INTENTION TO USE ONLINE RAILWAY SEAT RESERVATION SYSTEM AMONG TRAIN PASSENGERS

P.D.N. Samarasinghe[1,][*] and Mihiri Wickramasinghe[2]

[1,2] *Department of Information Systems, Faculty of Management Studies, Rajarata University of Sri Lanka, Mihintale, Sri Lanka*

[*]Corresponding author (email: dhananjinethmini1@gmail.com)

INTRODUCTION

In Sri Lanka, trains serve as a prevalent mode of transportation, with 18% of the population utilizing them daily (Kandamby & Karunarathna, 2020). The Sri Lankan Railway Department traditionally issues tickets for short-distance travel through counters, necessitating that travellers endure extensive wait times, potentially causing them to miss their trains. Consequently, the prevailing perception of Sri Lanka's train service among passengers is predominantly unfavourable (Nimesh et al., 2020). To mitigate these challenges, the Ministry of Transportation has inaugurated an online railway seat reservation system, available through a website and a mobile application, marking a pioneering initiative in Sri Lanka's transportation landscape (Welcome to Sri Lanka Railways, 2022).

A comprehensive understanding of the factors influencing purchasing decisions is indispensable for gaining critical insights into consumer behaviour regarding ticket reservations in both online and physical realms (Gunawan et al., 2000). Consequently, this study investigates the elements shaping the intention to use the online railway seat reservation system among main-line train passengers in Sri Lanka. The insights derived from this research are particularly pivotal for the railway department to apprehend the acceptance levels and user intentions towards their newly launched online seat reservation system. This comprehension is not solely beneficial for the railway department but extends to passengers and the broader society, including students, lecturers, system developers, and software companies, enriching the understanding of all stakeholders involved.

METHODOLOGY

Figure 1
Conceptual Framework
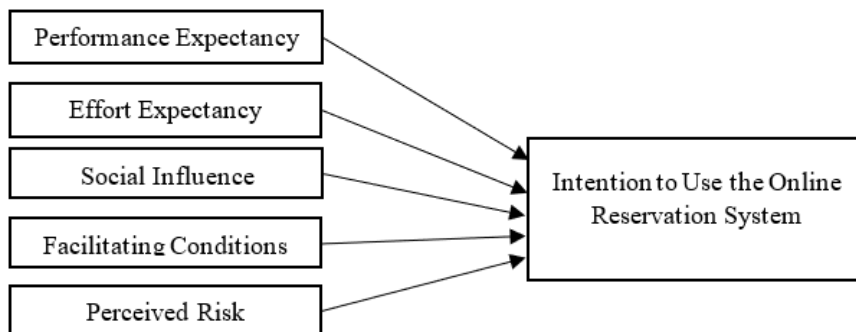
According to Ravitch and Carl (2020), a conceptual framework, illustrated in Figure 1, is a representation, either written or visual, of the anticipated interaction among variables. In this study, the dependent variable is the intention to use the online reservation system, while the

independent variables include performance expectancy, effort expectancy, social influence, facilitating conditions, and perceived risk. A specific branch of information technology research emphasizes technology adoption, evaluating usage or intention as the dependent variable (Davis, 1989). The objective of the UTAUT model is to elucidate user intentions and subsequent usage behaviour of an Information System (IS) (Venkatesh & Davis, 2000). According to Chao (2019), the UTAUT model is the most efficacious for researching behavioural intention.

Based on the conceptual framework and literature review, the researcher formulated causal hypotheses to evaluate the influence of independent variables on the intention to use the online reservation system.

H_1: There is an impact of performance expectancy on the intention to use the current online seat reservation system among main-line train passengers.

H_2: There is an impact of effort expectancy on the intention to use the current online seat reservation system among main-line train passengers.

H_3: There is an impact of social influence on the intention to use the current online seat reservation system among main-line train passengers.

H_4: There is an impact of facilitating conditions on the intention to use the current online seat reservation system among main-line train passengers.

H_5: There is an impact of perceived risk on the intention to use the current online seat reservation system among main-line train passengers.

This research employs quantitative approaches, with a focus on explanatory and deductive research, utilizing primary data collected through a structured questionnaire. According to a simple random sampling method, the sample consisted of 380 train passengers who use the "Podi-Menike" express train from Colombo to Badulla. Data were collected through questionnaire survey methods and were analysed using SPSS software to determine Mean, Mode, Standard Deviation, Correlation coefficient, and Multiple Regression Analysis.

RESULTS AND DISCUSSION

Based on Morgan's table, 384 train passengers who travelled on the main line were selected for this study; however, only 377 responded. According to the current data, a response rate of 98.17 percent was recorded. From these respondents, the reliability analysis table [Table 1] demonstrates that all the variables ranged from 0.711 to 0.844, indicating that the variables are considered highly reliable.

The researcher performed multiple regression analysis [Table 2] to assess the validity of the hypotheses. The results indicated that all the hypotheses were accepted.

The Pearson correlation coefficients revealed a positive relationship between performance expectancy and intention to use. This relationship was statistically significant, with a significance (sig.) value of 0.000, which is less than the 0.05 level. Thus, there is a positive impact of performance expectancy on the intention to use the online seat reservation system among main-line train passengers, evident by a significance value of 0.002.

A strong positive relationship between effort expectancy and intention to use was also discovered, with a significance (sig.) value of 0.000, less than the 0.05 level. Similarly, a positive relationship between social influence and intention to use was discerned, exhibiting a

significance value. Additionally, a positive correlation between facilitating conditions and intention to use was identified, accompanied by a significance value.

Lastly, a negative relationship between perceived risk and intention to use was identified, recorded at –0.219, with a significance (sig.) value of 0.000, less than the 0.05 level. This signifies that perceived risk has a significant negative impact on the intention to use the online seat reservation system among main-line train passengers.

Table 1

Reliability Analysis

Variables	No. of Items	Cronbach's Alpha
Performance Expectancy	5	0.811
Effort Expectancy	4	0.844
Social Influence	5	0.751
Facilitating Conditions	5	0.725
Perceived Risk	7	0.792
Intention to use the system	3	0.711

Table 2

Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	β	Std. Error	β		
(Constant)	1.948	0.305		6.392	0.000
Performance Expectancy	-0.194	0.061	-0.181	-3.196	0.002
Effort Expectancy	0.414	0.066	0.343	6.253	0.000
Social Influence	0.212	0.068	0.207	3.107	0.002
Facilitating Conditions	0.175	0.074	0.163	2.372	0.018
Perceived Risk	-0.145	0.051	-0.132	-2.872	0.004

CONCLUSION AND IMPLICATIONS

Factors including perceived risk, performance expectancy, effort expectancy, social influence, and facilitating conditions collectively influence the intention to use the system. The majority of respondents reported using the system only once, citing a prevalent lack of trust in it. This research corroborates prior studies on the adoption of new technologies in the transportation industry, such as those conducted by Zongjiang (2012).

According to the research findings, passengers' monthly salaries and their residential areas influence their intention to use this system. Performance expectancy maintains a positive relationship with the intention to use the reservation system. Passengers exhibit confidence in their ability to use the system, and effort expectancy positively impacts their intention to use it. Both social influence and facilitating conditions also positively affect the use of the online reservation system.

The study implies that the Sri Lankan railway department might need to address issues of trust and reliability to enhance the adoption of the online reservation system. Additionally, enhancing the system's convenience and ease of use could also prove beneficial. Social influence is pivotal in technology adoption, and the railway department might need to concentrate on promoting the system within passengers' social networks. Overall, this study

provides valuable insights into the factors influencing the adoption of new technologies in the transportation sector.

Keywords: Consumer behaviour in transportation, online railway reservation system, user intention

REFERENCES

Chao, C. M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of the UTAUT model. *Frontiers in Psychology*, 10(July), 1652. https://doi.org/10.3389/fpsyg.2019.01652

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly: *Management Information Systems*, 13(3), 319–339. https://doi.org/10.2307/249008

Gunawan, I., AlAnsari, O., Limayem, M., Khalifa, M., & Frini, A. (2000). What makes consumers buy from Internet? A longitudinal study of online shopping. IEEE Transactions on Systems, Man, and Cybernetics - Part A: *Systems and Humans*, 30(4), 421.

Kandamby, D. A., Karunarathna, S., & N. S. Y. (2020). Electronic Card System to Reduce Queue Length for Tickets in Kollupitiya Railway Station, 20, 2513.

Nimesh, A. D. S., Wickramasinghe, S., & Hettiarachchi, S. (2020). "TrainGo App"-Mobile based Train Ticketing System for Railway Department in Sri Lanka. 13th International Research Conference General Sir John Kotelawala Defence University, 369–376.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. https://doi.org/10.1287/mnsc.46.2.186.11926

Welcome to Sri Lanka Railways. (2022). https://seatreservation.railway.gov.lk/mtktwebslr/

Zongjiang, W. (2012). Railway Online Booking System Design and Implementation. In Physics Procedia, 33, 1217–1223. https://doi.org/10.1016/j.phpro.2012.05.202