

## **Effect of Airport Efficiency Dimensions on International Tourists' Satisfaction in Sri Lanka; with Reference to Bandaranaike International Airport**

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### **Abstract**

Bandaranaike International Airport plays a significant role rather than other international airports in Sri Lanka. Maintaining service efficiency and quality of the service have been challenged when it comes to passenger service delivery for last few years. It was a well-known fact that Bandaranaike International Airport has been listed out to the most inefficient international airports in South Asian Region. By using quantitative research approach and deductive reasoning the researcher has incorporated SPSS with Smart PLS statistical packages for the data analysis. Using simple and multiple linear regression analysis, the nature of the relationships has been measured between airport efficiency dimensions and international tourist satisfaction. 150 foreign tourists have participated for the sample and as for the findings, the researcher has found that, all the hypotheses are accepted denoting that relationships between independent variables and dependent variable are positive relationships and security is the most influential airport efficiency dimension.

**Keywords:** *Bandaranaike International Airport, Efficiency Dimensions, Tourist satisfaction, Service Delivery, Tourism Industry*

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## Introduction

As the main air entry point of Sri Lanka, Bandaranaike International Airport (BIA) is the key hub which currently attracts international tourists to the island (AASL, 2022). As the backbone of Sri Lankan tourism, Bandaranaike International Airport serves for more than 10 million passengers per year as the primary gateway to the country. As for the hub for Sri Lankan Airlines and serves for many international airlines to operate their scheduled and charter flights. Being a well-placed airport with good infrastructure and management is very much crucial since Bandaranaike Airport is the main primary gate for the air passengers.

Among other few international airports, this is operating as a three-class airport with moderately poor-quality service. Recently BIA has been listed out as top ten worst airports in Asia (DailyFT, 2015) with a bulk of negative international customer reviews.

The research area is associated with the largest and the busiest international airport in Sri Lanka. Because of that, there were some restrictions which the researcher had to face regarding getting permission to enter the airport during the data collection period. With the worst economic condition, unstable political situation and bankruptcy of the country, the international tourist arrivals were considerably low. Also, the language barriers of the international tourists who cannot speak English is another limitation when interacting with tourists when collecting data through questionnaires.

This study will help to address the existing gap which can be identified as Satisfaction of International Tourists, and the airport efficiency dimensions at BIA. As a leading air travel providing center and the only international airport which caters for the international tourists and cargo, this condition should be highly taken into account.

## Research Problem(S) /Issue(S)

As of the World Airport Survey 2015, BIA has been listed out as top ten worst airports in Asia (DailyFT, 2015). As per the results of the same survey done in 2016, BIA ranks one of the worst airports in South Asia; Stench of Corruption and Harassments. According to the Transport Research Society on Productivity (Liebert, 2013) BIA has been identified as a low efficient airport in Asian region. In recent years most of the international tourists have raised their voice against the harassments, low efficiency and poor service quality of the airport (Dambagolla & Sumanasiri, 2020). With the worst economic situation and the bankruptcy, the country has lost its valuable human resources as brain drain has impacted the county in a severe manner. In such a situation, most of the aero engineers, technicians and top managerial level personnels left the Sri Lankan aviation industry and that can be identified as the most recent factor for poor service quality at the airport.

It is clear that there is a gap between the satisfaction of international tourists and the airport efficiency dimensions at the Bandaranaike International Airport and the level of satisfaction has been continuously dropping down. This tragic situation directly causes for Sri Lankan hospitality and the country's goodwill because passengers get disappointed when they are unable to acquire the expected level of service from the airport formalities.

**Table 01: Top 10 Worst International Airports in Asia based on overall experience**

Rank	International Airport	Owned Country
1	Kathmandu Tribhuvan International Airport (KTM)	Nepal
2	Tashkent International Airport (TAS)	Uzbekistan



3	Kabul Hamid Karzai International Airport (KBL)	Afghanistan
4	Ho Chi Minh City Tân Sơn Nhất International Airport, (SGN)	Vietnam
5	Islamabad Benazir Bhutto International Airport (ISB)	Pakistan
6	Guangzhou Baiyun International Airport (CAN)	China
7	Chennai (Madras) International Airport (MAA)	India
8	Manila Ninoy Aquino International Airport (MNL)	Philippines
9	Dhaka Shahjalal International Airport (DAC)	Bangladesh
10	Colombo Bandaranaike International Airport (CMB)	Sri Lanak

Source: World Airport Survey 2015 (DailyFT, 2015)

## Objectives

### Main Objective

01. To examine the relationship of each existing airport efficiency dimension with international tourist satisfaction reference to the service offered by the BIA.

### Specific Objective

02. To elucidate the most influential airport efficiency dimension which affects the satisfaction of the international tourists who utilize BIA.

## Literature Review

### Evolution of Airline Industry and Airport

When it comes to the practical scenario, airports enhance accessibility based on the air hub operations and it may assist to capitalize

the geographical advantages and regional development. The evolution of the aviation industry and airports have brought the global economy and trade into a new level (Papatheodorou & Arvanitis, 2009)

The place where the ground transportation and air transportation are interconnected can be defined as the Airport. It is a location where the airplanes are taken off and landed down. The very first planned airport was built in Croydon, London. Both airports and urban development have been happening together because proximity and compression matters both for the high level of connectivity (Azzam, 2017) With the implementation of deregulation concepts of the governments in 1977 passenger and cargo aviation has been fully changed. Value added airport services were delivered and relative delivery of infrastructure facilities and superstructure facilities were significantly increased (Gillen, 2011). As per Schlaack's (2015) intention, different kinds of land use patterns and models have been utilized in order to plan the composition and activities in airports. According to the (Masilonyane, 2017) Aviation Services Authorities, Airport Development Authorities, Urban Development Authorities and respective governments have implemented integrated initiatives for above discussed airport developments.

### Airport Efficiency Dimensions (Independent Variable)

To measure the performance and efficiency of the airports, many scholars have been introduced specific quantifies called 'Airport Efficiency Dimensions'; Check in/Check out, Baggage Handling, Reliability, Productivity, Courtesy of staff, Visibility, Physical Comfort, Safety and Security, Accessibility and Other Basic Facilities etc(Adler, Liebert, & Practice, 2014; Gillen, 2011; SOTM, 2020). Since airports are service based organizations which facilitate for multi-national passengers, serve as commercial hubs, and allow for wider perspectives, keeping above mentioned dimensions steady is more important.



Airport Efficiency is not only measuring financial indexes but also it is a multidimensional approach. On the other hand, above-mentioned airport efficiency dimensions are very important to the aviation industry in order to satisfy customers and remain competitive (Gillen, 2011; Skouloudis, Evangelinos, & Moraitis, 2012). Many researchers have introduced different kinds of models to measure airport efficiency and the performance measurements have been differentiated in last few years. With the recognition of the importance of these dimension models, airports, aviation related government and private organizations and researchers continuously reflected to cover up the efficiency dimensions in order to enhance the quality of the service.

### **SERVQUAL Model (Dependent Variable)**

This conceptual model was designed by A. Parasuraman, Valarie Zeithaml and Leonard L. Berry in 1985. It is also an abbreviation for 'Service Quality'. The model is mainly based on ten indispensable dimensions and by conducting further researches all those have categorized into five main dimensions; Responsiveness, Reliability, Tangibility, Assurance and Empathy (Wang, 2015). Service Quality in Hospitality and Tourism Industry is an exigent topic because satisfied service permits customers to revisit the destination by keeping long term beneficial customer relationships. The idea of SERVQUAL Model based on customer (In Airline Industry, passengers) satisfaction and the dimensions are associated with the fulfillment of customer requirements and their expectations (Ali & Raza, 2017).

### **International Tourist Satisfaction in Sri Lanka**

Sri Lanka has been recognized by the international tourists as a paradise which comprises rich culture and heritage, natural

attractions and amazing hospitality (Udurawana, 2015). According to the Mai Ngoc (2020) there can be a list of determinants which directly affect international tourist satisfaction such as historical attractions, tourist service infrastructure, natural environment, destination image, safety and security etc. (Mai Ngoc Khuong, 2020). Because of the Easter Sunday Attack in 2019 and Economic Crisis and Political Instability in 2021 most of the international tourists have banned Sri Lanka (Chandradasa, Rathnayake, Rowel, & Fernando, 2020). However, in order to remain competitive in the global travel market, Sri Lanka needs to maintain international Tourist Satisfaction. In 2019 Sri Lanka has been recognized as the top country for travel by Lonely Planet (TheGuardian, 2019) and tourists from all over the world are still dreaming of visiting this amazing island. In order to protect the reputation that has already been earned, addressing international tourist satisfaction is very important.

### **Hypothesis Development**

**H1:** There is a positive relationship between Check in/out and International Tourist Satisfaction.

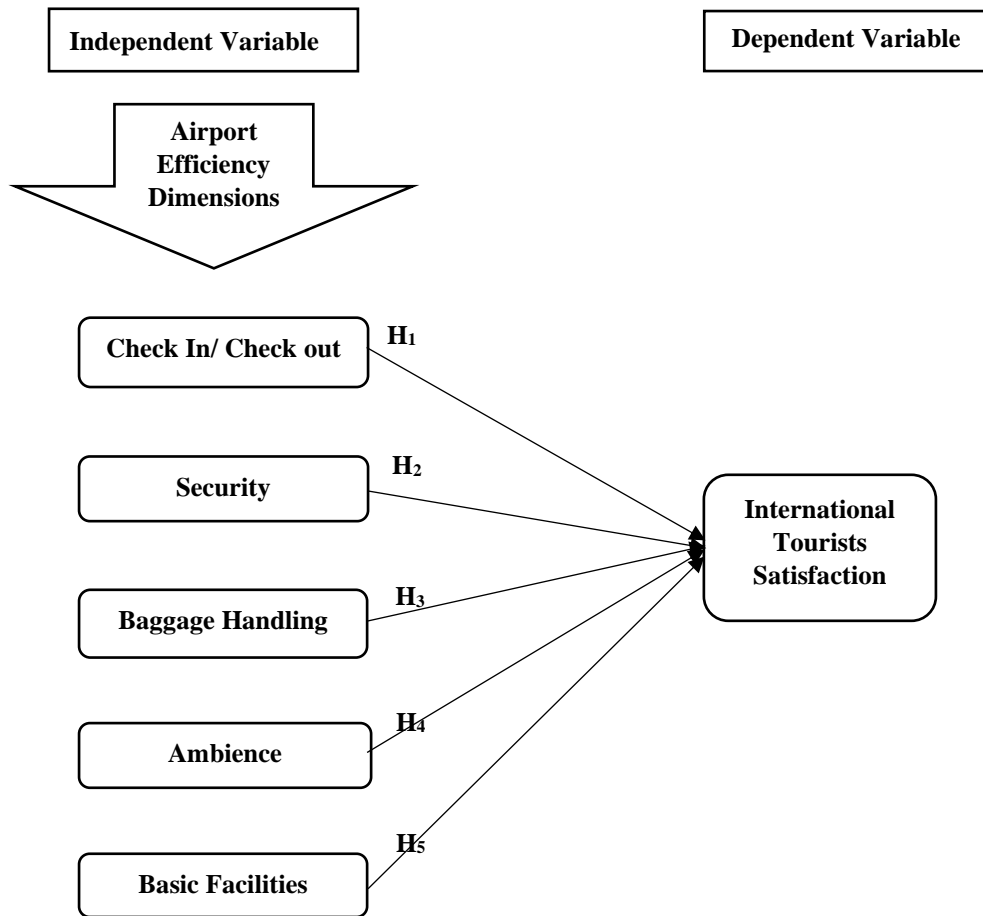
**H2:** There is a positive relationship between Security and International Tourist Satisfaction.

**H3:** There is a positive relationship between Baggage Handling and International Tourist Satisfaction.

**H4:** There is a positive relationship between Ambience and International Tourist Satisfaction.

**H5:** There is a positive relationship between Basic Facilities and International Tourist Satisfaction.

### Conceptual Framework



**Figure 01: Conceptual Framework**

*Source: Adapted from Dambagolla and Sumanasiri, 2020 and developed by the researcher*

### Research Methodology

The researcher has incorporated the quantitative research method which is a standard experimental method of scientific disciplines. It is the nature of quantitative research that it highly focuses on objective findings as they are based on reliable numerical data. As the results of the research, the relationship between each airport efficiency dimension and international tourist satisfaction will be elucidated and the most influential airport efficiency dimension which affects for the international tourist satisfaction will be examined. Moreover, the researcher has

incorporated deductive reasoning and the reason behind why the researcher has been associated with deductive reasoning is that it is possible to explain these causal relationships between the independent variable and the dependent variable. On other hand, the approach is giving enough support to measure the concepts quantitatively and it generalizes the study findings up to a certain extent. Under the deductive reasoning, the researcher is going to associate a theory named the Expectancy-Disconfirmation Paradigm which is defined as the comparison of the performance of the products and services against the customers' pre-purchase expectations. To measure international



tourist satisfaction, the researcher uses SERVQUAL Model and develops it accordingly which comprises five dimensions that have been discussed in the literature. Based on that theory and model researchers develop hypothesis according to that theory. The researcher assumes that there are positive relationships in between each airport efficiency dimension and international tourist satisfaction.

With the purpose of accomplishing the objectives of the research, the researcher has included the international tourists who come to Sri Lanka through BIA with special reference to the peak season in December 2022 as the population. According to the SLTDA annual reports, 2018, 2019, 2020, and 2021, the peak season (December) has a huge potential to attract international tourists to Sri Lanka (SLTDA, 2021). Among them, particular months have recorded more international tourist arrivals due to Christmas and End of Year Celebrations.

The researcher has determined the sample by getting data from the SLTDA regarding international tourist arrivals in December, peak seasons in 2017, 2018, 2019, 2020 and 2021. By getting the sum of all the arrivals in December, peak seasons in particular years, got the average of the arrivals for the past five years. According to the average, the sample is determined by using Morgan Sample Size Determination which is a simple way of determining the sample size for a specified population.

**Table 02: Sample Size Determination**

Year	International Tourists Arrivals in December
2017	244, 536
2018	253, 169
2019	241, 663
2020	393
2021	89, 506
Total	829, 267
Average	165, 853

Sample size	380
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Source: SLTDA Annual Statistical Reports 2017, 2018, 2019, 2020 and 2021

$$\begin{aligned}
 (1) \\
 \text{Sample Size} &= X^2 NP (1-P) \div e^2 (N+1) + X^2 P (1-P) \\
 &= 3.8412 * 165853 * 0.50 (1-0.50) \div 0.052 \\
 &= (165853-1) + 3.8412 * 0.50 (1- 0.50) \\
 &= 159, 260. 34 \div 415.59 \\
 &= 383.21 \\
 &= 380
 \end{aligned}$$

The researcher has been associated convenience sampling method which is coming under the non-probability sampling methods. Researchers has used this sampling method because of the easiness to access the sample (Etikan, Musa, Alkassim, & statistics, 2016), economical and uncomplicated. In the case of getting ideas about airport efficiency from the international tourists’ eye, this sampling method is very much related to the study. The researcher plans to incorporate mainly primary data which is described as the data gathered by the researcher himself specially created for solving the research questions. It is very advantageous to gather data once the tourists check out at the arrival lounge because the data is rich with reliability and validity while they are experiencing services and facilities at the airport. Secondary data is incorporated for the discussion in order to make a comparison with the previous literature and findings of the previous researchers.

In order to collect data, the researcher has designed a self - administered questionnaire consisting of closed ended questions and open-ended questions. The researcher has been given thorough attention to select the dimensions under the independent and dependent variables in order to meet reliable results which help quantify the objectives and to test the hypothesis.

**Reliability of the Questionnaire – Pilot Survey**

This study was done at the preliminary stage of the research project as a descriptive study



in primary scale by using SPSS Statistical Package. To be aware of the difficulties, issues, test research protocols and the reliability of the instrumental development, the pilot survey has been carried out by targeting twenty international tourists at the arrival gate of BIA. The researcher is planned to use the results of the pilot survey to guide the methodology of the thesis in large scale for the data collection and investigation phase.

**Table 03: Reliability Statistics**

Cronbach's Alpha	N of Items
.800	47

Source: SPSS data output from field survey information 2023

**Data Analysis**

Data analysis is mainly done through SPSS (Statistical Package for Social Sciences) and Smart PLS (Partial Least Squares Path Modeling) statistical packages. Descriptive analysis and ANOVA tests are planned to be performed in order to analyze the profiles of the respondents. Apart from that, the rest of the main analysis is done using Smart PLS statistical package. Below are the methods of analysis which are used to test the research objectives and interpret the results.

**Table 04: Table of Data Analysis Methods**

What to be Analyzed	Analysis Technique
Demographic Profiles of the Respondents	Descriptive Analysis ANOVA Analysis
Reliability and Validity of Dimensions	Outer Loading Composite Reliability Cronbach's Alpha Test
Relationship of the Airport Efficiency Dimensions with International Tourist Satisfaction	Simple Linear Regression Analysis

Multiple Regression Analysis	Linear Regression
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Most Influential Airport Dimension	Correlation Co-efficient
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Source: Based on the Research Objectives

**Findings**

**Response Rate and Data**

By considering high security measures and prevailing conditions at BIA, the researcher was able to collect 170 responses by physically approaching the international tourists at arrival lobby. 20 questionnaires were detached because of missing and imprecise information and 150 questionnaires were utilized for the analysis. Considering the above statistics, the response rate has been calculated as follows.

$$150/170 * 100\% = 88$$

Response Rate = 88%

**Descriptive Analysis**

Considering about the gender distribution, the higher response rate has been reached by male and its about 53.33% and rest of the 46.67% has been reached by female.

Most of the international tourists who are between age 19 – 29 visit Sri Lanka and as a percentage, it is about 44.67%. It depicts that those people belong to generation Y (more commonly known as Millennials). As per the age distribution, 32.67% of international tourists belong to age 30 – 39, 12% of tourists are belong to 40 – 49 and 4% of the tourists are in the age 50 – 59. The small portion of the pie chart which carried around 1.33% are the tourists who are under 19 and 5.33% of the tourists are above 60.

The highest international tourist arrivals have been recorded from Russia by substantiating the annual statistical reports of SLTDA. The total responding rate is 28% and it is about 42 respondents out of the sample. The second



highest rate has been recorded from Germany and it is about 9.33%.

According to the purpose of visit, 72.0% of tourists visited Sri Lanka for the purpose of leisure and tourism. According to the sample, it is about 108 respondents. Since Sri Lanka is very much popular for heart stopping attractions and warm hospitality, people all over the world tend to visit the country for leisure purposes. About 10.0% of the tourists visit for their business purposes such as owning hotels and resorts, plantations and other medium sized enterprises which they revealed at the data collection stage. 6.0% of tourists visit Sri Lanka for educational and research purposes while 3.33% of tourists immigrate to visit their friends and relations in Sri Lanka. Also, some foreigners visit Sri Lanka for above not mentioned purposes and it is about 8.67%.

Most of the international tourists have visited Sri Lanka for the first time and it is about 62.67% as a percentage. According to this huge percentage, it can be predicted that there will be a potential travel market for the tourism industry. In addition to that, 24.0% of international tourists have arrived to Sri Lanka for the second time. 6.67% of tourists have stepped to the island for the third time and more than three times.

### Outer Loading Test

These item loading reflects correlation among the items and the latent variable. According to the statisticians, the acceptable boundary of the outer loading should be greater than .70 or .60. Check in and out can be accepted rather than first one, because the first carries 0.561 which is in satisfactory level and other three determinants carry 0.730, 0.923 and 0.704 sequence. Considering the determinants coming under Security dimensions, only S2 (0.734) and S5 (0.825) can be accepted and rest of the dimensions such as S1 (0.321), S3 (0.424) and S4 (0.610) cannot be accepted since their values are not exceeding .70. Turning into the Baggage Handling dimension, BH1, BH2, BH5 which are carrying .392, .394 and .515

cannot be accepted and BH3 (.785) and BH4 (.865) can be accepted because of the higher values. Ambience is the fourth dimension under the independent variable of the model and all the determinants are close to the acceptance level. When it comes to denote the values, A1 (.800), A2 (.814), A3 (.675) and A4 (.808) can be represented. Basic Facilities of the airport are measured under the fifth dimension and the first four determinants can be accepted under the .695, .844, .854, .784 and last determinant cannot be accepted because it is carrying .464 which is not exceeding .70 value.

Considering the outer loading values of the dependent variable, twelve values have been represented in Table 05 under each determinant of the dependent variable. Under the reliability, all the determinants carry accepted values as R1(.668), R2 (.719), R3 (.844) and R4 (.690) while Responsiveness dimension carry only two determinants accepted and rest of the two determinants are not accepted; RE1 (.650), RE2 (.654), RE3 (.701) and RE4 (.851). Except the second determinant of the Assurance dimension, all three determinants are accepted because all are exceeding .70 acceptance value. The results can be denoted as AS1 (.729), AS2 (.564), AS3 (.717) and AS4 (.762). Considering the results that generated under the Empathy Dimension, E1 (.662), E3 (.606) cannot be accepted while E2 (.710) and E4 (.731) are accepted. Under the Tangibility dimension, only T1 (.863) and T3 (.852) determinants can be accepted while T2 (.431) and T4 (.456) are not accepted.

According to these outer loading values, the researcher determines that some indicators are conditionally applicable for the constructs and those indicators are considered higher in satisfactory rate. Nevertheless, some indicators show lower values than .70 and they cannot be considered as applicable indicators for the construct.





**Table 05: Outer Loading Test Interpretation**

	Check in/out	Security	Baggage Handling	Ambience	Basic Facilities	Tourists Satisfaction
C 1	.561					
C 2	.730					
C 3	.923					
C 4	.704					
S 1		.321				
S 2		.734				
S 3		.424				
S 4		.610				
S 5		.825				
BH 1			.392			
BH 2			.394			
BH 3			.785			
BH 4			.865			
BH 5			.515			
A 1				.800		
A 2				.814		
A 3				.675		
A 4				.808		
BF 1					.695	
BF 2					.844	
BF 3					.854	
BF 4					.784	
BF 5					.464	
R 1						.668
R 2						.719
R 3						.844
R 4						.690
RE 1						.650
RE 2						.654
RE 3						.701
RE 4						.851
AS 1						.729
AS 2						.564
AS 3						.717
AS 4						.762
E 1						.662
E 2						.710
E 3						.606
E 4						.731
T 1						.863
T 2						.431
T 3						.852
T 4						.456

Source: Smart PLS Data Output for Outer Loading



**Cronbach’s Alpha and Composite Reliability Test**

By using Smart PLS statistical package, the researcher measured Cronbach’s Alpha and Composite Reliability (CR) in order to measure the reliability of the indicators. By using the mainstream software, most of the researchers tend to use composite reliability than CA because most of them criticize CA which is associated with lower bound values than CR (Pisinger & HJØLLUM RUDE, 2020). Most of the time, CR values can be utilized as alternatives as the values are quite higher than CA values because the differences are inconsequential.

Cronbach’s Alpha values are the most common way to check whether the internal multiple items scales are consistent or not. According to the general acceptance of the

CA value, above .70 is accepted (good), .80 is better and .90 is excellent. Anyway, the value .95 or above is not that much desirable.

Same as CA, composite reliability was also performed to analyze the internal consistency of the items. The desirable level of the CR values starts at .60 and the acceptable and preferable range is .70 as for the CA value. According to the researchers, .90 or above is not desirable.

By referring to the details generated by the Table 15, the Cronbach’s alpha values which estimate the reliability and the internal consistency of the composites scores. According to the statistics, none of the dimensions have get negative numbers and it depicts that there is no wrong with the data set.

**Table 06: Cronbach’s Alpha and Composite Reliability Test Interpretation**

	<b>Cronbach’s Alpha</b>	<b>Composite Reliability (rho_a)</b>	<b>Composite Reliability (rho_c)</b>	<b>Average Variance Extracted (AVE)</b>
Check in/out	.774	.699	.619	*.438
Security	.633	.589	.582	.518
Baggage Handling	.694	.691	.630	.579
Ambience	.778	.785	.858	.603
Basic Facilities	.882	.782	.799	*.471
Tourist Satisfaction	.903	.910	.917	*.362

*Source: Smart PLS Data Output for Cronbach’s Alpha and Composite Reliability Test*

By referring to the details generated by table 15, the Cronbach’s alpha values which estimate the reliability and the internal consistency of the composites scores. According to the statistics, none of the dimensions have get negative numbers and it depicts that there is no wrong with the data set. The first variable of the model; Check in/out has .774 CA value which is in acceptable boundary. As for the second dimension of the independent variable, Security has gained .633 and since it is below .70, the internal consistency of the particular dimension id low. Baggage Handling dimension also has denoted .694 which is a

very much close value to the common acceptable value. The rest of the two values of Ambience and Basic Facilities have carried out accepted CA values which are greater than .70 and they denote orderly .882 and .903. As for the International Tourist Satisfaction, the CA value is .903, which can be reliably accepted for the reliability measures.

According to the composite reliability values of the variables, the first three dimensions of the model which are Check in/out, Security and Baggage Handling carry values that lower than .70 and they can be orderly presented as .699, .589 and .691. Among

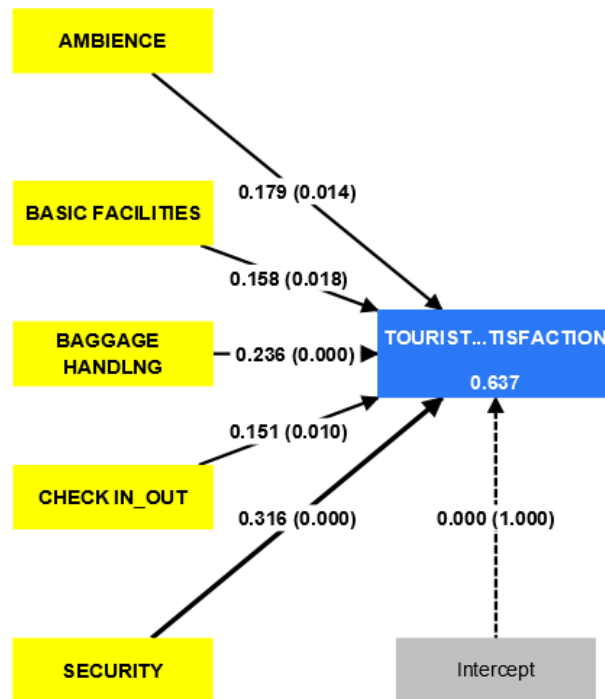


them only Security dimension resulted CR value which is at the satisfactory level while check in/out and Baggage Handling dimensions resulted slightly low values. But all other variables including dependent variable have resulted fairly high values for the Ambience (.785), Basic Facilities (.782) and a strong value for Tourists Satisfaction (.910).

### Regression Analysis

Regression analysis can be identified as a statistical method which is used for

measuring the relationship between dependent variables and independent variables. Moreover, it measures the strength of the relationship between these two variables and sorts out which of these variables have an impact to the each one. Furthermore, it quantifies which factor/s does/do matter the most. In such a scenario, the researcher has been run regression analysis through Smart PLS statistical package.



**Figure 02: PLS - SEM Output**

Source: Graphical Output of Regression Analysis from Smart PLS

According to the above regression output, it has represented each variable's standardized coefficient that it generated. By looking at those standardized coefficient values, each of these values has a relationship on dependent variable. None of the standardized coefficient values have minus values and it means that all relationships with the dependent variable (which is international tourist satisfaction here) are positive. The researcher has generated the P values for each variable, and

it helps to determine the significance value of each variable. All above discussed matters are concluded in the Table 07 and respective variables, standardized coefficient, T values and P values.



**Table 07: Coefficients Final Results Interpretation**

	Unstand. Coef.	Stand. Coef.	SE	T value	P value	2.5 %	97.5%
Check in/out	0.151	0.151	0.057	2.622	0.010	0.037	0.264
Security	0.316	0.316	0.065	4.865	0.000	0.188	0.445
Baggage Handling	0.236	0.236	0.064	3.699	0.000	0.110	0.363
Ambience	0.179	0.179	0.072	2.483	0.014	0.037	0.322
Basic Facilities	0.158	0.158	0.066	2.398	0.018	0.028	0.288
Intercept	-0.000	0.000	0.050	0.000	1.000	-0.099	0.099

Source: Smart PLS Summary Coefficients Final Results

According to the above statistical output, the P value has been obtained by each and every variable. The highest P value has been carried out by Basic Facilities dimension which can be described as the lowest significant variable in the model. Also, T value of the BF is 2.398 which is the lowest T value of the model. It has obtained 0.158 of beta coefficient and it is the lowest beta value of the model which is described as the lowest powered dimension that can affect each individual independent variable to dependent variable. When further researching about the statistics, the next dimension which obtained the highest P value is Ambience (0.014). further it has 2.483 T value and 0.179 of standardized coefficient. It depicts that after the Basic Facilities dimension, Ambience is the second dimension which is identified as the second lowest powered dimension that can affect each individual independent variable to dependent variable. Moving to the Check in/out dimension in the model, it has 0.010 of P value and 2.622 of T value which can be identified as the third dimension of independent variables that can minimally affect to the other variables.

**Correlation Co – efficient**

In path analysis, path coefficient can be identified as partial correlation coefficient which is in between both independent and dependent variables. Correlation Co – efficient is simply partial coefficient partitioning into the measurements of the independent and dependent variables. That

can be affected either directly and indirectly. Correlation coefficients are frequently used in socio - science, management and finance related modules to assess the degree of association between two variables, factors, or set of data.

The correlation coefficient can be identified as a statistical measurement of the strength of a linear relationship between two different variables. Correlation values can be ranged from -1 to 1 correlation of coefficient -1 depicts a perfect negative or inverse. Correlation of coefficient 1 depicts perfect positive correlation. Correlation of coefficient 0 means that there is not any relationship between variables.

According to Table 08, path coefficient values have been generated for each independent variable with dependent variable with respective original sample values, sample mean values, standard deviation, T statistics and P values. In order to measure the significance level by using Smart PLS statistical package, T statistics for all the variables have been constructed by enabling Smart PLS bootstrapping function. Each path

coefficient value has spread between -1 and +1 and positive relationships of the estimated pathway coefficients are close to +1. On the other hand, weak relationships of the estimated pathway coefficients are close to -1. Before going to measure the nature of the relationship, it's better to have an idea about



the ranges of the correlation coefficient values.

By considering above correlation coefficient values, pre-determined hypothesis and

relevant path coefficient values for each hypothesis has been represented. Then the researcher can easily denote whether the hypothesis below can be accepted or not.

**Table 08: Path Coefficients Results Interpretation**

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Value
Check in/out -> ITS	0.151	0.163	0.097	1.546	0.122
Security -> ITS	0.316	0.309	0.080	3.963	0.000
Baggage H -> ITS	0.236	0.220	0.111	2.135	0.033
Ambience -> ITS	0.179	0.204	0.099	1.811	0.070
Basic F -> ITS	0.158	0.162	0.073	2.174	0.030

Source: Path Coefficients Results by Smart PLS

**Table 09: Hypothesis Acceptance and Rejection**

Hypothesis	Path Coefficient Value	T – Statistics	P – Value	Hypothesis Acceptance or Rejection
H1	0.151	1.546	0.122	Rejected
H2	0.316	3.963	0.000	Accepted
H3	0.236	2.135	0.033	Accepted
H4	0.179	1.811	0.070	Rejected
H5	0.158	2.174	0.030	Accepted

Source: Smart PLS data output for Path-coefficient, P and T values

## Discussion

### The nature of each existing airport efficiency dimension with tourist satisfaction

As for the first research question, the researcher supposed to measure the relationship of each airport efficiency dimension with international tourist satisfaction. Based on the path coefficient values, the relationship has varied from dimension to dimension. H1 assumes that there is a positive relationship in between Check in/out and International Tourist Satisfaction. Considering H2, it assumes that there is a positive relationship in between Security and International Tourist Satisfaction. Path coefficient value for the security dimension is 0.316 which can be

identified as a weak positive relationship. As for the H3, it consists of 0.236 path coefficient value, and it can be denoted as weakly positive relationship between Baggage Handling and International Tourist Satisfaction. Baggage Handling represents 0.033 significant value denoting that it is statistically significant. The researcher assumes that there is a positive relationship between Ambience and International Tourist Satisfaction as the 4th hypothesis. By reviewing path coefficient values, it can be said that there is a very weakly positive relationship between the above two variables since it holds 0.179 of  $\beta$  value. The results have proved that Ambience is not that much of good dimension to measure the airport efficiency as some researchers have shown in their research. H5 assumes that there is a positive relationship between Basic Facilities



and International Tourist Satisfaction. According to the H5 the researcher accepted the hypothesis because it is associated with 0.158 of  $\beta$  value.

### **The most influential airport efficiency dimension which affect for the satisfaction of the international tourists**

In order to find the most influential (most significant) airport efficiency dimension affected for the international tourist satisfaction, the researcher has analyzed each P values on dimensions generated under the path coefficient values by Smart PLS Statistical Package.

Security dimension carries 0.000 of value which is the highest significant value among other dimensions. The reliability and the safeness of any organization is based on security measures that the particular organization practices. When it

comes to commercial air transportation, it should be associated with high level of security (Frederickson & LaPorte, 2002). When taking 'Security' as a more concerned and prioritized matter, even the researchers in 90s era have mentioned that the reliability of air transportation relies on airport security (Hargrove & Glidewell, 1990).

When studying the general comments of the international tourists, they have specifically mentioned that the easter attack incident (2019), unstable political situation and civil unrest (2022 – 2023) have affirmed that 'security' emerges as a significant component when it comes to airport efficiency. In such a context, researcher further confirms that maintaining high security measures at Bandaranaike International Airport is a crucial matter.

According to the above statistical information, the researcher identifies that 'Security' is the most influential airport efficiency dimension for the satisfaction of international tourists who utilize Bandaranaike International Airport because the P value gained under the Security

dimension is 0.000 which can be considered as the highest statistically significant value.

As for the perception of researchers; Adler and Gillen, the relative significance of each relationship of each airport efficiency dimension is very much important as a multidimensional approach in order to ensure the delightfulness of tourists and remain competitive in the industry ((Adler et al., 2014; Gillen, 2011; Skouloudis et al., 2012; SOTM, 2020) The researcher has based Expectancy Disconfirmation Paradigm which emphasizes that customers have pre-purchase expectations before purchase goods and services and once they have done with it, the satisfaction level changes according to the performance of the products or services that they acquire ((Spreng & Page Jr, 2003). In such a scenario the study has proved that maintaining a quality and reliable service at BIA is very much important to retain and tend tourists to revisit the island.

### **Recommendations**

#### ***Re-design Passenger Service Management Protocols***

Allocating employees and providing continuous service once tourists disembark from the aircraft to leave the airport is very much essential in this regard. The whole image of the airport, island and tourism industry depends on the physical setup and employees. In order to maintain good customer care services at the airport BIA has been launched several training programs with collaboration of Sri Lankan Airlines.

#### ***Demand Sri Lanka through Bandaranaike International Airport***

BIA can create attractive brochures, booklets and leaflets including places to visit Sri Lanka, foods to taste, festivals, basic transportation modes and rest of the needed information. In this regard, BIA can collaborate with Sri Lanka Tourism Development Authority, Sri Lankan Tourism Promotion Bureau, star class hotels and leading travel agencies and events companies in the country.



### ***Uplifting Ancillary Services around Bandaranaike International Airport***

Since airport functioning as a place where the air transportation and ground transportation combine together, surface transportation modes such buses, taxis, rental car services should be provided additionally. At the present, there can be seen a shut down railway station at the airport named 'Airport Railway Station-Katunayake'. If the railway department can renovate and restart the railway operations at there, it would be a great help for the tourists who plan their trip to Kandy.

### **Conclusion**

Bandaranaike International Airport is the largest and widely operated international airport in Sri Lanka. In very recent years, the quality of the service and physical setup of the BIA have been researched by many academics and practitioners. The airport has been categorized as a three-star airport and it has been listed out as top ten worst airports in Asia. by identifying the research gap in between the airport efficiency and the international tourist satisfaction, the researcher started to proceed the study. With the help of previous research, researchers figured out research problems and research questions. Along with this, the conceptual framework and hypothesis are developed. After defining the population, sample size and technique, data and data collecting

method, the researcher created appropriate indicators under each independent and dependent variable. Associating quantitative method, researcher designed the research and data collected from international tourists at the arrival lounge of BIA. By using error-free filled questionnaires, data analysis has been done by using Smart PLS and SPSS Statistical Packages. Ultimately, the relationships between each airport efficiency dimension and intentional tourist satisfaction measured and the most influential airport efficiency dimension identified as the findings of the research.

As a conclusion of the analysis, the researcher has found that all the relationships among Airport Efficiency Dimensions and International Tourist Satisfaction are positive relationships. In here, all the hypothesizes have proved as correct because all of them associated with positive relationships. Except 'Check in/out' and 'Ambience', all other three dimensions are statistically significant and further it denotes that 'Security', 'Baggage Handling' and 'Basic Facilities' dimensions can directly affect for the International Tourist Satisfaction at Bandaranaike International Airport. According to the analysis results, the researcher proved that 'Security' is the most influential dimension which can be affected for the International Tourist Satisfaction at Bandaranaike International Airport.



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