PASSENGERS' VIEW ON APP-BASED RIDE HAILING SERVICES IN SRI LANKA

H. Nimna M. Fernando[1], Niranga Amarasinghe[2],
Faculty of Engineering, Sri Lanka Institute of Information
Technology, New Kandy Road, Malabe, Sri Lanka.
[1]*EN20007638@my.sliit.lk*, [2] *niranga.a@sliit.lk*

ABSTRACT - With the increased use and development of technology and the internet, the use of ride-hailing services had increased drastically over the years. These App-Based Ride-Hailing Services (ABRHS) have become an essential part of traffic services all around the world. The evaluation of passengers' satisfaction regarding various attributes provided to them is essential to the long-term success of these service platforms. Therefore, the current study aims to identify the significant factors influencing passengers' satisfaction of ABRHS for frequent, moderately frequent, and infrequent passengers in Colombo, Sri Lanka. The objectives of this study are to identify the factors affecting the passengers' satisfaction for frequent, moderately frequent, and infrequent passengers and from those obtaining the most significant and the least significant factors, to identify the challenges faced by passengers when using these services, and what characteristics need to be improved and upgraded in the existing services. The data are collected through an online questionnaire and hard copies of the questionnaire are printed out and these hard copies are distributed among the individuals who are using these app-based ride-hailing services. The results would be then analyzed using statistical methods such as multiple regression analysis and the Chi-square test. The results can be used to further develop and improve app-based ride-hailing services and increase the passenger's intentions to continue using these services in the future.

Keywords: App-based ride hailing services; passengers' satisfaction; frequent, moderately frequent and infrequent passengers; overall satisfaction

1. INTRODUCTION

ABRHS are mobile applications that link passengers with drivers who own a vehicle. These services offer door-to-door transportation, and these apps provide various features which ensure proper service to the passenger. In addition, these services are cheaper and save more time, especially during peak hours, than the traditional means of transport such as licensed taxis and public transportation. The growth of population in urban cities had caused more congestion and expensive parking spaces, therefore ABRHS were introduced, and they had the potential to eliminate these problems [1]. In Sri Lanka, there are many platforms that offer ABRHS, and the two main apps that have a majority of users are UBER and PickME, and these act as the medium between the passengers and the drivers. Since they were introduced back in 2015, the number of users kept on increasing and has indicated an annual growth rate of about 1.62% [2]. The evaluation of the passengers' satisfaction with ride-hailing service quality is extremely important for the long-term success of these services because choosing of mode of transport directly relates to the behavior patterns of humans [3].

Studies related to passenger satisfaction and perception towards ABRHS are very limited in developing countries including Sri Lanka [4]. The passengers' satisfaction depends mainly on key performance indicators or factors such as socio-demographic characteristics (gender, age, income, etc.), service attraction attributes (safety, comfort, security, etc.), network coverage, and price [5]. The significance of these factors can vary from one place to another, therefore identifying what factors are the most affecting the passengers' satisfaction is crucial when developing and improving ABRHS. Once, these factors are identified the study could be useful in comprehending customers' behavior and identifying the areas to improve in the existing services. Therefore, this study attempts to identify those significant factors influencing passengers' satisfaction.

It was found from the literature survey that research conducted in ABRHS is rare in developing countries such as Sri Lanka. Only two studies could be found in which conducted in Colombo, Sri

Lanka; where factors affecting the millennial selection of mobile taxi ordering were found in the first study [6] and the evaluation and identification of the factors that impact selecting a Mobile App-Based Taxi service in Sri Lanka (User's Perspective) were done in the other study [3]. However, those studies are not focused on passenger satisfaction, network coverage, and challenges faced when using these services. Furthermore, a few recommendations will be given to improve and enhance the quality of the existing services by taking into consideration the key outcomes of the research. The results of this research could bring valuable and new insights in developing and promoting ABRHS.

2. METHODS

In this study, the data were collected through both online and paper-based methods using a questionnaire. The questionnaire was made focusing on different user groups such as frequent, moderately frequent, and infrequent. A stratified sampling method is used where individuals who only use the ABRHS are to be taken into consideration. The data collected through the questionnaire survey so far are shown in Table 1. A total of 51 ABRHS users' responses are tabulated against different factors.

Table 1. User Satisfaction on App-Based Ride Hailing Services (ABRHS) in Sri Lanka

The ABRHS user satisfaction factor	Satisfaction level				
	Highly Unsatisfied	Unsatisfied	Neutral	Satisfied	Highly Satisfied
Service quality characteristics					
• Trip cost/prices	2	2	20	20	7
• Level of security	2	2	17	28	2
• Comfort of the vehicles	2	3	21	23	2
• Various offers and discounts provided by these apps	3	4	16	18	10
• Vehicle quality and cleanliness	2	5	16	26	2
• Waiting time until the vehicle arrives to pick up	3	7	17	21	3
• Various payment options provided	3	5	5	26	12
Service and system qualities					
• User friendliness of the apps	3	3	13	24	8
• Information the apps provide about the drivers	5	3	15	25	3
• Complaint handling system of the apps	4	12	19	13	3
• Privacy these apps provided (location sharing, entering card payment details, etc.)	1	6	24	17	3
• Trip history provided by these apps	5	3	12	25	6
Network features					
• Real time location tracking of the drivers	3	5	13	24	6
• In-app call and chat feature	3	6	15	21	6
• Availability of the vehicles at a given time	1	8	25	14	3
• Performance of the apps (involves crashing of the apps, and slow responsiveness, etc.)	1	8	19	20	3
Professionalism of the service					
• Type vehicles available through the app	2	5	10	25	9
• Driver's behaviour and service provided to you	3	2	19	24	3
• Knowledge of the drivers on the app and locations	0	9	17	24	1
Passenger satisfaction					
• Satisfaction with the overall service	1	1	10	23	16
• Satisfaction to keep using in the future	2	3	8	20	18
• Satisfaction to recommend it to others	1	1	11	23	15

The collected data would be analyzed using the hypotheses identified by the literature; for example, price, quality, and reliability have had positive relationships with customer satisfaction which have been found in a study conducted in Dhaka, Bangladesh [7]. These results might be true for the Sri

Sri Lanka Society of
Transport and Logistics

Lankan context as well because Bangladesh has similar demographic characteristics. Another study that was conducted in Sri Lanka by Thilakarathne and Jayaratne [3] found that the professionalism of the service provider, travel time efficiency, affordability, reliability, attractiveness, the standard of service, safety, and convenience are significant variables when selecting a Mobile app-based taxi service in Sri Lanka. These variables were considered in collecting data in this study. The Cronbach alpha test was used to check the consistency of the questionnaire. It is expected to extend the analysis by using Multiple regression analysis and Chi-square tests.

3. RESULTS AND DISCUSSION

The percentage of dissatisfied users for any given factor is low compared to that of satisfied users as indicated in Table 1. The Cronbach's alpha value for the dependent variable and all the independent variables were estimated as shown in Table 2. All values are well within the acceptable range of 0.70 and 0.95 [8]. If the value is less than 0.70 considered questionable and is more than 0.95 considered redundancy and suggests the shortening of test length.

Table 2. Cronbach's alpha values

Service quality characteristics	0.918
Service and system qualities	0.915
Network features	0.910
Professionalism of the service.	0.885
Dependent variable (Passenger Satisfaction)	0.923

4. CONCLUSION

The study investigates factors that may benefit app-based ride-hailing service providers. The level of satisfaction, overall satisfaction, and significant factors affecting the satisfaction of passengers can be known after completing this study and then these services could be further improved and developed in order to benefit both the passengers and the service providers.

REFERENCES

1. McKeon C. (2023), Why Millennials Prefer Ride Sharing. https://blog.v-hr.com/blog/why-millennials-prefer-ride-sharing (accessed May 11, 2023).
2. Statista (2023) Ride-hailing & Taxi - Sri Lanka | Statista Market Forecast, https://www.statista.com/outlook/mmo/shared-mobility/shared-rides/ride-hailing-taxi/sri-lanka (accessed May 11, 2023).
3. Thilakarathne N. and Jayaratne P. (2019). Evaluate and Identify the Factors Impact on Selecting a Mobile App-Based Taxi service in Sri Lanka (Users' Perspective). *Journal of the Eastern Asia Society for Transportation Studies*, *13*, 2466-2486.
4. Shah, S. A. H., & Kubota, H. (2022). Passenger's satisfaction with service quality of app-based ride hailing services in developing countries: Case of Lahore, Pakistan. *Asian Transport Studies*, *8*, 100076.
5. Shah, S. A. H., & Hisashi, K. (2022). Analyzing travelers' attitude towards ride-hailing services in developing countries: Case of Lahore, Pakistan. *IATSS Research*, *46*(2), 223-235.
6. K.D.P. Damsara, (2020). Factors affecting the millennial selection of mobile taxi ordering apps in Colombo, Sri Lanka (Doctoral dissertation, University of West London).
7. Hayder, N. B. (2020). Factors affecting customer satisfaction of online taxi services in Dhaka City. *J. Bus. Econ. BJBE*, vol. 1, pp. 271–283, 2020.
8. Amarasingha, N., & Firdhaws, H. M. M. (2021). Self-reported habitual practices and perceptions of young drivers in Sri Lanka. *Journal of South Asian logistics and transport*, 1(1), 49-49.

Sri Lanka Society of **Transport and Logistics**