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Research Paper

Passenger Satisfaction on Mobile App Based Taxi Services Evidence from Colombo Metropolitan Area in Sri Lanka

W.P.A.P. Rangana[1], P.W.G. Madhushani[2], D.G.N.D Jayarathna[3]
[1]*Department of Logistics and Transportation, Faculty of Management, Humanities and Social Sciences, Colombo International Nautical and Engineering College (CINEC Campus), Malabe, Sri Lanka;*
[2]*Department of Logistics and Transportation, Faculty of Management, Humanities and Social Sciences, Colombo International Nautical and Engineering College (CINEC Campus), Malabe, Sri Lanka;*
[3]*Department of Logistics and Transportation, Faculty of Management, Humanities and Social Sciences, Colombo International Nautical and Engineering College (CINEC Campus), Malabe, Sri Lanka;*
Corresponding Author: W.P.A.P. Rangana

ABSTRACT *-Transportation is a sector which has been evolving throughout pre historic eras, where its absence is a great deprivation to meet the needs and wants of population. As transportation has a derived demand, people in perpetuum, generate trips either home based, or non-home based. Amongst all the conventional taxi services which we name as yellow cabs in other countries, app-based taxi services play a crucial role in day today life of human beingin Sri Lanka as well. Hence, the study focuses on determining the factors affecting the choice of app-based taxi services by passengers where their ultimate satisfaction is accomplished.The study will have two objectives where it conclusively needs to accomplish. I.e.; determining the factors affecting the passenger satisfaction and secondly to what extent each determinant will have an impact on passenger satisfaction. To achieve these two objectives, researcher collected data from 300 passengers under simple random sampling technique, from Colombo Metropolitan area where majority of establishments take place, also having lofty land values and lack of space even for parking. A factor analysis as well as a regression analysis were conducted. one-way ANOVA test was also used to identify the impact of demographic variables. Regression analysis concluded that mainly* ***Convenience*** *and* ***the Service Performance*** *are significantly affected on the satisfaction of mobile app-based taxi services.*
Key words: *app-based taxi services, passenger satisfaction*

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I. INTRODUCTION

A. Back ground of the study

The taxi service industry in Sri Lanka has been seeing a phenomenal growth in the past 4-5 years. Informal Public Transport (IPT) is a widespread social phenomenon in Sri Lanka which over the last three decades has become an integral part of the land transport sector (Kumarage, 2010). Importantly in Sri Lanka, when it comes to passenger transportation there are people who commute trips daily from their residence to the employments. with inevitable population growth in many of the cities the need of putting the effort for an easy flow of people, vehicles and the reduction of self-drivers and promoting public transport modesis becoming essential. But in Sri Lanka, due to unbearable inconvenience and the issues raised in public transport systems, people move away from that towards convenience, cost effective transport modes such as taxies. Therefore today, with the advanced growth of technologies related to global positioning system (GPS), a competitive market has been created for mobile app-based taxi services.

B. Significance of the research

With the expansion of the capability of the engine automobiles in the nation, utilizing taxi benefit is a standout amongst other elective alternatives. By utilizing taxis, travellers can go where ever they need with no questions. When passengers are facing issues like fewer parking spaces, expensive parking fees, overcrowded buses and trains and high fuel consumption, passengers are precluded to travel by their specific modes. At that kind of situation most passengers are using taxis rather than other transportation modes. Among the available taxies, today the demand for mobile app-based taxi services has been increased than any other period in the past.

Therefore, researcher expects thatexamination of the factors affecting on their satisfaction level on mobile app-based taxi services as it will support to understand the consumer behavior,will be very important to formulate strategies in this industry as the environment has become more competitive.and also, for the policy makers to mitigate the issues arising with parking spacesand high level of parking fee.

C. Research Problem and objectives

A study in an area like "mobile app-basedservices" is a big league since even though conventional taxi services were in the play for like good 10 – 15 years back, now mobile app-based taxis have a highly competitive and a volatile market in SriLanka. These mobile app-based taxi services have also gained the potential to grow in a densely populated city like Colombo where parking has become a primary dilemma because of space crunch as well as public transport are overcrowded during peak hours. Therefore, the following research objectives are being discussed in this study.

Objective 01:
Identifying the determinants affecting on passenger satisfaction for mobile app-based taxi services.

Objective 02:
Identifying the extent at which determinant will have an impact on the level of satisfaction.

II. LITERATURE REVIEW

A. Empirical View

Taxis are cars used for public transport services providing door to door personal transport services. (Josep Maria Salanova, 2014). Basically, taxi services are referred as ride-sourcing services where it reduces the waiting time of point to point transportation. In the metropolitan areas, taxis have become an extensive mode of transportation. customers in the present era are using mobile apps to book a cab at any time and from any place in urban areas.(Kumar & Kumar, 2016).Further, studies have stated that the taxis are an adopted solution that yield the advantages of the positive characteristics of both individual vehicle transport and public transport services. (Romeu, 2014).Taxi services are also viewed as a part of a suite of transport options that serves previously unmet demand for fast, flexible, and convenient mobility in urban areas. By providing an attractive alternative to driving, these services can potentially reduce auto use, ownership, and environmental problems.(Lisa, 2014). Several empirical studies reveal that there are many areas where passengers identify as the factors affecting on the demand for mobile app-based taxi services.

B. Independent Variables

Table 01 – Literature Review for Independent Variables

Variable Number	Variable	Reference
1	Lower waiting time	(Murambi, 2014)
2	Reasonable fares per Km	(Hands, 2016)
3	Friendly driver behavior	(Heinrichsa, 2014)
4	Popularity of the app	(Rayle, 2014)
5	Service availability in various areas of the country (not only limited to urban areas)	(Aarhaug, 2014)
6	User friendliness of the app	(Romeu, 2014)
7	Weekly promotional offers	Blogger. (n.d.).
8	Comfortability	(Castillo, 2014)
9	Taxis are always available when requested	(Kishore, 2016)
10	App based taxi services are more flexible than other transport modes	(Austin, 2012)
11	App based taxi booking procedure is more easier than booking conventional taxis	(Fang He, 2015)
12	Time taken to reach the destination	(TANGPHAISANKUN, 2009)
13	Availability of card payment systems	(Lim, 2016)
14	Post and pre payment methods should be added as an option	(Leng, 2016)
15	It's very important to use Google maps or journey maps to find location(s)	(Keong, 2016)
16	Provide prompt and quick service from booking till final destination	(Matias, 2013)

C. Conceptual Framework

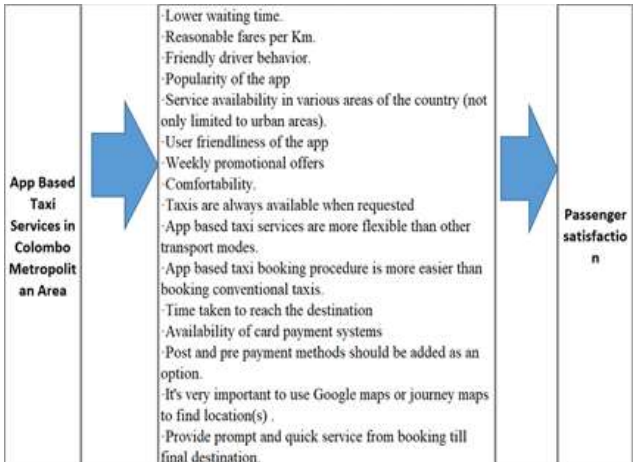

Figure 01: Conceptual Framework

III. METHODOLOGY AND EXPERIMENTAL DESIGN

A. Research Design

The research design falls in to the category of casual research where the main objective is to verify the extent and nature of cause-and-effect relationship between variables. Accordingly, the dependent variable of the paper is "**Passenger Satisfaction"**and the determinants of passenger satisfaction are considered as the independent variables. A Questionnaire was prepared with 03 sections to collect the primary data required for the study along with 16 factors those were recognized as the driving forces affecting to passenger satisfaction on app-based taxi services within Colombo Metropolitan Area in Sri Lanka.

B. Sample and the sampling technique

The sample is considered within the Colombo metropolitan area. Colombo metropolitan area was selected as the strategic location of the study, where there is higher probability of trip attraction and trip production.

Simple random sampling was bestowed as the sampling method of the research. **Simple Random Sampling** inspecting system is superior to non – irregular sampling procedure. Colombo has a hefty population compared to that of other urbanized cities in the country. Out of the Colombo population, passengers from Colombo metropolitan area was targeted and randomly selected 300 people.

C. Model Development

1) Validity and Reliability:

The reliability or the internal consistency of the collected primary data was checked by using the Cronbach's Alpha which is commonly used to verify the reliability of the scale in a multiple Likert-Scale questionnaire. Coefficient is required to be 0.6 or higher value to be reliable.(Noor, 2014). Cronbach's Alpha can be calculated using the following equation.(Taber,2017).

$$\propto_s = \frac{m_w\left(\sum_s \lambda_{s\frac{1}{2}} - 1\right)}{\left(\sum_s \lambda_{s\frac{1}{2}} (m_w - 1)\right)} \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (1)$$

2) Data Analytical Method:

Software has been used to analyse the gathered data which is called as SPSS 16.0 (Statistical Packages for Social Sciences). A descriptive analysis has been conducted to identify the relationship of the explanatory variables and the response variable.

3) Factor Analysis:

This is a statistical instrument which is used to find factors among observed variables.

This can be divided in to two categories, exploratory factor analysis and confirmatory factor analysis. (Taber, 2017). In this study the exploratory factor analysis method is used to analyse data.

To make the data set accepted KMO value should be greater than 0.6and the Bartlett's test should be significant.KMO measure the sampling adequacy of the research. KMO index can be computed as follow.

$$KMO = \frac{\sum_i \sum_{j \neq i} r_{ij}^2}{\sum_i \sum_{j \neq i} r_{ij}^2 + \sum_i \sum_{j \neq i} a_{ij}^2} \ldots\ldots\ldots\ldots\ldots (2)$$

Communalities are the proportion of variance accounted for the common factors of a variable. Communalities scores range from 0 to 1. Value of 1 means that common factors will explain all variables and a value of 0 means that common factors will not explain all variables.Initial solution table explained the total variance. Eigenvalue is the total variance described by each factor. Eigenvalues that is less than one does not have enough total variance explained to represent a unique factor.

4) Regression Analysis

Effect, impact or influence of variables is analysed by using
regression analysis. If there is one independent variable, it is considered to be a simple regression model. If there are more than one independent variable, that is multiple regression model. As a linear model, we apply Classical Linear Regression model (CLRM). This is called Ordinary Least Square (OLS) model. Further this is called "Gaussian Model". (Gujarati, 1978)

IV. DATA ANALYSIS AND FINDINGS

A. Reliability

If the value of Cronbach's alpha is higher than 0.6 or 0.7, data are in an acceptable level.

Table 02: Reliability for Full Data Set

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.885	0.883	20

Source: Research data

According to the table 02, the value of Cronbach alpha which in this study is 0.885 and reflects in the acceptance region of the measuring instrument. It indicates the presence of internal consistency with respect to the precise sample.

Table 03: Results of KMO and Bartlett's Test

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.904
Bartlett's Test of Sphericity	Approx. Chi Square	2.06E+03
	Df	120
	Sig.	0

Source: Research data

The relationship of each variable as well as the strength among the variables is measured using Kaiser-Meyer-Olkin (KMO) and Bartlett's test.KMO test statistic measure the sample adequacy. In this test KMO test statistic value is 0.904 which is greater than 0.6, concluding that sample is adequate in this study. With reference to the given test statistic value and as it is more than 0.6.

The hypothesis is,

H_0: Correlation matrix is an identity matrix.
H_1: Correlation matrix is not an identity matrix

In table, P-value of the Bartlett's test is 0.000, therefore null hypothesis is rejected. It can be determined that, correlation matrix is not an identity among variables used in factor analysis indicating that there is a high strength in relationships.

B. Communalities

Communalities indicate the amount of variance in each variable that is accounted for. Variables which fit well with factor solutions are determined by higher extraction values (more than 0.6) while small values should possibly bedropped from the analysis since they are considered as not fitted.

For the variables to be well-fitted the extraction value should surpass 0.6. A variability value of 0.41% and a value of 0.34% is portrayed by the Popularity of the app and Weekly promotional offers factors accordingly

According to table 1.4, Eigenvalues that is less than one does not have enough total variance explained to denote a unique factor, therefore the Eigen values that are less than oneisremoved from the analysis.

Table 04:Communalities

Communalities		
	Initial	Extraction
Lower waiting time	1	0.58
Reasonable fares per Km	1	0.652
Friendly driver behavior	1	0.578
Popularity of the app	1	0.408
Service availability in various areas of the country (not only limited to urban areas)	1	0.613
User friendliness of the app	1	0.593
Weekly promotional offers	1	0.35
Comfortability	1	0.507
Taxis are always available when requested	1	0.643
App based taxi services are more flexible than other transport modes	1	0.688
App based taxi booking procedure is more easier than booking conventional taxis	1	0.716
Time taken to reach the destination	1	0.545
Availability of card payment systems	1	0.611
Post and pre payment methods should be added as an option	1	0.604
It's very important to use Google maps or journey maps to find location(s)	1	0.629
Provide prompt and quick service from booking till final destination	1	0.616
Extraction Method: Principal Component Analysis.		

Table 05:Total variance explained

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.632	41.45	41.45	6.632	41.45	41.45	3.819	23.866	23.866
2	1.512	9.449	50.898	1.512	9.449	50.9	2.898	18.111	41.977
3	1.19	7.436	58.334	1.19	7.436	58.33	2.617	16.357	58.334
4	0.892	5.572	63.906						
5	0.748	4.675	68.581						
6	0.69	4.313	72.894						
7	0.635	3.968	76.862						
8	0.597	3.729	80.59						
9	0.511	3.192	83.782						
10	0.464	2.897	86.679						
11	0.431	2.696	89.376						
12	0.412	2.572	91.948						
13	0.367	2.295	94.243						
14	0.335	2.091	96.334						
15	0.33	2.065	98.399						
16	0.256	1.601	100						

Extraction Method: Principal Component Analysis.

Source: Research data

SPSS analysis has identified 16 factors before the extraction within the data set. The first section of the above table shows the Initial Eigenvalues. Among them, 3 factors of which total initial Eigenvalues exceeds one have been extracted in the extraction sums of squared loading section of the above table. Moreover, according to the '% of variance' column of the extraction sums of squared loadings section, factor 1, 2 and 3 together accounts for 58.335%.

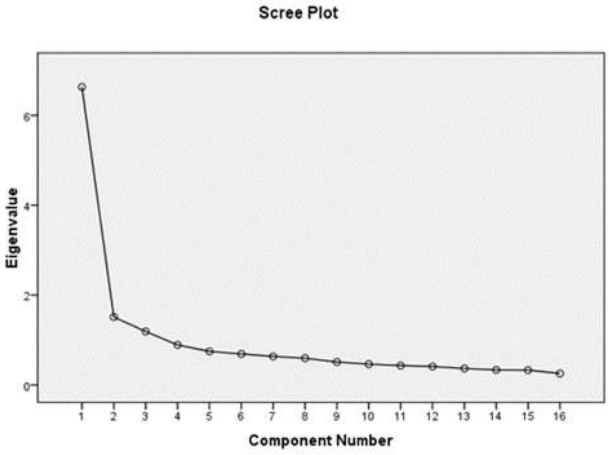

Figure 02: Scree plot

Source: Research data

Referring to the above figure, there is a sharp turn (elbow) after 3rd Eigen value. Hence the Scree plot denotes that those 3 factors explained highest variability because the graph starts to flatten after factor 3. The rest of the factors show a little fluctuation and are likely to be insignificant.

Table06:Rotated Component Matrix[a]

Rotated Component Matrix[a]

	Component		
	1	2	3
Lower waiting time	0.673	0.085	0.346
Reasonable fares per Km	0.63	0.117	0.492
Friendly driver behavior	0.713	0.049	0.26
Popularity of the app	0.303	0.476	0.299
Service availability in various areas of the country (not only limited to urban areas)	0.749	0.219	-0.056
User friendliness of the app	0.635	0.289	0.327
Weekly promotional offers	0.344	0.375	0.302
Comfortability	0.578	0.403	0.103
Taxis are always available when requested	0.761	0.245	0.058
App based taxi services are more flexible than other transport modes	0.205	0.289	0.75
App based taxi booking procedure is more easier than booking conventional taxis	0.061	0.208	0.818
Time taken to reach the destination	0.254	0.185	0.668
Availability of card payment systems	0.218	0.746	0.084
Post and pre payment methods should be added as an option	0.079	0.757	0.156
It's very important to use Google maps or journey maps to find location(s)	0.088	0.696	0.37
Provide prompt and quick service from booking till final destination	0.448	0.615	0.193

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Source: Research data

Table 06 shows that how, all questions can be divided in to small groups as per the characteristics they belong. And the results of the factor grouping in factor one is similar in magnitude. Thus, factors are rotated to gain meaningful factors. Factor rotation has been commenced according to the Varimax with Kaiser Normalization method.

With reference to the rotated component matrix the researcher uses it to mitigate the number of factors to be influenced on passenger satisfaction (Dependent variable). According to the rotated factor loadings, 16 variables can be categorized for extracted three factors based on the highest value of each variable in the table 06, The identified variables have been named based on their characteristics as follows.

Component 01: Service Performancefactor

Factor 01 = f {Lower waiting time, Reasonable fares, Friendly driver behaviour, Service availability in various areas of the country (not only limited to urban areas), User friendliness of the app, Comfortability, Taxis are always available when requested}

Component 02: Technological Feasibility factor

Factor 02 = f {Popularity of the appWeekly promotional offers,Availability of card payment systems,Post and pre-payment methods should be added as an option,it's very important to use Google maps or journey maps to find location(s)**,** service from booking till final destination}

Component 03: Conveniencefactor

Factor 03 = f {App based taxi services are more flexible than other transport modes, App based taxi booking procedure is easier than booking conventional taxis, Time taken to reach the destination}

C. Hypothesis Testing

Hypothesis test for component 01(Service Performance)

H0: Service Performance factor is not reliable

H1: Service Performance factor is reliable

Table 07 Reliability Test statistics for component 01

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.86	0.865	7

Null hypothesis has been rejected as the Cronbach's Alpha value surpasses 0.6 which sum up to the value of 0.86, which means the **component 1 is reliable.**

Hypothesis test for component 02 (Technological feasibility)

H0: Technological feasibility factor is not reliable.

H1: Technological feasibility factor is reliable.

Table 08 Reliability Test statistics for component 02

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.803	0.804	6

Null hypothesis has been rejected, as the Cronbach's Alpha value is 0.803, which is concluded to be more than 0.6 and therefore the component 2 also reliable

Hypothesis test for component 03 (Convenience)

H0: Convenient factor is not reliable.

H1: Convenient factor is reliable.

Table 09: Reliability Test statistics for component 03

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
0.767	0.767	3

Null hypothesis has been rejected, as the Cronbach's Alpha value is 0.767 and Component3 is also confirmed tobe reliable.

D. Regression Analysis

The effect of independent variables on the dependent variable (Strategic souring) areanalysed by using regression analysis.

Table 10: Model Summary of Regression analysis

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.234[a]	0.055	0.045	0.59188

b. Dependent Variable: Satisfaction

Source: Research data

Referring to the table 10, multiple correlation which is given by R is 0.234 which indicates that independent variables are having a considerable association jointly with dependent variable. R square value is 0.055 which determines that only 5.5% of passenger satisfaction has been covered by the regression model. But still the model is valid as the Probability of F test statistics is significant ($P \leq 0.05$) as per the below table (Table 11)

Table 11: ANOVA of Regression analysis

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.949	3	1.983	5.661	.001[a]
	Residual	102.645	293	0.35		
	Total	108.594	296			

Source: Research data

According to the above table 11, the probability of F test statistics is 0.001indicating that, the model is jointly significant.

Table 12: Individual Impact of each variable

Model		Unstandardized Coefficients		Standardized Coefficie	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.022	0.219		13.809	0
	Service_Performance	0.102	0.06	0.123	1.683	0.093
	convenience	0.124	0.056	0.159	2.224	0.027
	Technological_feasibility	-0.018	0.062	-0.021	-0.289	0.773

a. Dependent Variable: Satisfaction

Source: Research data

The significance value of the variable, Technological feasibility is greater than 0.05 engraving the fact that the **Technological feasibility** does not have an individual effect on passenger satisfaction. The P value of Convenience is significant, proving that **convenience** variable has an individual effect on passenger satisfaction. And, also the P value of **Service performance** is marginally significant under 10%, therefore service

performance and convenience factors have an individual effect on passenger satisfaction. The β values of Service performance and Convenience is positive 0.102 and 0.124 accordingly interpreting a positive effect on the passenger satisfaction. While, Technological Feasibility have a negative β value, it negatively effects on the passenger satisfaction. But it is insignificant. Based on received β values, structure of the model can be constructed as follows.

Structure of the model:

Passenger satisfaction = $\beta o + \beta 1$ Service Performance $+\beta 2$ Convenience $-\beta 3$ Technological Feasibility$_{+}\varepsilon_i$

Passenger satisfaction = 3.022 + 0.102 Service Performance +0.124 Convenience – 0.018 Technological Feasibility $_{+}\varepsilon_i$

d. Diagnostic Tests

1. Durbin Watson Test Statistics

Table 13: Durbin Watson Test Statistics

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.234[a]	0.055	0.045	0.59188	1.805

a. Predictors: (Constant), Technological_feasibility, Convieniece, Service_Performance

b. Dependent Variable: Satisfaction

Durbin Watson test statistics is 1.805, indicates that there is no auto or a serial correlation.

2. Normality test of residuals

Table 14: Normality Test of Residuals

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Standardized Residual	0.039	297	.200*	0.982	297	0.001

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

The sig. (P) value of Kolmogorov – Smirnov is greater than 0.05, indicates that Data set is normal.

Multicollinearity

Table 15: VIF Test Statistics

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.022	0.219		13.809	0		
	Service_Performance	0.102	0.06	0.123	1.683	0.093	0.606	1.651
	Convenience	0.124	0.056	0.159	2.224	0.027	0.634	1.578
	Technological_feasibility	-0.018	0.062	-0.021	-0.289	0.773	0.596	1.677

a. Dependent Variable: Satisfaction

VIF Test statistic values are less than 10, indicates that there is no multicollinearity issue.

3. Heteroscedasticity

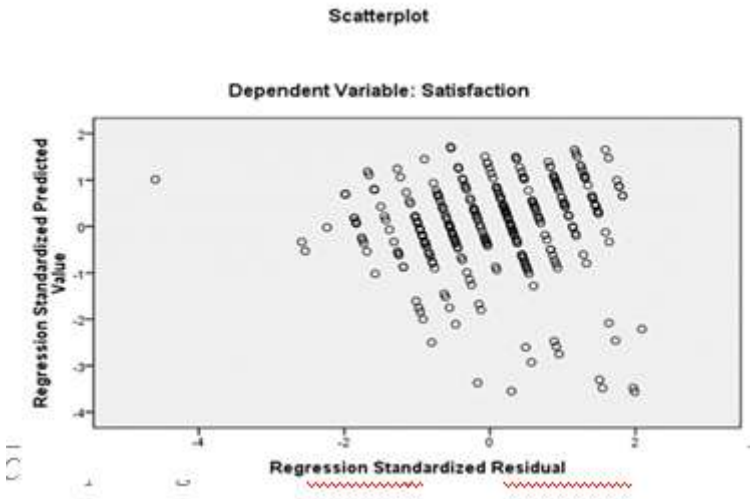

Figure 03: Scatter Plot

The standard residuals with respect to standard predicted values are distributed randomly without a predicted pattern. Showing the fact that variance of residuals is constant. And no heteroscedasticity problem.

e. Impact of demographic variables on passenger satisfaction – One Way ANOVA Test results

1. Employment Field

Table 16: ANOVA test results on employment field

ANOVA

Satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.432	4	0.858	2.382	0.052
Within Groups	105.162	292	0.36		
Total	108.594	296			

Table 16 indicates that, Employment Field has an impact on passenger satisfaction for mobile app-based taxi services

2. Purpose of the Journey

Table 17: ANOVA test results on Purpose of the journey

ANOVA

Satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.031	2	2.015	5.667	0.004
Within Groups	104.563	294	0.356		
Total	108.594	296			

Table 17 indicates that, Purpose of the journey has an impact on passenger satisfaction for mobile app-based taxi services

3. Types of Vehicles

Table 18: ANOVA test results on Types of vehicles

ANOVA

Satisfaction					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.121	4	1.28	3.613	0.007
Within Groups	103.473	292	0.354		
Total	108.594	296			

Table 18 indicates that, Types of vehicles has an impact on passenger satisfaction for mobile app-based taxi services

V. CONCLUSION

As bestowed by the findings of data analysis major demographic data was analysed according to the descriptive statistics. As per these research findings, more than half of the sample population (51.2%) are in the Colombo Metropolitan area, male population is dominating the app-based taxi services compared to female population of 48.8%. Most of the commuters were in the age category of 18-25 which represents the generation Z. And, when analysing about the occupation category of the passengers, majority of them are employed. Three-wheeler is the most preferred mode by the passengers with 53.5%. It was further found that most of the commuters use app-based taxis weekly and accounts for 42.5% of the total sample population and preponderance of passengers use these taxi services to satisfy their personal travel purposes which is about 205 commuters of 300 plus population. Majority of the personal vehicle owners have a less preference of driving their own personal vehicle due to the traffic congestion situation in peak times as well as due to the all or nothing concept which is heavily visible in the roads.

The primary objective of this research is to identify the factors affecting on passenger satisfaction for mobile app-based Taxi service in Colombo metropolitan area. reliability test concluded that all the independent and dependent variables are reliable as Cronbach's Alpha values surpass 0.6. Adequacy and validity of the sample was ensured through KMO and Bartlett's tests. Through factor analysis, 16 components have been set in to 3 reliable components. They were **Service Performance, Convenience and Reliability**

The secondary objective was to identify the impact of each determinant on passenger satisfaction for mobile app-based taxy services.Regression analysis revealed that, the above-mentioned factors (Service performance, Convenience and Reliability) identified through factor analysis, are jointly affected on passenger satisfaction as the F Test was significant. But Convenience and the service performance factors are individually affected. the modal summary it was detected that independent variables are having a considerable association jointly on passenger satisfaction.R value is 23.4% indicates that independent variables are having a considerable association jointly with dependent variable, passenger satisfaction.

One-Way ANOVA test results indicated that the employment filed, purpose of the journey and the type of vehicle booked for the journey are having a significant influence on passenger satisfaction.

VI. RECOMMENDATION

Respondents were requested to give their proposals towards the end of the questionnaire and subsequently, few respondents underscored the significance of the taxi service and give their suggestions to improve the level of passenger satisfaction. Hence the subsequent recommendation may supportive to build a strong taxi service not only in Colombo metropolitan area but also throughout the country it was thoughtful to write about the opinions of the passengers themselves.

Most of the passengers have mentioned about handling customer complaints promptly, since this taxi booking procedure is dealt through an application and all the businesses are operating via virtual offices. One of the most important recommendations of commuters was to introduce taxi posts for elderly people. Since this elder generation is not familiar with usage of smart phones it was an ideal opinion of the respondents. Another significant recommendation was to regulate the taxi service industry on the perspective of driver age to ensure passenger safety and security.

However together with those recommendations it is important to mention that government involvement in regulating taxi industry is highly important. To minimize the existing congestion situation, an ideal solution is to introduce exclusive right of ways for taxis during peak hours. And, the issuing of taxi license should be addressed in a way that under aged and over aged people should not get driving license to ensure the passenger safety.

Furthermore, the usage of these app-based taxi services to car pool the trips will affect in a positive way to the heavy traffic conditions prevailing in the Colombo metropolitan area.

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