

TOWARDS SMARTER TRAVEL: PASSENGER PREFERENCES AND FUTURE EXPECTATIONS TOWARDS DIGITAL TRANSPORTATION TICKET BOOKING

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Abstract: The study "Towards Smarter Travel: Passenger Preferences and Future Expectations Towards Digital Transportation Ticket Booking" examines passengers' preferences, future expectations, and privacy and security concerns regarding digital transportation ticket booking services in Thoothukudi District. The study adopted a descriptive research design and collected primary data from 295 respondents using a structured questionnaire with a 5-point Likert scale, while secondary data were obtained from journals, books, websites, and published reports. The collected data were analysed using IBM SPSS Statistics with statistical tools including Percentage Analysis, One-Way ANOVA, Independent Samples t-test, Mann–Whitney U Test, and Kruskal–Wallis H Test. The findings reveal that age significantly influences several future expectations and privacy and security concerns, whereas gender does not significantly influence passengers' preferences or perceptions of privacy and security. The study concludes that passengers increasingly expect advanced digital features such as AI-based recommendations, biometric authentication, secure payment systems, and efficient customer services. The results suggest that transportation service providers should strengthen digital security, improve user-friendly interfaces, and adopt innovative technologies to enhance passenger satisfaction and encourage wider adoption of digital transportation ticket booking services.

Keywords: Electronic ticket, Digital transportation, passengers, railway ticket booking, mobile application, digital ticket booking platforms

1. INTRODUCTION

In recent years, the transportation sector has been rapidly evolving with the integration of digital technologies, leading to the emergence of smarter and more efficient travel systems. Digital transportation ticket booking platforms such as mobile applications and web-based services have transformed the way passengers plan and manage their journeys. These platforms offer convenience, real-time information, flexible payment options, and reduced dependency on traditional ticket counters, thereby enhancing the overall travel experience. The growing penetration



of smartphones, improved internet connectivity, and the rise of digital payment systems have significantly contributed to the increased adoption of online ticket booking platforms. Passengers today are more inclined towards quick, seamless, and user-friendly services that save time and effort. As a result, digital ticketing has become an integral part of modern transportation systems, supporting the concept of smart mobility. However, passenger preferences and expectations are continuously evolving alongside technological advancements. While many users appreciate the convenience of digital platforms, they also expect enhanced features such as secure payment systems, personalized services, easy navigation, instant confirmations, and reliable customer support. The success of digital ticket booking platforms largely depends on how well these platforms meet the expectations and preferences of users. In semi-urban and developing regions, the adoption of digital transportation services is influenced by various factors such as digital literacy, accessibility, trust, and prior experience with technology. Thoothukudi district, a developing and economically significant region in Tamil Nadu, is witnessing increased usage of digital services, including online transportation ticket booking. However, the level of user satisfaction, preferences, and expectations regarding these platforms in this district remains relatively underexplored. Understanding passenger preferences and future expectations is crucial for service providers and policymakers to improve the efficiency, accessibility, and user-friendliness of digital ticket booking systems. It also helps in identifying areas that require technological improvement and better customer engagement.

2. REVIEW OF LITERATURE

Hakim et al. (2024) examined the factors influencing the adoption of e-ticketing applications among intercity bus passengers using primary data analysis. The study identified key determinants such as perceived ease of use, subjective norms, information quality, online reviews, and price-saving orientation. The findings revealed that ease of use and accessibility significantly enhance passenger preference towards digital ticket booking platforms, while social influence and online reviews also play an important role in shaping user decisions. The study further highlighted that passengers prefer platforms that provide accurate information, cost benefits, and smooth booking experiences. It also emphasized that user-friendly interface design and reliable service quality are essential for improving adoption rates.

S., Simons, et al. (2024) investigated the adoption and impact of mobile fare payment systems among public transport users. The study found that demographic and socioeconomic factors significantly influence the usage of digital ticketing platforms. Younger, educated, and higher-income individuals were more likely to adopt mobile ticketing systems, whereas older and less digitally literate users showed lower adoption rates. The study also revealed that the use of mobile ticketing applications increases travel frequency and enhances convenience for passengers. However, barriers such as lack of digital access, limited financial inclusion, and technological challenges hinder widespread adoption.

Wani (2025) explored the adoption of digital payment systems and mobile ticketing in public transportation using advanced analytical models. The study emphasized that user behaviour varies across different segments based on technological familiarity, income levels, and travel patterns. It identified factors such as perceived usefulness, trust, and convenience as major drivers of digital adoption in transportation services. The research also highlighted that personalized services, seamless payment systems, and integration of digital technologies enhance user satisfaction and influence future expectations. However, concerns related to security, lack of awareness, and technological barriers were identified as significant challenges affecting adoption.

STATEMENT OF THE PROBLEM

The rapid advancement of digital technologies has transformed the transportation sector, leading to the widespread adoption of online ticket booking platforms. These platforms are designed to provide passengers with convenient, time-saving, and efficient services such as real-time availability, flexible payment options, and easy access through mobile applications and websites. As part of the move towards smarter travel systems, digital ticketing has become an essential component of modern transportation. Despite these developments, passenger preferences and expectations towards digital transportation ticket booking platforms are not uniform. While many users appreciate the convenience offered by these systems, others face challenges such as complex interfaces, payment failures, lack of trust in digital transactions, and inadequate customer support. Additionally, factors such as digital literacy, accessibility to technology, and prior experience with online platforms significantly influence passenger preferences and satisfaction levels. In Thoothukudi district, the adoption of digital transportation services is gradually increasing due to improved internet access and smartphone usage. However, there is limited empirical evidence regarding how passengers perceive these platforms, what features they prefer, and what expectations they have for future improvements. The gap between current service offerings and passenger expectations may affect the overall effectiveness and acceptance of digital ticket booking systems. Furthermore, passengers today expect more advanced

features such as secure transactions, user-friendly interfaces, personalized services, and quick grievance redressal mechanisms. Failure to meet these expectations may lead to dissatisfaction and reduced usage of digital platforms, despite their potential benefits. Therefore, the problem addressed in this study is to analyze passenger preferences and future expectations towards digital transportation ticket booking platforms in Thoothukudi district. The study seeks to identify the key factors influencing user preferences, evaluate the gaps between existing services and user expectations, and provide suggestions for enhancing the efficiency, usability, and customer satisfaction of digital ticketing systems.

RESEARCH OBJECTIVES

1. To analyse the demographic profile of passengers using digital ticket booking in Thoothukudi district.
2. To identify future expectations of passengers in digital ticket booking services.
3. To analyse the preference factors influencing passengers to use e-ticket booking services.
4. To examine passengers' privacy and security concerns regarding digital transportation ticket booking platforms.

NULL HYPOTHESIS

H01: There is no significant relationship between future expectations of passengers in digital ticket booking services and age of the respondents

H02: There is no significant relationship between preference factors influencing passengers to use e-ticket booking services and gender of the respondents

H03: There is no significant difference in privacy and security concerns factors between genders of the respondents.

H04: There is no significant difference in privacy and security concerns factors between age of the respondents.

3. Methodology

The present study, "Towards Smarter Travel: Passenger Preferences and Future Expectations Towards Digital Transportation Ticket Booking," adopted a descriptive research design to examine passengers' preferences, future expectations, and privacy and security concerns regarding digital transportation ticket booking services in Thoothukudi District. The study was based on both primary and secondary data, where primary data were collected through a structured questionnaire using a 5-point Likert scale, and secondary data were obtained from journals, books, websites, and published reports related to digital transportation and e-ticket booking. A total of 295 respondents were selected using the convenience sampling technique. The collected data were analysed using IBM SPSS Statistics, and statistical tools such as Percentage Analysis, One-Way ANOVA, Independent Samples t-test, Mann–Whitney U Test, and Kruskal–Wallis H Test were employed to examine the relationship between demographic variables and passengers' preferences, future expectations, and privacy and security concerns towards digital transportation ticket booking services.

Analysis and Interpretation

H01: There is no significant relationship between future expectations of passengers in digital ticket booking services and age of the respondents

ANOVA						
Factors		Sum of Squares	df	Mean Square	F	Sig.
I expect faster ticket booking with advanced technology.	Between Groups	1.710	4	.427	.568	.686
	Within Groups	218.236	290	.753		
	Total	219.946	294			
I prefer AI-based personalized travel recommendations.	Between Groups	12.755	4	3.189	3.433	.009
	Within Groups	269.327	290	.929		
	Total	282.081	294			
I expect biometric or facial recognition-based ticket verification in the future.	Between Groups	11.233	4	2.808	3.560	.007
	Within Groups	228.787	290	.789		
	Total	240.020	294			
Accessing Tatkal ticket booking is easy	Between Groups	10.325	4	2.581	2.492	.043

	Within Groups	300.353	290	1.036		
	Total	310.678	294			
Obtaining insurance is easy and inexpensive	Between Groups	6.836	4	1.709	1.375	.243
	Within Groups	360.473	290	1.243		
	Total	367.308	294			
I expect digital transportation platforms to provide more integrated travel services.	Between Groups	2.061	4	.515	.713	.584
	Within Groups	209.735	290	.723		
	Total	211.797	294			
The schedule for tour packages is adequate and up to date	Between Groups	1.908	4	.477	.561	.691
	Within Groups	246.689	290	.851		
	Total	248.597	294			
The site maintains a nil error record for the ticketing system	Between Groups	9.782	4	2.445	2.651	.033
	Within Groups	267.527	290	.923		
	Total	277.308	294			
I believe digital ticket booking will become the primary mode of transportation booking in the future.	Between Groups	3.667	4	.917	1.207	.308
	Within Groups	220.177	290	.759		
	Total	223.844	294			
The e-ticket contains detailed travel information	Between Groups	5.205	4	1.301	1.740	.141
	Within Groups	216.816	290	.748		
	Total	222.020	294			
The website offers a prompt and genuine refund process	Between Groups	10.560	4	2.640	3.370	.010
	Within Groups	227.148	290	.783		
	Total	237.708	294			
The website maintains proper records of accommodation facilities	Between Groups	6.762	4	1.690	2.435	.048
	Within Groups	201.354	290	.694		
	Total	208.115	294			
Prompt services are provided by hotels/lounges.	Between Groups	33.993	4	8.498	7.430	.000
	Within Groups	331.688	290	1.144		
	Total	365.681	294			

Source: Primary Data

Interpretation - The ANOVA results reveal that age significantly influences passengers' preferences for AI-based recommendations, biometric verification, Tatkal booking accessibility, system reliability, refund process, accommodation information, and hotel/lounge services. However, age does not significantly influence expectations regarding faster booking technology, integrated travel services, insurance facilities, tour package schedules, detailed e-ticket information, and the future adoption of digital ticket booking. Thus, the null hypothesis is partially rejected, indicating that age plays a significant role in shaping certain future expectations towards digital transportation ticket booking services while having no effect on others.

H02: There is no significant relationship between preference factors influencing passengers to use e-ticket booking services and gender of the respondents

Factors		F	Sig.	t	df	Sig. (2-tailed)
I prefer digital ticket booking over traditional ticket counters.	Equal variances assumed	.767	.382	.975	293	.330
	Equal variances not assumed			.974	291.052	.331
I frequently compare ticket prices before booking online.	Equal variances assumed	6.520	.011	.455	293	.650
	Equal variances not assumed			.453	283.879	.651
Discounts and cashback influence my booking decisions.	Equal variances assumed	.031	.859	-1.181	293	.239
	Equal variances not assumed			-1.178	283.956	.240
I prefer booking tickets through mobile applications.	Equal variances assumed	1.795	.181	1.047	293	.296
	Equal variances not assumed			1.048	293.000	.296
I recommend digital ticket booking services to others.	Equal variances assumed	1.436	.232	.583	293	.561
	Equal variances not assumed			.582	290.894	.561

The notifications provided on the website are easily visible	Equal variances assumed	3.028	.083	1.469	293	.143
	Equal variances not assumed			1.467	288.951	.143
The site provides previous customer reviews for clarification	Equal variances assumed	1.139	.287	1.318	293	.189
	Equal variances not assumed			1.319	292.950	.188
The website doesn't contain too many pop ups and banner advertisements	Equal variances assumed	5.891	.016	-.397	293	.692
	Equal variances not assumed			-.396	282.980	.693

Source: Primary Data

Interpretation - To test the null hypothesis H02: "There is no significant relationship between preference factors influencing passengers to use e-ticket booking services and the gender of the respondents," an Independent Samples t-test was conducted. The results reveal that all the preference factors have Sig. (2-tailed) values greater than 0.05, indicating that there is no statistically significant difference in the opinions of male and female respondents regarding the factors influencing their preference for e-ticket booking services. Overall, the findings indicate that gender does not have a significant influence on passengers' preference factors related to the use of e-ticket booking services. Both male and female respondents exhibit similar preferences regarding digital ticket booking, price comparison, discounts, mobile application usage, recommendation behaviour, website notifications, customer reviews, and website design. Hence, the null hypothesis (H02) is accepted.

H03: There is no significant difference in privacy and security concerns factors between genders of the respondents.

Factors	I am concerned about the privacy of my personal information on the e-ticket booking platform.	I worry about the security of my payment information on the e-ticket booking platform.	The e-ticket booking platform protects my personal data effectively.	I feel my privacy is at risk when using the e-ticket booking platform.	I trust the e-ticket booking platform to keep my information secure.	I am confident in the security measures of the e-ticket booking platform.
Mann-Whitney U	10256.000	10837.000	10164.000	10584.000	10009.500	10282.500
Wilcoxon W	20841.000	22162.000	21489.000	21909.000	21334.500	21607.500
Z	-.897	-.055	-1.032	-.423	-1.239	-.845
Asymp. Sig. (2-tailed)	.370	.956	.302	.672	.215	.398

a. Grouping Variable: Gender Wise Classification

Source: Primary Data

Interpretation - To test the null hypothesis H03: "There is no significant difference in privacy and security concern factors between genders of the respondents," the Mann-Whitney U test was employed. This non-parametric test was used to determine whether male and female respondents differed significantly in their perceptions regarding privacy and security aspects of e-ticket booking platforms. Therefore, the null hypothesis is accepted for all the privacy and security concern factors. Overall, the findings indicate that gender does not significantly influence respondents' perceptions of privacy and security in e-ticket booking services. Male and female respondents exhibit similar levels of concern regarding the privacy of personal information, payment security, protection of personal data, privacy risks, trust in the platform, and confidence in the security measures implemented by e-ticket booking platforms. Hence, the null hypothesis (H03) is accepted.

H04: There is no significant difference in privacy and security concerns factors between age of the respondents.

Factors	I am concerned about the privacy of my personal information on the e-ticket booking platform.	I worry about the security of my payment information on the e-ticket booking platform.	The e-ticket booking platform protects my personal data effectively.	I feel my privacy is at risk when using the e-ticket booking platform.	I trust the e-ticket booking platform to keep my information secure.	I am confident in the security measures of the e-ticket booking platform.
Kruskal-Wallis H	23.883	32.636	22.465	21.724	39.813	17.342
df	4	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000	.002

a. Kruskal Wallis Test
b. Grouping Variable: Age Wise Classification

Source: Primary Data

Interpretation - To test the null hypothesis H04: "There is no significant difference in privacy and security concern factors between the age groups of the respondents," the Kruskal–Wallis H test was employed. This non-parametric test was used to examine whether respondents belonging to different age groups differ significantly in their perceptions of privacy and security concerns related to e-ticket booking platforms. The results reveal that all the privacy and security concern factors have Asymp. Sig. values less than 0.05, indicating statistically significant differences among the age groups. The findings indicate that age significantly influences passengers' perceptions of privacy and security concerns related to e-ticket booking platforms. Respondents belonging to different age groups differ significantly in their level of concern regarding the privacy of personal information, payment security, protection of personal data, perceived privacy risks, trust in the platform, and confidence in the platform's security measures. Therefore, the null hypothesis (H04) is rejected, suggesting that age plays a significant role in shaping passengers' privacy and security perceptions towards digital transportation ticket booking services.

4. CONCLUSION

The present study, "Towards Smarter Travel: Passenger Preferences and Future Expectations Towards Digital Transportation Ticket Booking," examined the factors influencing passengers' preferences, future expectations, and privacy and security concerns regarding digital transportation ticket booking services in Thoothukudi District. The study revealed that digital ticket booking has become an integral part of modern travel, offering convenience, accessibility, and time-saving benefits to passengers. At the same time, passengers expect continuous improvements in service quality, technological innovation, and security features to enhance their overall booking experience. Overall, the findings emphasize that while digital transportation ticket booking services are widely accepted and appreciated for their convenience and efficiency, service providers should focus on developing age-specific strategies, strengthening cybersecurity measures, enhancing trust through transparent privacy policies, integrating advanced technologies such as artificial intelligence and biometric authentication, and improving customer support and service reliability. Addressing these expectations and concerns will contribute to higher passenger satisfaction, greater user confidence, and the sustainable growth of digital transportation ticket booking systems. The study provides valuable insights for transportation service providers, policymakers, and digital platform developers to promote smarter, safer, and more user-centric travel experiences in the future.

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