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INFLUENCE OF PASSENGER TECHNOLOGY READINESS ON ELECTRONIC TICKETING SYSTEMS ADOPTION: A CASE OF TANZANIA STANDARD GAUGE RAILWAY (SGR)

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ABSTRACT

This study assessed the influence of passenger technology readiness on Electronic Ticketing Systems (ETS) adoption at Tanzania standard gauge railway focusing on the Dar es Salaam to Dodoma corridor. The study was guided by the Unified Theory of Acceptance and Use of Technology (UTAUT). A quantitative cross-sectional research design was employed. Data were collected from railway passengers using a structured questionnaire from 139 respondent collected from convenient sampling and analyzed using Statistical Package for the Social Sciences (SPSS) version 24. The findings revealed a generally high level of passenger technology readiness toward electronic ticketing system adoption. Performance expectancy was strongly perceived, with passengers indicating that electronic ticketing system (ETS) makes ticket purchasing faster with mean score (M = 4.40), improves travel efficiency (M = 4.39), and reduces errors (M = 4.27). Effort expectancy was also positively assessed, particularly the ease of learning ETS (M = 4.21) and clarity of the system (M = 4.14). Social influence had a moderate positive contribution, with encouragement from important people recording the highest mean (M = 4.0). Facilitating conditions were generally favorable, particularly access to devices (M = 4.51) and internet connectivity (M = 4.24); however, technical issues recorded the lowest mean (M = 3.13), indicating continuing challenges related to system reliability. Since this study focused on the Dar es Salaam–Dodoma Standard Gauge Railway (SGR) corridor, future research could extend the investigation to other railway corridors and transport modes in Tanzania. Further studies could also employ inferential and predictive modeling techniques, such as structural equation modeling, to examine the strength and direction of causal relationships between UTAUT constructs and actual usage behavior. Additionally, future research could incorporate a qualitative dimension to explore the underlying reasons behind passengers' perceptions, particularly regarding recurring technical issues and variations in social influence.

Keywords: Electronic ticketing systems, Performance expectance, Effort expectance, Social Influence and facilitating condition, Passenger

1. Introduction

Technology utilisation continues to increase from time to time, because information technology can provide and produce speed and accuracy of information that will be a guide in running the

economy by business people, the general public or the government (Febriansyah et al.,2022). Technological readiness has influenced the transformation of the interactions between service providers and customers in the service industry (Venkatesh, 2016). However, recent African focused studies indicate that 60% of Nigerian travelers opt to buy their tickets in person. The study looked at how internet knowledge mediated the relationship between e-ticketing adoption in Nigeria and perceived utility (Yusuf et al., 2025)

In East Africa context the construction of SGR networks across the region, provided with a unique chance to explore various aspects of Information and Communication Technology in transportation to go with the level of Technology used by the newly adopted railway networks (World Bank, 2023). Numerous studies have shown how crucial information systems are to raising customer satisfaction and operational effectiveness in the transport industry (Smith, 2020; Venkatesh, 2016). The study is based on (Venkatesh et al., 2012) Unified Theory of Acceptance and Use of Technology (UTAUT), which describes how people adopt and utilise new technologies. According to the idea, performance expectancy, effort expectancy, social influence, and facilitating conditions are the four main factors that impact Technology adoption.

2.0 Literature Review

2.1. Theoretical Foundation

The theoretical foundation of this study is anchored in the Unified Theory of Acceptance and Use of Technology, developed in psychology and sociology. The Unified Theory of Acceptance and Use of Technology (UTAUT) is a prominent technology-adoption theory developed by (Venkatesh et al., 2003). The key assumption of the theory is that, first users are more likely to adopt technology when they believe it will improve their performance, efficiency and productivity, it is mainly related to saving time, operational efficiency (Venkatesh et al., 2003)., and improved convenience. second assumption of the theory is technological adaption is influenced by how easy the system is to learn; the perception of ease of use and accessibility encourages passengers to adopt aviation e-services and increases their commitment to electronic ticketing system. Third assumption of the theory is people are more likely to use technology when they perceive that important people or groups encourage them to use it and fourth assumption of the theory is that, users are more likely to use technology when they have the necessary resources such as devices, internet access and technical support (Venkatesh et al., 2003). The major strength of UTAUT theory is its comprehensive and predictive approach to explain technology acceptance while the main weakness is that it may not capture all contextual reasons influencing technology adoption in specific environment.

2.2 Empirical Literature Review

2.2.1 Performance Expectance on electronic ticketing systems adoption

Studies indicate that Performance Expectancy and Effort Expectancy, along with Personal Innovativeness, are among the factors that effectively and efficiently attract potential consumers (Parasuraman, 2000). The study has conducted a questionnaire-based survey of 320 users of mobile commerce in total. Results show that the performance expectancy and effort expectancy are significantly influence the behavioural intentions to adopt mobile commerce with a

significant effect and the results for this study could be fruitful for telecommunication, mobile commerce companies and marketers in formulating strategies to attract potential consumers effectively and efficiently (Ali and Qaisar, 2018). The study suffered a number of limitations where respondents were taken from Pakistan for this research and ignored the cross-cultural context as well as university students who are users of mobile phones and ignored other users. Thus, there is the need to come up with the recent study which incorporate passenger technology readiness on electronic ticketing system to assess adaptation of new Technology (e- ticketing).

2.3.2 Effort Expectance on electronic ticketing systems adoption

The degree of ease associated with learning and using the e-ticketing system, Perceived ease of use is the extent to which a person thinks that using a specific system will be easy. (Gamage, 2024) emphasizes the need to creating a user-friendly interface that accommodates the demands of all passengers, regardless of their Technological proficiency. Potential customers will likely become discouraged and stick with conventional ticket purchasing methods if the system appears complicated or challenging. (Moon & Lee, 2022) emphasized that when e-services offered in the transport industry are found easier and more intuitive by users, the adoption and usage rates of these services increase. This trustily increases travelers' favorites for e-services Evaluating the degree of ease to use associated with learning and using the e-ticketing system factors in Tanzania is therefore a critical for identifying potential operational bottlenecks in relation to adoption of passenger with e-ticketing.

2.3.3 Social Influence on electronic ticketing systems adoption

People's intentions to use Technology will be influenced by the recommendations of others. When they looked into Indian women entrepreneurs employing information and communication Technology, they discovered that social influence had a favorable impact on their behavioural intention (Kristantyo & Putranto, 2020) In the result showed that, behavioral intention to use an electronic ticketing system is unaffected by social impact indicators. Understanding the current technical readiness of the passenger will help determine whether other users can positively accelerate the use of electronic ticketing or not at Tanzania railway corporation

2.3.4 Facilitating Condition on electronic ticketing systems adoption

At a global level, the study from Thailand suggests that passengers who frequently use mobile applications (facilitating condition) tend to have Technological Readiness higher than those who frequently use website to perform airline self-services (Suwannakul,2021). Questionnaires were used to collect data and a total number of 382 usable data were analysed. The results revealed that passengers who frequently use mobile applications tend to have Technology Readiness higher than those who frequently use website to perform airline self-services. Despite the positive contribution of the study also there is some limitations where the analysis results show that passengers perceived readiness to use Technology vary depending on several characteristics of passengers such as age. Author suggested that Future research should also be conducted in other countries as different cultures tend to influence passengers' readiness of such Technology (Suwannakul,2021). These findings indicate a need for updated research that integrates Passenger Technology Readiness with electronic ticketing systems, particularly in diverse cultural contexts and different Transport mode.

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2.3.5 The Theoretical Framework of the Study

The theoretical framework shows how the influence of passenger technology readiness on electronic ticketing systems adoption is directly related. Passengers are more likely to adopt positive attitudes toward Technology and exhibit higher levels of technology adoptions when electronic ticketing systems are effective, safe, and user-friendly.

Theoretical Framework

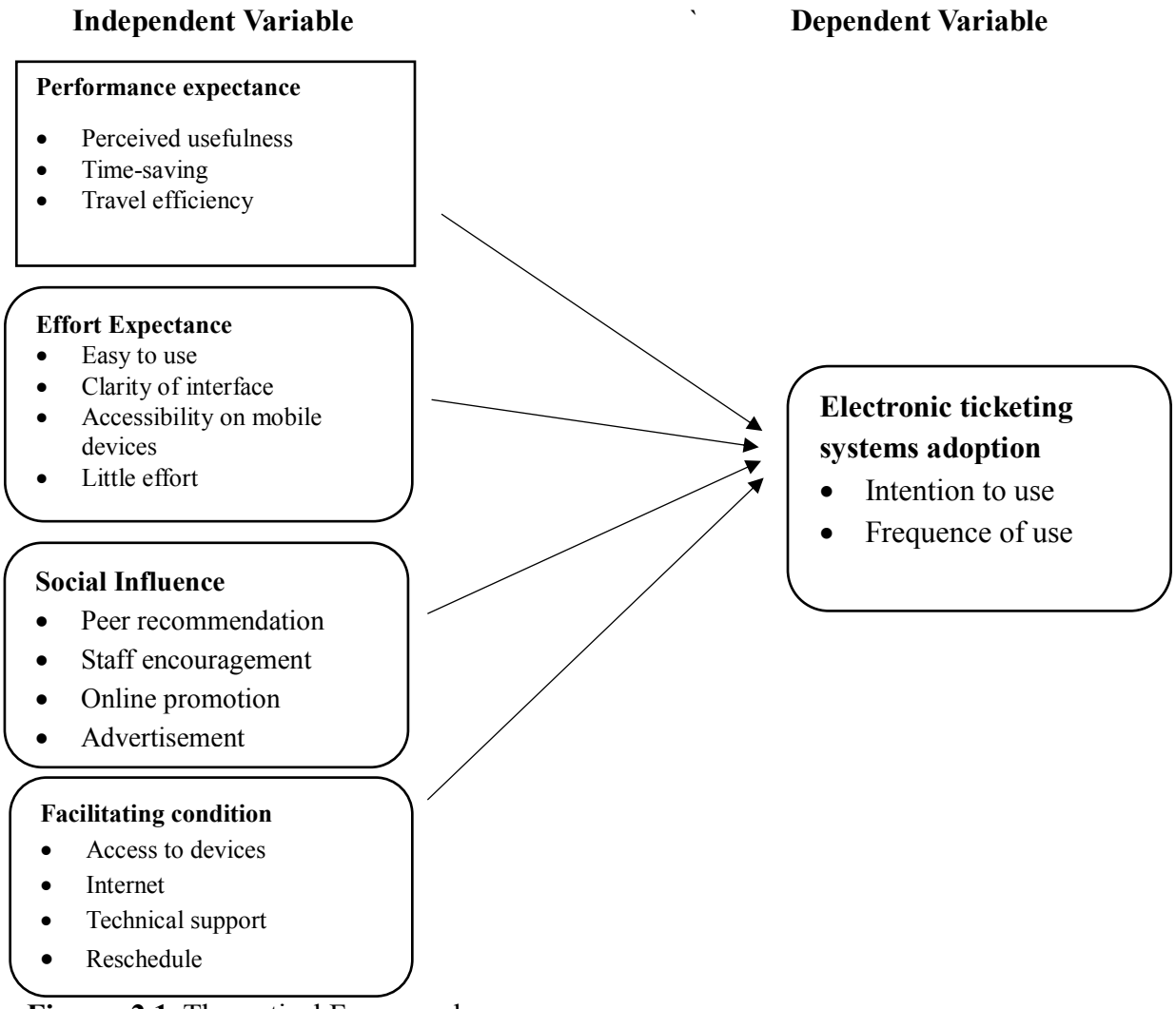


Figure: 2.1. Theoretical Framework

Source: Adopted from UTAUT theory (Venkatesh, 2012)

3.0 Methodology

This research adopted positivism approach that concentrates on observable, quantifiable results and look for causal correlations based on observed facts assessing the influence of Passenger

Technology Readiness on Electronic Ticketing Systems adoption, deductive approach, and focusing on collecting numerical data from TRC passengers. Structured questionnaires were used to gather data on technological readiness with e-ticketing, Data from a representative sample of SGR passengers gathered at one time using a quantitative cross-sectional research design. Cross-sectional designs are appropriate for collecting data from large populations at a single point in time and allow for statistical generalization (Haq & Yasin, 2025). The reliability of the measurement instrument was assessed using Cronbach's alpha, with coefficients of 0.869, indicating acceptable to good internal consistency. Content validity was assessed to ensure that questionnaire items appropriately represented the study objectives and constructs, while a pilot test was conducted before the main data collection. Ethical considerations included informed consent, voluntary participation, confidentiality, anonymity, and use of the data solely for research purposes.

4.0 Results

4.1.Reliability of the scale

The reliability test results indicate that the questionnaire instrument achieved a Cronbach's Alpha coefficient of 0.869 and standardized Cronbach's Alpha was 0.870, which is slightly higher than the unstandardized value. Both coefficients exceed the recommended minimum value of 0.70, demonstrating good internal consistency among the measurement items.

4.2 Response rate

A total of 204 questionnaires were distributed to passengers using standard gauge railways from Dar es salaam to different stations and only 139 questionnaires were returned, giving about 68% response rate. The 139 returned questionnaires constituted the dataset used for the subsequent analysis.

4.3 Demographic Characteristics of Respondents

The age distribution shows that the largest cohort fell within the 26–35 years bracket with 68 respondents (48.9%), followed by 36–45 years with 38 respondents (27.3%), 15–25 years with 15 respondents (18.0%), and 46-55 years and above 56 with 8 respondents (5.8%). Also, male respondents constituted the larger proportion of the sample, with 93 respondents (66.9%), while female respondents accounted for 46 (33.1%) and the majority of respondents (24, or 17.3%) and (75, or 54.0%) held a diploma and undergraduate qualification consecutively, followed by 22 respondents (15.8%) with secondary qualifications, 15 (10.8%) with postgraduate qualifications, and 3 (2.2%) with primary education only

Table: 4.1: Demographic Characteristics of Respondents

Characteristics	Category	Frequency	Percent %
Gender	Male	93	66.9%
	Female	46	33.1%
Age	15-25	25	18.0%
	26-35	68	48.9%

	36-45	38	27.3%
	46-55	4	2.9%
	Above 56	4	2.9%
Education	Primary	3	2.2%
	Secondary	22	15.8%
	Diploma	24	17.3%
	Bachelor Degree	75	54.0%
	Postgraduate	15	10.8%
Frequency of Using Electronic Ticketing System	Occasionally	68	48.9%
	very frequently	70	50.4%
	5	1	0.7%

Source: Field data (2026)

4.4. Performance Expectance on electronic ticketing systems adoption

The findings revealed that passengers held strong positive perceptions of the performance benefits of ETS. Respondents agreed most strongly that ETS makes ticket purchasing faster (M = 4.40), followed by improved travel efficiency (M = 4.39) and reduced errors (M = 4.27). These results indicate that passengers view electronic ticketing as a technology that meaningfully improves the speed, accuracy, and overall efficiency of their travel experience, confirming performance expectancy as a strong positive determinant of technology readiness, consistent with the UTAUT model.

Table: 4.2: Descriptive Statistics of Performance Expectance

Performance expectance	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
ETS Reduces Errors	139	4	1	5	4.27	.085	1.004	1.008
ETS Make Purchasing Faster	139	4	1	5	4.40	.078	.922	.851
ETS Improve Efficiency of Travel	139	4	1	5	4.39	.077	.913	.833
Valid N (listwise)	139							

Source: Field data (2026)

Inferential statistics

Following the descriptive analysis, inferential statistics were conducted using correlation analysis to examine the strength, direction, and statistical significance of the relationships among the indicators of Performance Expectancy (PE) towards the use of Electronic Ticketing Systems (ETS).

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Table: 4.3: Correlation Analysis of Performance Expectance

Correlations		ETS Make Purchasing Faster	ETS Improve Efficiency of Travel	ETS Reduces Errors
ETS Make Purchasing Faster	Pearson Correlation	1	.553**	.494**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	117.439	64.245	63.094
	Covariance	.851	.466	.457
	N	139	139	139
ETS Improve Efficiency of Travel	Pearson Correlation	.553**	1	.527**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	64.245	115.022	66.626
	Covariance	.466	.833	.483
	N	139	139	139
ETS Reduces Errors	Pearson Correlation	.494**	.527**	1
	Sig. (2-tailed)	.000	.000	
	Sum of Squares and Cross-products	63.094	66.626	139.151
	Covariance	.457	.483	1.008
	N	139	139	139
**. Correlation is significant at the 0.01 level (2-tailed).				

Source: Field data (2026)

There was a moderate positive and statistically significant correlation between the perception that ETS makes purchasing faster and the perception that ETS improves efficiency of travel ($r = 0.553$, $p < 0.001$). This indicates that respondents who perceived ETS as making ticket purchasing faster were also more likely to perceive it as improving the efficiency of travel. Similarly, a moderate positive and statistically significant relationship was found between ETS making purchasing faster and ETS reducing errors ($r = 0.494$, $p < 0.001$). This suggests that respondents who considered ETS to speed up the purchasing process also tended to believe that the system helps reduce errors in ticketing transactions. The strongest relationship was observed between ETS improving efficiency of travel and reducing errors, with a correlation coefficient of $r = 0.527$ ($p < 0.001$).

4.5. Effort Expectancy on Electronic Ticketing Systems Adoption

Effort expectancy was measured using four indicators: easy navigation on ETS platforms, little effort required to complete ticket purchases, clarity and understandability of ETS, and ease of learning how to use ETS

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Descriptive Statistics

Table 4.4: Descriptive Statistics of Effort Expectance

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Easy Navigation on ETS Platforms	139	4	1	5	3.98	.089	1.046	1.094
ETS Are Clear and Understandable	139	4	1	5	4.14	.086	1.009	1.017
Learning Using ETS Is Easy	138	4	1	5	4.21	.079	.924	.853
Little Effort to Complete a Ticket Purchase	139	4	1	5	4.03	.091	1.076	1.159
Valid N (listwise)	138							

Source: Field data (2026)

The highest rated indicator was "learning using ETS is easy," which recorded a mean score of 4.21 (SD = 0.924). This result demonstrates that most passengers agree that they can easily learn how to operate the electronic ticketing platform. Statement "ETS are clear and understandable" recorded a mean score of 4.14 (SD = 1.009), indicating that respondents generally agree that the system provides understandable procedures and information, "little effort to complete a ticket purchase" achieved a mean score of 4.03 (SD = 1.076). This suggests that passengers perceive the electronic ticket purchasing process as requiring relatively little effort compared with manual ticket purchasing, Similarly, "easy navigation on ETS platforms" obtained a mean score of 3.98 (SD = 1.046), showing that passengers generally agree that navigating the system is easy.

Inferential statistics

Pearson product-moment correlation was performed to examine the association between easy navigation on ETS platforms and ETS being clear and understandable, learning to use ETS being easy and ETS being clear and understandable and ETS being clear and understandable and requiring little effort to complete a ticket purchase

Table 4.5: Correlation Analysis of Effort Expectancy Indicators.

		Learning Using ETS is Easy	Easy Navigation on ETS Platforms	ETS are Clear and Understandable	Little Effort to Complete a Ticket Purchase
Learning Using ETS Is Easy	Pearson Correlation	1	.558**	.585**	.374**
	Sig. (2-tailed)		.000	.000	.000
	Sum of Squares and Cross-products	116.906	73.841	75.007	50.949
	Covariance	.853	.539	.547	.372

	N	138	138	138	138
Easy Navigation on ETS Platforms	Pearson Correlation	.558**	1	.614**	.413**
	Sig. (2-tailed)	.000		.000	.000
	Sum of Squares and Cross-products	73.841	150.935	89.410	64.086
	Covariance	.539	1.094	.648	.464
	N	138	139	139	139
ETS are Clear and Understandable	Pearson Correlation	.585**	.614**	1	.530**
	Sig. (2-tailed)	.000	.000		.000
	Sum of Squares and Cross-products	75.007	89.410	140.403	79.453
	Covariance	.547	.648	1.017	.576
	N	138	139	139	139
Little Effort to Complete a Ticket Purchase	Pearson Correlation	.374**	.413**	.530**	1
	Sig. (2-tailed)	.000	.000	.000	
	Sum of Squares and Cross-products	50.949	64.086	79.453	159.885
	Covariance	.372	.464	.576	1.159
	N	138	139	139	139
** Correlation is significant at the 0.01 level (2-tailed). **Source:** field data 2026					

All Effort Expectancy indicators were positively and significantly correlated at the 0.01 level. The strongest relationship was between easy navigation and ETS being clear and understandable ($r = 0.614$, $p < 0.001$). Other significant relationships included ease of learning and clarity ($r = 0.530$), clarity and little effort required for ticket purchase ($r = 0.569$), and ease of learning and navigation ($r = 0.563$). Moderate positive relationships were also found between navigation and little effort ($r = 0.436$) and between ease of learning and little effort ($r = 0.408$), all with $p < 0.001$. Overall, the findings indicate that ease of learning, navigation, clarity, and reduced effort are closely related in ETS use

4.6 Social Influence on Electronic Ticketing Systems Adoption

Social influence was measured through five indicators: promotion of electronic ticketing systems, frequency of online promotions encouraging ETS usage, encouragement from trusted people, advertisements encouraging ETS choice, and influence from important people to use ETS.

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Table 4.6: Descriptive Statistics of Social Influence

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic
Advertisement Encourage to Choose ETS	139	4	1	5	3.71	.106	1.247	1.554
Promotion Of Electronic Ticketing System	139	4	1	5	3.47	.116	1.364	1.859
Trusted People Encourage to Use ETS	139	4	1	5	3.64	.120	1.409	1.986
Frequency Online Promotion Encouraged to Use ETS	139	4	1	5	3.60	.105	1.243	1.545
Important People Encourage to Use ETS	139	4	1	5	4.00	.096	1.136	1.290
Valid N (listwise)	139							

Source: field data 2026

The findings indicate that social influence positively affects passengers' readiness to use the Electronic Ticketing System (ETS), with all mean scores above the neutral point of 3.00, ranging from 3.47 to 4.00. The highest mean was recorded for encouragement from important people (M = 4.00, SD = 1.184), followed by advertisement (M = 3.71), trusted people (M = 3.64), and online promotions (M = 3.60). General ETS promotion had the lowest mean (M = 3.47). Overall, the mean score of approximately 3.68 indicates a moderately high level of agreement that social influence enhances passengers' technology readiness. The findings support UTAUT, emphasizing the importance of interpersonal encouragement and promotional activities in influencing ETS adoption.

Inferential statistics

The Pearson correlation analysis was conducted to examine the strength, direction, and statistical significance of the relationships among the five Social Influence indicators associated with passengers' use of Electronic Ticketing Systems (ETS).

Pearson Correlation Analysis of Social Influence Indicators.

The strongest relationship was found between advertisements encouraging passengers to choose ETS and the frequency of online promotions encouraging ETS use ($r = 0.688$, $p < 0.001$). This indicates a strong association between advertising and frequent online promotion in influencing passengers' perceptions and use of electronic ticketing systems.

A relatively strong positive relationship was also observed between advertisements encouraging passengers to choose ETS and promotion of the electronic ticketing system ($r = 0.536$, $p < 0.001$). Similarly, important people encouraging ETS use was moderately related to trusted people encouraging ETS use ($r = 0.448$, $p < 0.001$), while the relationship between online promotion and promotion of ETS was also moderate and significant ($r = 0.475$, $p < 0.001$).

The weakest relationship was between important people encouraging ETS use and advertisements encouraging passengers to choose ETS (r = 0.179, p = 0.035). Although weak, this relationship remains statistically significant at the 0.05 level.

Table 4.7: Pearson Correlation Analysis of Social Influence Indicators

Correlations		Access Devices	Internet Connection	Support Services	Technique Issues	Rescheduling Of Ticketing
Access Devices	Pearson Correlation	1	.610**	.431**	.029	.184*
	Sig. (2-tailed)		.000	.000	.736	.031
	Sum of Squares and Cross-products	94.734	72.633	54.727	3.806	25.464
	Covariance	.686	.526	.397	.028	.186
	N	139	139	139	139	138
Internet Connection	Pearson Correlation	.610**	1	.597**	.166	.309**
	Sig. (2-tailed)	.000		.000	.050	.000
	Sum of Squares and Cross-products	72.633	149.683	95.137	27.597	53.768
	Covariance	.526	1.085	.689	.200	.392
	N	139	139	139	139	138
Support Services	Pearson Correlation	.431**	.597**	1	.049	.269**
	Sig. (2-tailed)	.000	.000		.564	.001
	Sum of Squares and Cross-products	54.727	95.137	169.827	8.719	49.725
	Covariance	.397	.689	1.231	.063	.363
	N	139	139	139	139	138
Technique Issues	Pearson Correlation	.029	.166	.049	1	.358**
	Sig. (2-tailed)	.736	.050	.564		.000
	Sum of Squares and Cross-products	3.806	27.597	8.719	183.669	68.884

	Covariance	.028	.200	.063	1.331	.503
	N	139	139	139	139	138
Rescheduling of Ticketing	Pearson Correlation	.184*	.309**	.269**	.358**	1
	Sig. (2-tailed)	.031	.000	.001	.000	
	Sum of Squares and Cross-products	25.464	53.768	49.725	68.884	202.319
	Covariance	.186	.392	.363	.503	1.477
	N	138	138	138	138	138
**. Correlation is significant at the 0.01 level (2-tailed).						
*. Correlation is significant at the 0.05 level (2-tailed).						

Overall, the correlation coefficients ranged from 0.179 to 0.688, with all relationships being positive and statistically significant. These findings suggest that interpersonal influence, advertising, and promotional activities are related factors in shaping passengers' perceptions and willingness to use electronic ticketing systems. The results therefore provide evidence that the selected indicators consistently contribute to the measurement of Social Influence within the context of ETS adoption.

4.7 Facilitating Conditions on Electronic Ticketing Systems Adoption

The findings indicate that access to devices recorded the highest mean score (M = 4.51, SD = 0.829), suggesting that most respondents strongly agreed that they possess or can easily access smartphones, computers, or other digital devices required to use the electronic ticketing system. The relatively low standard deviation demonstrates consistency in respondents' views. This finding implies that device accessibility is not a major barrier to passengers' readiness to adopt electronic ticketing.

Similarly, internet connection received a high mean score (M = 4.24, SD = 1.041), indicating that respondents generally agreed that internet connectivity adequately supports the use of the electronic ticketing platform. Although some variation exists among respondents, the results suggest that internet availability positively contributes to passengers' ability to access and use the system.

The variable support services obtained a mean score of 3.85 (SD = 1.109), reflecting that respondents generally perceived customer support and assistance to be available when needed. This suggests that help desks, customer care personnel, and other support mechanisms contribute positively to passenger confidence in using the electronic ticketing system.

Regarding ticket rescheduling, respondents reported a moderate level of agreement (M = 3.54, SD = 1.215). This indicates that while passengers believe the system provides rescheduling functionality, there are mixed opinions regarding its efficiency or ease of use. The relatively

higher standard deviation suggests that passengers have varied experiences with ticket modification services.

In contrast, technical issues recorded the lowest mean score (M = 3.13, SD = 1.154), indicating only moderate agreement. This suggests that respondents continue to experience technical challenges such as system failures, application errors, or transaction interruptions when using the electronic ticketing system. The moderate standard deviation reflects differences in user experiences, with some passengers encountering more technical difficulties than others.

Pearson Correlation Analysis of Facilitating Conditions

The Pearson correlation analysis was conducted to examine the relationships among access to devices, internet connection, support services, technical issues, and rescheduling of ticketing. The analysis was based on 139 respondents, except for rescheduling of ticketing, which had 138 valid responses in Table 4.13.

Table 4.8: Pearson Correlation Analysis of Facilitating Conditions Indicators.

Correlations		Access Devices	Internet Connection	support Services	Technique Issues	Rescheduling of Ticketing
Access Devices	Pearson Correlation	1	.610**	.431**	.029	.184*
	Sig. (2-tailed)		.000	.000	.736	.031
	Sum of Squares and Cross-products	94.734	72.633	54.727	3.806	25.464
	Covariance	.686	.526	.397	.028	.186
	N	139	139	139	139	138
Internet Connection	Pearson Correlation	.610**	1	.597**	.166	.309**
	Sig. (2-tailed)	.000		.000	.050	.000
	Sum of Squares and Cross-products	72.633	149.683	95.137	27.597	53.768
	Covariance	.526	1.085	.689	.200	.392
	N	139	139	139	139	138
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	Sig. (2-tailed)	.000	.000		.564	.001

	Sum of Squares and Cross-products	54.727	95.137	169.827	8.719	49.725
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	Covariance	.028	.200	.063	1.331	.503
	N	139	139	139	139	138
Rescheduling of Ticketing	Pearson Correlation	.184*	.309**	.269**	.358**	1
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	Sum of Squares and Cross-products	25.464	53.768	49.725	68.884	202.319
	Covariance	.186	.392	.363	.503	1.477
	N	138	138	138	138	138

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Source: Field data (2026)

There is a strong positive correlation between access to devices and internet connection ($r = 0.610$, $p < 0.001$). This indicates that passengers who have better access to devices also tend to report better internet connectivity for using the electronic ticketing system.

Access to devices has a moderate positive relationship with support services ($r = 0.431$, $p < 0.001$). This relationship is statistically significant, suggesting that accessibility to appropriate devices is associated with the availability or effectiveness of support services.

Internet connection has a strong positive relationship with support services ($r = 0.597$, $p < 0.001$). This is one of the strongest relationships in the table and indicates that better internet connectivity is associated with better support services.

The relationship between technical issues and rescheduling of ticketing is moderate and statistically significant ($r = 0.358$, $p < 0.001$). This is an important finding because it suggests that passengers experiencing technical problems are more likely to report issues related to rescheduling their electronic tickets.

5.0 Discussion of Findings

5.1 Performance Expectancy on Electronic Ticketing Systems Adoption

The findings revealed a high level of agreement among respondents that ETS improves travel services. Specifically, ETS making purchasing faster recorded the highest mean score (M = 4.40, SD = 0.922), followed by ETS improving travel efficiency (M = 4.39, SD = 0.913) and reducing errors (M = 4.27, SD = 1.004). These results indicate that passengers perceive electronic ticketing as a useful technology that enhances convenience, efficiency, and accuracy in railway services. The findings in the line with, and supported by (Venkatesh et al.,2012), which identifies performance expectancy as one of the strongest predictors of behavioral intention to use technology. The findings agree with (Alalwan et al.2017), who found that performance expectancy significantly influences users' acceptance of digital services, particularly when users recognize improvements in convenience, speed, and service quality. Similarly (Chiu et al.,2018) reported that perceived usefulness and improved efficiency are important factors encouraging customers to adopt electronic service platforms.

5.2 Effort Expectancy on Electronic Ticketing Systems Adoption

The findings demonstrated that effort expectancy positively influences passenger technology readiness toward ETS. Respondents generally agreed that the system is easy to learn, understand, and operate. The highest-rated indicator was learning using ETS is easy (M = 4.21, SD = 0.924), followed by ETS are clear and understandable (M = 4.14, SD = 1.009). The indicators of little effort required to purchase tickets (M = 4.03) and easy navigation (M = 3.98). Venkatesh et al. (2016) argued that technologies requiring less effort are more likely to be accepted, especially among users with different levels of technological experience. The results are consistent with (Dwivedi et al.,2019), who found that ease of use remains an important factor influencing technology acceptance because users are more willing to adopt systems that require minimal learning effort. Similarly (Alalwan et al., 2017)

5.3 Social Influence on Electronic Ticketing Systems Adoption

All social influence indicators recorded mean values above the neutral point, ranging from 3.47 to 4.00, demonstrating that recommendations, advertisements, and encouragement from important individuals influence passengers' decisions to adopt electronic ticketing. The results are consistent with (Rahi et al.,2019), who found that social influence significantly affects users' acceptance of electronic services because individuals often rely on recommendations and opinions from trusted sources before adopting new technologies. Similarly (Alalwan et al.,2017) emphasized that social interaction and promotional communication strengthen users' confidence in digital platforms.

5.4 Facilitating Conditions on Electronic Ticketing Systems Adoption

Facilitating conditions positively influence passenger technology readiness toward ETS. Among the indicators, access to devices recorded the highest mean score (M = 4.51, SD = 0.829), followed by internet connection (M = 4.24, SD = 1.041). This demonstrates that passengers

generally have access to the technological resources required to use electronic ticketing. The results agree with (Oliveira et al.,2016), who found that availability of technological resources, internet accessibility, and support systems encourage adoption of digital services. Similarly (Dwivedi et al., 2019) emphasized that technology adoption depends not only on user attitudes but also on the availability of supporting infrastructure.

6.0 Conclusion and Recommendation

Overall, the study concludes that electronic ticketing has been well received by TRC passengers and holds strong potential to enhance service delivery on the SGR. However, sustained readiness and adoption will depend on TRC's ability to address the technical and infrastructural gaps identified, while continuing to build on the positive perceptions passengers already hold regarding the system's usefulness and ease of use

TRC should invest in strengthening the technical stability of the ETS platform, including reducing transaction failures and system downtime, since technical issues recorded the lowest mean score among facilitating condition indicators. Also, TRC should improve the ticket rescheduling function to make it more efficient and user friendly, given the moderate satisfaction levels reported by passengers on this feature. TRC should enhance the user interface and navigation design of the ETS platform to reduce the difficulties experienced by some passengers, particularly first-time users, older passengers, and those with limited digital literacy.

Areas for Further Research Since this study focused specifically on the Dar es Salaam-Dodoma SGR corridor, future research could extend the scope to other railway corridors and transport modes in Tanzania to assess whether similar patterns of technology readiness hold across different contexts. Further studies could also employ inferential and predictive modeling techniques, such as structural equation modeling, to examine the strength and direction of causal relationships between UTAUT constructs and actual usage behavior. Additionally, future research could incorporate a qualitative dimension to explore the underlying reasons behind passengers' perceptions, particularly regarding recurring technical issues and variations in social influence.

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