viber and Email. The data was analysed using SPSS Version 23.0.

Results: The regression model confirmed that tangibility, assurance and empathy contributed to passenger satisfaction. The findings of this study could be used by passengers, researchers, service providers, civil aviation authorities and other decision makers for their decision-making purposes.

Keywords: Service quality; SERVQUAL model; passenger satisfaction; BIA - Sri Lanka.

1. INTRODUCTION

Airports play a key role in the transport of people and goods between regions, in developing international commerce and connecting with other modes of transportation generating income among many economies in the world as stated on www.icao.org. Therefore, every airport expects to attract many passengers to its destination who would like to revisit the airport [1] which adds to national income and thus contributes to the economic development of the country. In the face of competition in the international travel industry, airports now compete with each other to win this game as most managers have now realised that the quality of the services offered by an airport significantly influences airport reuse and choosing to revisit a destination [2]. For example, Hamad International Airport Doha-Qatar, Tokyo International Airport, Athens International Airport, Afonso Pena International Airport, Brazil, Singapore Changi Airport, Incheon International Airport, Munich Airport and Hong Kong International Airport have gained a high reputation through better service quality [3].

1.1 Research Gap

The literature highlights that when service quality drops, passenger arrivals are also significantly affected. Loyal passengers would like to revisit the same destination based on their favourable previous experiences [4]. Hence, improving service quality has become a major concern of many governments and public authorities. In Sri Lanka, Bandaranaike International Airport (BIA) is the main international gateway to the island renowned for its tourism with a wide range of attractions on offer and especially the warm hospitality blended with Sri Lankan culture. Improving passenger satisfaction has been identified as a main objective of BIA [5,6]. However, over the past years, customer

complaints about poor BIA services [5,6] and the fact that BIA identified as the 10th worst airport in Asia attracted much public attention. Service quality offered to passengers is very important as it begins at the airport which is the first place where tourists interact with the local people when they enter a country. Hence, today's airport managers are very keen on understanding the perceptions of passengers about their experience of the service quality they perceive at the airport [7]. Therefore, an in depth understanding of passenger perceptions continues to dominate airport service quality research [7,8].

1.2 Bandaranaike International Airport (BIA)

The Air Transport Research Society (ATRS) mentions about Sri Lanka's four main airports - Bandaranaike International Airport, Mattala Rajapaksa International Airport, Colombo (Ratmalana) Airport, and Batticaloa Airport. Of these, BIA and Mattala handle only international passengers and cargo. BIA is located in Katunayake in Colombo district, 30 kilometres north of Colombo City [5].

BIA is managed by Airport and Aviation Services (Sri Lanka) Ltd (AASL) under the Ministry of Civil Aviation. Its vision is to become the most efficient and friendliest aviation hub in the Asian region [5]. With the expectation of enhancing the service quality of BIA, in 2014 September the BIA terminal expansion project costing US\$ 560mn was started to achieve the vision of BIA to "make BIA a passenger tourist hub of the Asian region by increasing the transit passenger ratio to 1:4 by 2016 [5]. To improve the service quality received by the passengers, BIA also initiated resorts and associated property development projects in collaboration with the China Harbour Engineering Company Limited. This will include a conference facility, meeting rooms and an amusement area.

In addition, a shopping arcade is planned with segregated shopping facility facilities in the newly acquired land opposite the arrival terminal. A new air traffic management system was also introduced recently at BIA with the expectation of improving its service quality.

1.3 Significance of the Study

At present the national carrier of Sri Lanka is Sri Lankan Airlines, which also has taken several measures to enhance the satisfaction of the passengers served by BIA. For example, Sri Lankan Airlines joined the "One World" Alliance in July 2014 to enhance the product accessibility of the passengers and to offer passengers the opportunity to fly over 1800 world destinations worldwide on a single ticket [8]. With all these investments it's worth understanding the perceptions of passengers about the service quality offered by BIA to enable the decision makers to improve the performance of BIA.

At present, service organizations are becoming the leading income generating industry in the world. Understanding customer perceptions of service quality helps to develop strategies that lead to better customer satisfaction [8,9]. Through this study we can fathom the satisfaction level of passengers about the service quality at BIA. This understanding will help the Sri Lankan government and BIA managers prioritize the important dimension of service quality and use the limited national resources to maximise the passenger satisfaction.

BIA was ranked 25th out of the 37 Asian airports surveyed. The airport productivity index is measured under the outputs of aircraft movement, passengers, cargo tonnage, and non-aeronautical revenue output. Labour, other non-capital inputs and runways, terminal size as well as the number of gates are considered as inputs. In improving passenger satisfaction to compete with other international airports the most critical factor is the success and efficiency of airport operations. The service quality expectations of passengers are diverse based on their nationality and demographic characteristics. To find better solutions, BIA has to identify the requirements and expectations of passengers and to know the service quality perceived at BIA. This aspect has only been sparsely addressed in the literature.

Hence this study aims *"to examine the service quality dimensions influencing passenger satisfaction at BIA"*.

Even though there are ample studies examining the service quality and passenger satisfaction at airports, studies carried out in Sri Lanka are sparse. The need to examine this problem is crucial at this moment. It is expected that the findings of this study will help passengers, researchers, service providers, civil aviation authorities and other decision makers to experience and promote better service offerings at BIA.

1.4 Research Objectives

1. To identify the most important service quality dimensions influencing passenger satisfaction at BIA.
2. To examine the relationship between the five service quality dimensions and passenger satisfaction with the services offered at BIA.

1.5 Literature Review

An excellent ground service would enable the airport management to quickly identify the problems and expectations of its passengers. Airport management always tries to improve their services whilst understanding the perceived expectations and perceived performance of these services. In the available literature there are different measurements for the collection and analysis of data to understand passenger satisfaction with the airport service quality. However, this study focuses mainly on the popular SERVQUAL model in measuring customer perceptions of service quality.

1.6 SERVQUAL Model

The SERVQUAL model is a multidimensional study tool aimed at capturing consumer, expectations and perceptions along the five dimensions that are thought to reflect the quality of a service [10]. Service quality is defined as measures the difference between what is expected from a service encounter and the perception of the actual service encounter [10]. The model defines the main dimensions (or elements) of service quality; proposes a service quality measurement scale (SERVQUAL) and indicates possible causes of service quality issues. SERVQUAL has five dimensions, namely, Reliability, Responsiveness, Assurance, Empathy, and Tangibility, and deals with customers' perceptions regarding the given service delivery and customer's expectations regarding the given service delivery. Table 1

explains the definitions of independent variables as explained by Parasuraman et al. [10]. SERVQUAL is widely used in the leisure and hospitality sector (for example, [11]) especially in the airport sector [12,13]. Interestingly, [12] confirmed that the dimensions in the SERVQUAL model are appropriate for measuring the service quality of international airports.

1.7 Dependent Variable - Passenger Satisfaction

Customer satisfaction can be identified as an emotional response. In this scenario, the customer will compare his expected values, needs and outcomes with a particular object or service [14]. When a customer is pleased with a specific product or service it satisfies him/her. Kotler and Keller [15] defined customer satisfaction as an individual’s feeling of pleasure arising from comparing the actual result with the expectations of a certain product or service. When customers are satisfied with the service they receive they intend to purchase it again

thereby improving the firm’s profitability whilst customers recommend this brand to others [16].

When it comes to the airline industry, the concept of passenger satisfaction can be explained as the satisfaction that a passenger receives through the fulfilment of their expected needs by the particular aviation service provider. The rapid growth of the tourism industry and the accelerating pace of international competition within this industry, it is becoming crucial for countries and their governments to further improve their local and international customer satisfaction. Especially in the tourism industry, the emergence, survival, development and failure of ventures depend heavily upon customer satisfaction. In this regard, it is important to understand the passenger dis-satisfiers and passenger satisfiers when using airports [17] because when passengers are well satisfied about the quality of services and products they have consumed at the airport are most likely to revisit the same destination again.

Table 1. Definitions of the independent variables [10]

| Variable | Definition |
|----------------|---|
| Reliability | Ability to perform the promised service dependably and accurately |
| Assurance | Knowledge and courtesy of employees and their ability to inspire trust and confidence |
| Tangibles | Physical facilities, equipment, and appearance of personnel |
| Empathy | Caring, individualized attention the firm provides its customers |
| Responsiveness | Willingness to help customers and provide prompt service |

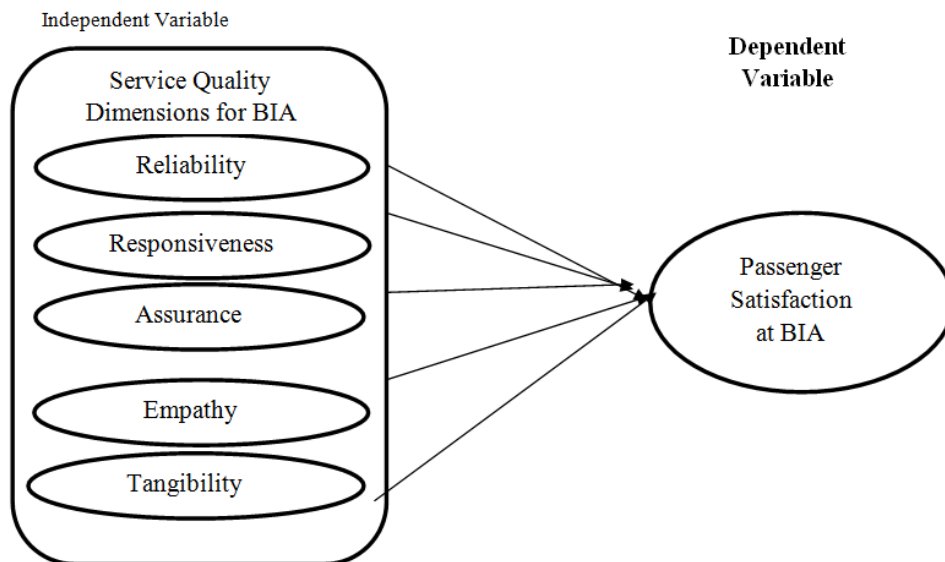


Fig. 1. Conceptual framework of the study

2. METHODOLOGY

2.1 Hypothesis Development

Reliability: The capacity to execute services consistently and precisely

Reliability is the feature of being accurate or reliable. Reliability shows that staff are prepared to deliver services correctly, continuously and reliably [18,19]. Reliability also implies that the services are properly conducted and described. Furthermore, reliability implies that the organisation keeps its commitments, trustworthiness towards the quality of the workers' services to prevent anything from going wrong. It acts as a main element in the production and services industries that will affect customer behaviour towards brand image and their buying intentions. Reliability is identified as one of the most significant factors in ensuring the satisfaction and discontent of both clients [18].

The general idea is that managers and employees of a firm should provide a reliable service whilst reducing the unreliable customer services to achieve high customer satisfaction [18]. Thus, many organisations include reliability in stating their mission statement and the service standard to be delivered [20]. When the brand image is linked to providing a reliable service it helps to improve the firm's brand image. This led to confirm reliability as an important dimension for creating consumer judgement [18,21,22].

This leads the study to hypothesise the relationship between reliability and passenger satisfaction as:

H₁: There is a positive relationship between Reliability and Customer Satisfaction.

Responsiveness: Willingness to assist and react to consumer desires

The next independent variable of this model is responsiveness. The significance of responsiveness is the organisation's desire to assist customers, provide a timely and good customer service, resolve problems that customers confront, and handle complaints [23]. In the SERVQUAL model responsiveness is a very essential variable to create service quality [18]. In addition, an excellent customer service is a component of responsiveness. The responsiveness of employees takes customer service a step further [21,24]. By using

technology, including websites, email and telephone systems, it allows clients to rapidly obtain the data they require [24]. A service that prioritises responsiveness fulfils the appropriate requirements or objectives of customers. Customer's objectives can be diverse based on the characteristics of the customer and the situation [25]. They may include broad-level requirements such as status requirements, stimulation, belonging, or individuality; therefore, responsiveness can be identified as an essential dimension for all staff members in the organization for providing the best service quality for customers.

H₂: There is a positive relationship between Responsiveness and Customer Satisfaction.

Assurance: Employee's capacity to inspire trust and loyalty

Assurance is another dimension included in the SERVQUAL model. Assurance demonstrates the understanding of the staff and how staff conveys trust and loyalty towards customers [18]. Assurance is also known as the organisation providing its clients with a reliable and safe service [26]. Assurance derives from the service's competence, courtesy, legitimacy and safety. Also, there is an important connection between customer perception of service quality and brand image and assurance has a beneficial effect on the picture of the brand [27]. The trust and loyalty of employees express the quality of service [28].

H₃: There is a positive relationship between Assurance and Customer Satisfaction.

Empathy: An individualized service is provided

Empathy is derived from the availability, interaction and comprehension of the five dimensions of the SERVQUAL model. Empathy stems from the approachability, interaction and ability to understand [18]. In addition, accessible services supplied by organizations are also known as empathy in meeting or identifying particular customer requirements [26]. Faithful customers value empathy and honesty because they are dedicated to establishing a feeling of interactive fairness [29]. The organization's individualized attention to the needs of the customer is also considered as empathy [21,30]. In other words the organization's readiness to listen to what clients want to say is also identified as empathy [31]. These services should be

offered to the customers through employees, both pleasantly and personally, by treating and respecting them well. Services relating to empathy can be said to be concerned with the attitude and behaviour of staff towards their clients. Researchers [21,31,32] demonstrated that empathy influences the creation of satisfaction. This implies that empathy reflects how the organisation treats and looks after its customer requirements and expects everyone to receive fair treatment by offering the same quality service experience.

H4: There is a positive relationship between Empathy and Customer Satisfaction.

Tangible: Availability of physical facilities, equipment and staff appearance

Tangibility is another dimension of the SERVQUAL model. It can also be described as the service industry's physical proof [18]. It includes the physical installations, machinery, the demeanour of staff, physical service depictions and the physical environment. It also includes the physical environment that will have a major impact on the opinions of customers about service quality [21,33]. Tangibility can be said to have an important effect on the attitudes of clients towards creating a brand image. Services are intangible, so customers can only see and experience from the company's tangible services such as facilities and machinery, as well as workers' demeanour. These "clues" are those of the concrete services [18]. The "clues" are explained as the company's skills and the environment quality.

The way the organisation is managing its tangible services will have a direct impact on customer satisfaction because these tangible services are critical components in shaping the picture of the service quality [18]. Tangibility is also identified as linked to the company's physical features. Tangibility also acts as a main component in attracting clients towards the organisation and thus gaining competitive advantage over the rivals. In addition, the tangibility can produce direct and indirect benefits in creating a positive brand image. This made decision makers formulate and execute policies that are helpful in capturing prospective customers while retaining the present customers through using attractive physical constructions and offering a distinctive and comfortable atmosphere for the customers [34].

H5: There is a positive relationship between Tangible and Customer Satisfaction.

2.2 Relationship between SERVQUAL Dimensions and Customer Satisfaction

Customer satisfaction is regarded as a customer's positive experience of consuming a particular good or a service. Also, the quality of the service offered is a determinant of customer satisfaction because service quality comes from the services offered by service suppliers in organisations [35]. For an organisation to attain a high level of customer satisfaction, the service provider must make sure to deliver a high level of service in every aspect. This led to identifying service quality as an obvious means of achieving customer satisfaction [16,35]. This suggests that organisations maximise the five dimensions of the SERVQUAL model (reliability, responsiveness, assurance, empathy, tangibility) in order to provide high quality services and thereby provide better customer satisfaction. Most research confirms that there is a positive relationship between the five dimensions and customer satisfaction [6,36,37,38,39]. Notably, a study [40] confirmed that all five service quality dimensions significantly influence passenger satisfaction in the Sri Lankan airline passenger bag handling section (PBHS) services. Therefore, this study, also assumes is a positive relationship between with SERVQUAL model dimensions and customer satisfaction.

2.3 Data Collection

The researcher considered the five SERVQUAL model dimensions (Reliability, Responsiveness, Assurance, Empathy and Tangibility) as independent variables and passenger satisfaction as the dependent variable (Fig. 1 above). This study used the survey method because of the methodological choice of sample and rigorous statistical approach to analyse data. The original SERVQUAL questionnaire statements were restructured to suit understanding service quality and passenger satisfaction in the airport industry. The questionnaire consisted of 30 questions in three parts (see Appendix 1). The first part covers respondent's demographic information, the second part consists of Likert-type questions on perceptions of service quality dimensions and third part consists of questions to understand the

passenger satisfaction. To measure the five service quality dimensions (Independent Variable) this study's questionnaire consists with 22 items. Four items each for Reliability, Responsiveness, Assurance, and Empathy and Six items for Tangible were included in the questionnaire. Passenger satisfaction (Dependent Variable) had 4 items. The researcher used the 5-point Likert Scale method ranging from strongly disagree (1) to strongly agree (5) to examine the service quality and passenger satisfaction of BIA.

The population of this study is infinite which consists with all the local and international passengers travelling through the BIA. The sample unit is individual passengers. Hence, simple random sampling was used in the data collection stage. A total of 163 passengers responded to this survey, but after cleaning the data set the researcher selected only 150 passengers' responses for the final data analysis. Considering the busyness and the security measures prevailing at BIA, the self-administrated questionnaire was developed using both Online (google forms) and face to face modes to facilitate high participation rate. Online survey was carried out using email, Facebook, Messenger, WhatsApp and Viber. Using social media to collect data is popularising in the analysis of service quality of airports [41, 42]. Statistical Package for Social Sciences (SPSS 23.0 version package) used for the data analysis.

3. RESULTS AND DISCUSSION

3.1 Results

In the total responded sample of 150 who have travelled through BIA, 56 percent of the respondents were men and 44 percent of the respondents were women. 38 percent of the responds are within the age limit of 18 to 25 years, 34 percent were between 26 to 35 years and 17 percent between the age group of 36 to 40, where 11 percent of the respondents are were above 50 years. 85percent of the respondents were local passengers while 15 percent are foreign passengers. 59 percent of the respondents travelled through BIA for tourism purpose, 20 percent for travelling for education purpose, 15 percent travelled through BIA for business purposes and 6 percent travelled through BIA for other purposes such as medical treatments etc.

3.2 Reliability and Validity

As shown in Appendix 2, all scales confirmed reasonable reliability as measured using Cronbach's Alpha value. Cronbach's alpha values for the five dimensions measuring service quality are Reliability 0.819, Responsiveness 0.818, Assurance 0.839, Empathy 0.841 and Tangibility 0.902. Cronbach's Alpha value for passenger satisfaction of BIA is 0.8399. The value for all the items is more than 0.6. Therefore, all the above dimensions can be identified as providing good support for passenger satisfaction. The factor analysis also confirmed the discriminant validity of each statement (Appendix 2). Table 2 below gives the correlations of the variables in the model.

A multiple regression analysis was performed (see Table 3) to identify the dimensions affecting passenger satisfaction at BIA. Table 3 shows the five service quality dimensions in the model predict 85 percent of the observed variability in passenger satisfaction. The remaining 15 percent of the variability is not explained by the model where other variables which are not included in the model explain. This variance is also confirmed to be highly significant as the ANOVA indicates $F= 74.70$ and $p= 0.000$ (See Table 4). Hence, the model developed in this study explains the most possible combinations of service quality dimensions that influence to create passenger satisfaction at BIA.

Table 5 below shows a positive relationship between all the independent variables in the model (Reliability, Responsiveness, Assurance, Empathy, Tangibility) and the dependent variable of Passenger Satisfaction. When determining which service quality factors mostly determine customer satisfaction, only three factors are significant at 95 percent confidence level, namely, Assurance, Empathy and Tangibility. Among the three variables, Tangibility is the most significant variable suggesting its significance in creating passenger satisfaction. Reliability and Responsiveness are not significant at 95 percent confidence level (see Table 5 below). Hence it is concluded that these two variables do not influence passenger satisfaction at BIA.

3.3 Hypotheses Testing

The Pearson correlation between reliability and passenger satisfaction was 0.718 confirming a positive relationship between the two factors. This relationship was statistically significant at

0.01 levels. The associated significant value (p) is less than 0.05. The regression analysis shows a positive relationship between reliability and passenger satisfaction but such relationship is insignificant (p = 0.777). Hence, H₁ was rejected. The Pearson correlation between the responsiveness and passenger satisfaction was 0.780 and significant indicating a positive relationship between the two variables (p = 0.05). However, the regression analysis confirmed this relationship to be insignificant (p = 0.288), thus rejecting H₂. Hence, there is no influence on responsiveness to achieving passenger satisfaction at BIA. The Pearson correlation between assurance and passenger satisfaction was 0.819 and is significant indicating a positive relationship. The regression analysis results confirmed a positive relationship between assurance and passenger satisfaction (p = 0.047). So H₃ was accepted which confirmed a

positive and significant relationship between concern for assurance and passenger satisfaction. The Pearson correlation between empathy and passenger satisfaction was 0.783 and is statistically significant. The associated significant value (p) is less than 0.05. Therefore, the hypothesis can be accepted. The regression analysis confirmed a positive relationship between empathy and passenger satisfaction and thus H₄ was accepted (p = 0.049). The Pearson correlation between tangibility and passenger satisfaction was 0.819 and is statistically significant. The regression analysis confirmed a positive relationship between tangibility and passenger satisfaction, and thus H₅ was accepted (p = 0.003). This result also confirmed that of the five service quality dimensions, tangibility is the most important dimension influencing passenger satisfaction at BIA.

Table 2. Correlations for scales

| | Customer Satisfaction | Reliability | Responsiveness | Assurance | Empathy | Tangible |
|-----------------------|-----------------------|-------------|----------------|-----------|---------|----------|
| Customer Satisfaction | 1 | .718** | .780** | .819** | .783** | .819** |
| Reliability | .718** | 1 | .805** | .806** | .782** | .791** |
| Responsiveness | .780** | .805** | 1 | .896** | .798** | .849** |
| Assurance | .819** | .806** | .896** | 1 | .858** | .889** |
| Empathy | .783** | .782** | .798** | .858** | 1 | .844** |
| Tangible | .819** | .791** | .849** | .889** | .844** | 1 |

Table 3. Results of regression analysis model summary^b

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------------------|----------|-------------------|----------------------------|
| 1 | .850 ^a | .722 | .712 | .38211 |

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

b. Dependent Variable: Customer satisfaction

Table 4. Regression analysis (ANOVA Table)

| ANOVA ^a | | | | | | |
|--------------------|------------|----------------|-----|-------------|--------|-------------------|
| Model | | Sum of Squares | df | Mean Square | F | Sig. |
| 1 | Regression | 54.539 | 5 | 10.908 | 74.706 | .000 ^b |
| | Residual | 21.026 | 144 | .146 | | |
| | Total | 75.565 | 149 | | | |

a. Dependent Variable: Customer satisfaction

Predictors:(Constant),Tangible, Reliability, Empathy, Responsiveness, Assurance

Table 5. Regression model of passenger satisfaction at BIA

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|----------------|-----------------------------|------------|---------------------------|-------|-------|
| | B | Std. Error | Beta | | |
| (Constant) | 0.683 | 0.182 | | 3.748 | 0.000 |
| Reliability | 0.023 | 0.079 | 0.023 | 0.284 | 0.777 |
| Responsiveness | 0.108 | 0.102 | 0.113 | 1.067 | 0.288 |
| Assurance | 0.230 | 0.115 | 0.253 | 1.999 | 0.047 |
| Empathy | 0.174 | 0.088 | 0.186 | 1.987 | 0.049 |
| Tangibility | 0.301 | 0.099 | 0.322 | 3.037 | 0.003 |

Table 6. Hypothesis testing results

| Hypothesis | Result |
|---|----------|
| H ₁ : There is a positive relationship between Reliability and Customer Satisfaction. | Rejected |
| H ₂ : There is a positive relationship between Responsiveness and Customer Satisfaction. | Rejected |
| H ₃ : There is a positive relationship between Assurance and Customer Satisfaction. | Accepted |
| H ₄ : There is a positive relationship between Empathy and Customer Satisfaction. | Accepted |
| H ₅ : There is a positive relationship between Tangible and Customer Satisfaction. | Accepted |

3.4 Discussion

The objectives of this study as mentioned above were to examine the service quality factors that influenced passenger satisfaction with the services offered by BIA and to examine the relationship between the five service quality dimensions and passenger satisfaction with the services offered at BIA. To understand these objectives the researchers carried out mainly a correlation analysis and regression analysis using the SPSS package.

Objective 1: To identify the most important service quality dimensions influencing passenger satisfaction at BIA

Under the first objective the researcher identified the service quality dimensions affecting passenger satisfaction with the services offered by BIA. The results confirmed a positive relationship between the five dimensions of service quality and passenger satisfaction at BIA. Taking all the five dimensions together, the relationship between passenger satisfaction and service quality has a positive correlation with a value of 0.843, indicating a high positive relationship between service quality and passenger satisfaction. Of the five dimensions, assurance, empathy and tangibility indicate a positive and significant relationship with passenger satisfaction with the services offered by BIA. The remaining two dimensions, namely, reliability and responsiveness show a positive relationship with passenger satisfaction. Thus these two variables are not significant. The

findings of this study are similar to those of [43] who found that the service quality dimensions had a positive relationship with customer satisfaction. Specifically, tangibility, assurance and empathy scored much higher than the other dimensions.

Appendix 2 shows that among the four items measuring passenger satisfaction -'I have a positive impression about BIA to say others' as the most important item, whereas 'I prefer to choose BIA as a transport hub again' as the least important item.

This study reveals a positive and significant relationship between reliability and passenger satisfaction with the services offered by BIA. However, [18] mentioned reliability as the most significant factor in ensuring customer satisfaction. The Factor Analysis (see Appendix 2) confirms that 'BIA has a sincere interest in solving problems' as the most important item and 'BIA insists on error free records' as the least important when promoting reliability in the minds of passengers.

Objective 2: To examine the relationship between the five service quality dimensions and passenger satisfaction with the services offered at BIA

3.4.1 The effect of reliability on creating passenger satisfaction of BIA

Reliability is the "Ability to perform the promised service dependably and accurately" [10]. Of the

four statements measuring reliability the highest factor loading is on 'BIA performs services right at the first time' (Appendix 2). The least important item in this factor is 'BIA insists on error free records'. The statistical analysis confirmed that reliability and passenger satisfaction have a positive but insignificant relationship. However, reliability seems to be an important dimension influencing the passenger satisfaction of BIA. Literature highlights reliable services at airports will ensure customer satisfaction, improve passenger revisits and their loyalty. These are suggesting that BIA management should focus more on attending customer requests right at the first time to improve passenger perceptions about BIA services.

3.4.2 The effect of responsiveness on creating passenger satisfaction of BIA

Responsiveness is the willingness to grant customer requests and to supply prompt services [18]. Of the four items measuring responsiveness (see Appendix 2) the highest loading is on 'Employees of the BIA provide prompt service for me' and the 'Employees of the BIA are never too busy to respond to my requests' as the least important in creating responsiveness. The results confirmed that responsiveness and passenger satisfaction have a positive but insignificant relationship. However, [18] suggested that responsiveness should be extended in the service offerings because that variable is very essential for customer satisfaction. Also, responsive services will satisfy the appropriate requirements or objectives of customers [44]. However in conclusion it could be said that the results of this study do not confirm a positive and significant influence of responsiveness to customers enhancing passenger satisfaction with the services offered by BIA.

3.4.3 The effect of assurance on creating passenger satisfaction of BIA

The results confirmed that a positive and significant relationship between assurance and passenger satisfaction with the services offered by BIA. The results are similar to those of [27] who confirmed that assurance shows an important connection between customer perception of service quality and creating brand image. The most important item in creating assurance in the minds of passengers is 'I feel safe in my transactions with BIA' and the least important item is 'Employees of BIA have proper

and updated knowledge to answer my questions' (see Appendix 2).

3.4.4 The effect of empathy on creating passenger satisfaction of BIA

The results confirm that empathy creates a positive and significant relationship with passenger satisfaction with the services offered by BIA. In their study, [40] confirmed empathy to be the most significant service quality factor of all the other variables in creating passenger satisfaction in the baggage handling section of Sri Lankan Airlines. However, the results of this study do not confirm empathy as the most significant service quality dimension that creates passenger satisfaction at BIA. However, both studies confirmed that empathy is a significant variable in creating passenger satisfaction in the Sri Lankan airport sector. Appendix 2 shows that 'Employees of BIA understand my needs' as the most important item creating empathy in the minds of passengers of BIA whereas passengers perceive 'BIA provides adequate facilities for me' as the least important item.

3.4.5 The effect of tangibility in creating passenger satisfaction at BIA

The results of the study revealed that a positive and significant relationship between tangibility and passenger satisfaction with the services offered by BIA. Appendix 2 confirms that out of the six items measuring tangibility 'BIA provide proper parking facilities' as the most important item whereas 'There are proper signboards directing me in the airport' as the least important item in this variable.

4. CONCLUSION AND RECOMMENDATIONS

Overall, this study confirms that the passengers at BIA are satisfied with the services offered. However, BIA must be flexible and create innovative solutions from time to time to improve the service environment especially through proper planning. The results confirmed tangibility as the most important dimension creating passenger satisfaction. Hence, BIA management should urgently focus on improving the associated tangible services and its quality level to promote better passenger satisfaction. This approach will ensure a better competitive advantage for BIA and to compete with other neighbouring countries and its airports.

Another managerial implication of this study is that it proposes that BIA management improve its parking facilities, which was identified as the most important item under the tangibility dimension. Also, care should be taken to improve the wash rooms and sanitary facilities and to keep them always clean. BIA management should also focus on ensuring the safety and cleanliness of the physical premises of BIA. Doing so would enable BIA to become a more attractive airport. For example, BIA can add more greenery to the passenger waiting areas because more plants and green will add liveliness to the area. Adding these things will enhance the pleasant interior experience of passengers. The employees' attire was also found to be important to create passenger satisfaction. As a suggestion, the Human Resource Manager of BIA should encourage its employees about their physical appearance and should arrange training sessions to educate them about dressing smart, neat and attractively. The results confirmed that restaurant facilities are also important to create passenger satisfaction at BIA so BIA management should take proper steps to improve its dining facilities. Putting up proper signboards to direct the passengers is also an important factor under the tangibility dimension. This will help passengers to identify the exact place and help them to get to the right place. Therefore, management should make sure there are proper sign boards directing passengers in the airport.

Assurance and empathy were also found to be two other significant factors in overall passenger satisfaction with services offered by BIA. This aspect is mostly important for the HR manager of BIA because he should organize proper training and development programmes for employees of BIA, to enhance feelings trustworthiness and loyalty in passenger's minds. BIA employees should be able to offer individualized services on passengers' request so that they feel satisfied.

Another implication of this study is the potential intervention of the Sri Lankan government and other government authorities in improving the services offered to passengers at BIA. For these, huge investments in infrastructure and capacity building are required. Being a developing economy, the Sri Lankan government can invite foreign investors to facilitate this process. All stakeholders' focus should be on improving especially the most important three dimensions identified in this study, namely, tangibility, assurance and empathy to create a better

passenger experience for local and international travellers. A positive passenger experience and satisfaction will encourage their re-visit intentions, generating more income for BIA and facilitate the economic development of the country.

5. LIMITATIONS AND FUTURE RESEARCH

As stated earlier, there are four airports in Sri Lanka. The first limitation of this study is that it only focuses on the largest and fully operative airport in Sri Lanka which is BIA. Future researchers can collect their data using the other airports of Mattala, Ratmalana and Batticaloa. Further studies could also be carried out after an in depth literature review by adding more dimension to this study model. Also, there is a possibility of carrying out comparative studies of service quality and passenger satisfaction using different airports in Sri Lanka or even foreign airports.

During the data collection for this study the Easter Sunday attack prevented the researchers from receiving the expected responses as expected. This was the second limitation of this study. Due to this terrorist attack the tourism sector of Sri Lanka was hugely damaged reducing the tourist arrivals to a low level. This influenced the sample size, percentage of international passengers and the data collection strategy. To avoid these limitations future researchers can use larger samples to identify the impact of service quality on passenger customer satisfaction of BIA. Care should be taken to include more international passengers than the proportion in this sample.

The third limitation of this study is that it only uses the SERVQUAL model and discusses only five service quality dimensions as the independent variables. There is a possibility of extending these five dimensions and testing their influence on passenger satisfaction. Future researchers could use other models (such as SERPERF, Nordic Model, Multilevel Model, and Hierarchical Model) to measure service quality or combine SERVQUAL with other models to study passenger satisfaction with airport services.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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APPENDIX 1: QUESTIONNAIRE

Part I - General Introduction

Please mark (x) in the relevant box.

| | |
|--|---|
| 1. Gender | 2. Please indicate the age group that you fall in to following |
| Male | 18 to 25 years 26 to 35 years |
| Female | 36 to 49 years Above 50 years |
| 3. What passenger type do you belong? | 4. What is the purpose of travelling via BIA? |
| Local | For Tourism For Education |
| Foreign | For Business Other Reasons |

Part II - Service Quality

Following statements request your perceptions regarding the service quality you have experienced in BIA. Please mark (X) in the relevant answer.

1- Strongly Disagree, 2-Disagree, 3- Neutral, 4- Agree, 5-Strongly Agree

| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|-------------------|----------|---------|-------|----------------|
| INDEPENDENT VARIABLE: SERVICE QUALITY | | | | | |
| 1. Reliability: The capacity to execute services consistently and precisely | | | | | |
| 5. BIA provides services on time | | | | | |
| 6. BIA insists on error free records | | | | | |
| 7. BIA has sincere interest in solving problems | | | | | |
| 8. BIA performs the services right first time | | | | | |
| 2. Responsiveness: Willingness to assist and react to consumer desires | | | | | |
| 9. Employees try to minimize the long queues of passengers | | | | | |
| 10. Employees of the BIA provide prompt service for me | | | | | |
| 11. Employees of the BIA always willing to help me | | | | | |
| 12. Employees of the BIA never too busy to respond my requests | | | | | |
| 3. Assurance: Employee's capacity to inspire trust and loyalty | | | | | |
| 13. The behaviour of staff members of BIA create confidence in my mind | | | | | |
| 14. Employees of BIA have proper and updated knowledge to answer my questions | | | | | |
| 15. Employees of BIA indicate professionalism with me | | | | | |
| 16. I feel safe in my transactions with BIA | | | | | |

4. Empathy: An individualized service is provided

- 17. BIA provides individual attention to me
 - 18. BIA provides adequate facilities for me
 - 19. Operating hours of BIA are convenient for me
 - 20. Employees of BIA understand my needs
-

5. Tangible: Availability of physical facilities, equipment and staff appearance

- 21. BIA provide proper parking facilities
 - 22. Physical premises of the BIA is clean and safety
 - 23. Interior of the BIA is pleasant for me
 - 24. Employees of BIA are smartly dressed, neat and appealing
 - 25. There are proper signboards directing me in the airport
 - 26. BIA has good restaurant facilities
-

Part III – Customer satisfaction

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|--|--|----------------------|----------|---------|-------|-------------------|
| <hr/> | | | | | | |
| DEPENDENT VARIABLE: CUSTOMER SATISFACTION | | | | | | |
| <hr/> | | | | | | |
| 27. I have a positive impression about BIA to say others | | | | | | |
| 28. I recommend BIA for my friends and relatives | | | | | | |
| 29. I prefer to choose BIA as a transport hub again | | | | | | |
| 30. As a BIA passenger I have strong preference regarding this airport | | | | | | |

THANK YOU!

Appendix 2: Exploratory Factor Analysis

Reliability

| Statement | Factor loadings | Cronbach's Alpha |
|--|-----------------|------------------|
| 05. BIA provides service on time. | .794 | 0.819 |
| 06. BIA insists on error free records. | .761 | |
| 07. BIA has a sincere interest in solving problems. | .829 | |
| 08. BIA performs the services right at the first time. | .840 | |

Responsiveness

| Statement | Factor loadings | Cronbach's Alpha |
|--|-----------------|------------------|
| 09. Employees try to minimize the long queues of passengers. | .807 | 0.818 |
| 10. Employees of BIA provide me with prompt service. | .812 | |
| 11. Employees of BIA are always willing to help me. | .803 | |
| 12. Employees of the BIA are never too busy to respond to my requests. | .795 | |

Assurance

| Statement | Factor Loadings | Cronbach's Alpha |
|---|-----------------|------------------|
| 13.The behaviour of staff members of BIA creates confidence in my mind. | .817 | 0.839 |
| 14.Employees of BIA have proper and updated knowledge to answer my questions. | .803 | |
| 15.Employees of BIA show professionalism. | .812 | |
| 16.I feel safe in my transactions with BIA. | .854 | |

Empathy

| Statement | Factor Loadings | Cronbach's Alpha |
|---|-----------------|------------------|
| 17.BIA gives me individual attention. | .821 | 0.841 |
| 18.BIA provides adequate facilities for me. | .806 | |
| 19.Operating hours of BIA are convenient for me | .813 | |
| 20.Employees of BIA understand my needs. | .852 | |

Tangible

| Statement | Factor Loadings | Cronbach's Alpha |
|---|-----------------|------------------|
| 21.BIA provide proper parking facilities | .852 | 0.902 |
| 22.Physical premises of the BIA is clean and safety | .806 | |
| 23.Interior of the BIA is pleasant for me | .825 | |
| 24.Employees of BIA are smartly dressed, neatly and attractively. | .851 | |
| 25.There are proper signboards in the airport. | .782 | |
| 26.BIA has good restaurant facilities. | .807 | |

Customer satisfaction

| | Factor Loadings | Cronbach's Alpha |
|---|-----------------|------------------|
| 27. I have a positive impression about BIA to share with others. | .867 | 0.839 |
| 28. I recommend BIA to my friends and relatives. | .844 | |
| 29. As a BIA passenger I have a strong preference for this airport. | .831 | |
| 30. I prefer to choose BIA as a transport hub again. | .749 | |

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