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Beyond Convenience: A Socio-Technical Assessment of E-Ticketing in Nigeria

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ABSTRACT

Electronic ticketing has become an important component of modern transportation services, allowing passengers to search, purchase, and receive ticket confirmations without relying on traditional booking channels. However, the availability of a digital booking platform does not necessarily guarantee a satisfactory service experience. This study examines e-ticketing as a socio-technical service in which technological, informational, and human factors interact to influence customer satisfaction. A descriptive quantitative survey was conducted among adults who had used electronic ticketing services for air or road transportation in Nigeria. Of the 180 questionnaires distributed, 150 usable responses were obtained, representing an 83.3% response rate. The 16-item instrument, measured on a four-point Likert scale, achieved a Cronbach's alpha reliability coefficient of 0.75. Data were analysed using frequencies, percentages, and Pearson chi-square tests with IBM Statistical Package for the Social Sciences (SPSS) version 27. Findings revealed strong positive perceptions of convenience, overall satisfaction, security and privacy, navigation usability, information reliability, and system reliability. However, perceptions were less consistent regarding transaction speed, customer support, and overall service quality. The three chi-square tests showed statistically significant associations, although assumption limitations in two tests require cautious interpretation. The findings show that successful e-ticketing experiences depend not only on convenience but also on the combined performance of the digital platform and supporting service environment. Reliable systems, accurate information, and responsive support remain essential for sustaining customer satisfaction.

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INTRODUCTION

Electronic ticketing has changed a simple but important part of the transport journey: buying a ticket. Passengers can now search, pay and receive confirmation without visiting a booking office. For transport providers, this can reduce manual handling and some transaction costs, while passengers benefit mainly from convenience and easier access (Boyer et al., 2002). Yet convenience alone does not determine whether users are satisfied. Studies of e-ticketing show that ease of use, security, reliability and access to customer support also shape how customers evaluate the service (Qteishat et al., 2014; Sulaiman et al., 2008).

That convenience, however, rests on a wider service system. A booking platform has to remain available; payment and personal data have to be protected, the interface has to be understandable, and help has to be available when a transaction fails. In other words, the customer does not experience the technology separately from the service around it. A fast interface followed by a failed payment, an unclear confirmation or an unanswered complaint can still produce a poor overall experience.

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Earlier studies have linked e-ticketing satisfaction to factors such as ease of use, security, reliability, service quality and customer support. Sulaiman et al. (2008) found that consumer perceptions of convenience, reliability and security influenced acceptance of e-ticketing, while Qteishat et al. (2014) demonstrated that data security, customer support and user-friendliness were significant factors affecting satisfaction. Technology-acceptance research also shows that perceived usefulness and ease of use influence whether users accept a system (Davis, 1989), while information-systems research distinguishes system quality, information quality and service quality as separate contributors to user outcomes (DeLone & McLean, 1992, 2003). These perspectives are useful because they show that e-ticketing is neither purely technical nor purely a customer-service problem.

The Nigerian transport context deserves specific attention. Air and road passengers increasingly use digital channels, yet the quality of the experience may vary with infrastructure, user familiarity, payment conditions and the responsiveness of service providers. Evidence from other countries cannot simply be assumed to describe the Nigerian experience. This study therefore examines e-ticketing as a socio-technical service. It asks whether users' positive views of convenience are matched by equally positive views of reliability, security, usability, information quality and customer support. The study has three objectives: to assess customer perceptions of e-ticketing and satisfaction; to examine the socio-technical factors associated with satisfaction; and to evaluate the role of service quality in the e-ticketing experience.

Related Work and Conceptual Basis

E-ticketing is often discussed as a digital substitute for paper tickets, but its operation is broader than ticket issuance. Selection, payment, confirmation, storage and validation depend on connected web, mobile, database and payment services. The attraction is obvious: customers can transact remotely and providers can reduce printing, distribution and manual processing costs (Boyer et al., 2002). The weakness is equally clear: when the supporting infrastructure is slow or unavailable, the convenience promised by the service quickly disappears.

Security and privacy are part of that experience. Transport e-ticketing can involve personal details, payment information and travel patterns. Mut-Puigserver et al. (2012) note that electronic transport ticketing creates privacy and security concerns because the same infrastructure that makes travel convenient can also make users more traceable. From the customer's point of view, security therefore affects trust as well as technical protection.

Usability is another recurring theme. Davis (1989) identifies perceived usefulness and perceived ease of use as central to technology acceptance. In an e-ticketing setting, usefulness is reflected in time saved, remote access and simpler booking, while ease of use is reflected in whether users can find information, complete payment and retrieve their ticket without unnecessary effort. Dekkers and Rietveld (2007) also show that familiarity matters: regular users may experience a ticketing system differently from occasional users.

Service quality broadens the analysis beyond the interface. The SERVQUAL model, developed by Parasuraman et al. (1988) as a framework for assessing service quality, identifies reliability, assurance, tangibles, empathy and responsiveness as key dimensions through which customers evaluate service experiences. In a digital ticketing context, reliability relates to consistent system performance, assurance to security and trust, tangibles to the visible design of the interface, and responsiveness to the quality of help when problems occur. This is important because digitalisation does not remove the need for service recovery; it changes where and how that support is delivered.

The Information Systems Success Model provides a similar but more technology-centred distinction between system quality, information quality and service quality (DeLone & McLean, 1992, 2003). These dimensions fit e-ticketing particularly well. A platform may work technically but still provide unclear information; it may provide accurate information but offer weak

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support; or it may be easy to use but unreliable at busy periods. Treating these elements separately makes it possible to see where the customer experience is strong and where it is not.

The empirical literature generally supports this multi-dimensional view. Sulaiman et al. (2008) found that convenience, reliability, security and ease of use influenced consumer perceptions of e-ticketing, while Qteishat et al. (2014) identified security, technical support and user-friendliness as important determinants of customer satisfaction. Chang et al. (2009) further demonstrated that e-service quality and customer satisfaction are closely connected with loyalty. However, less is known about how these technical and service dimensions are experienced together by Nigerian transport users. The present study addresses this gap by examining convenience, system quality, security, information quality, usability and customer support within the same survey.

Materials and Methods

The study used a descriptive quantitative survey design. The target population was adults aged 18 years and above who had purchased air or road transport tickets electronically in Nigeria. Data were collected through an online self-administered questionnaire. The instrument, titled Questionnaire on Impact of E-Ticketing Technique on Customer Satisfaction (QIETCS), contained 16 items measured on a four-point Likert scale from Strongly Disagree (1) to Strongly Agree (4). Face and content validity were assessed by the research supervisor and other academic reviewers. Internal consistency was tested with Cronbach's alpha, which produced a coefficient of 0.75.

A total of 180 questionnaires were distributed and 150 were completed sufficiently for analysis, producing an effective response rate of 83.3%. The respondents included users of electronic ticketing services across the Nigerian air and road transport sectors. Frequency distributions and percentages were used to summarise the sample and the survey items. Pearson chi-square tests were used to evaluate the three study hypotheses at the 0.05 significance level in SPSS version 27. Because the study is cross-sectional, the statistical results are interpreted as associations rather than causal effects. In addition, the SPSS output for two tests reported that 37.5% of expected cell counts were below five. Those tests are therefore interpreted cautiously.

Assessment Dimensions

The socio-technical assessment focused on five connected parts of the e-ticketing experience: convenience and perceived usefulness; security and privacy; interface usability and navigation; information and system reliability; and customer support/service quality. These dimensions were selected because they represent both the technical performance of the platform and the human-facing service surrounding it. The aim was not to build a new formal socio-technical theory, but to use these dimensions as a practical way of reading the survey evidence across technology and service boundaries. This perspective follows the idea that digital services are shaped by the interaction between technological infrastructure, information processes and human service experiences rather than by technology alone.

RESULTS

Respondent Profile

The analysis was based on 150 valid responses. Male respondents accounted for 56.7% of the sample and female respondents 43.3%. The largest age group was 18-27 years (45.3%), followed by 28-37 years (24.0%), 38-47 years (23.3%), and 47 years and above (7.3%). The sample was therefore weighted towards younger users. That matters when interpreting usability because younger respondents may be more accustomed to digital services; the figures should not be treated as population-level estimates of e-ticketing usage in Nigeria.

Socio-Technical Experience

Convenience was one of the clearest strengths. Overall, 88.7% of respondents agreed or strongly agreed that e-ticketing improved the

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convenience of purchasing and using transport services. Respondents also reported positive satisfaction with their overall e-ticketing experience.

The picture changed when respondents were asked about speed and efficiency. Only 46.7% gave a positive response, while 52.0% disagreed that e-ticketing had improved the speed and efficiency of ticketing compared with traditional methods. This unusually divided pattern suggests that remote access and faster processing are not experienced as the same thing. A passenger may appreciate being able to book from a phone and still encounter delays during payment, confirmation or service recovery.

Security, usability and information quality were rated more positively. Ninety per cent of respondents were satisfied with security and privacy measures; 86.6% were positive about ease of navigation and user-friendliness; and 89.4% regarded the accuracy and reliability of information as important to their satisfaction. System reliability was also strongly rated, with 88.0% agreeing or strongly agreeing that it influenced overall satisfaction.

Customer support was weaker than the technical dimensions. Although 62.0% rated support as responsive and helpful, 38.0% did not. Overall service quality also produced a more mixed result, with 59.3% positive responses and 40.6% disagreement. The contrast is important: users were generally comfortable with the platform itself, but their experience of the wider service surrounding the platform was less consistent.

Table 1. Selected e-ticketing experience indicators

Indicator	Agree/Strongly Agree (%)
Convenience of purchasing and use	88.7
Improved efficiency and speed	46.7
Security and privacy	90.0
Ease of navigation/user-friendliness	86.6
Accuracy/reliability of information	89.4
System reliability	88.0
Responsive/helpful customer support	62.0
Overall service quality	59.3

Note: Positive response = Agree and Strongly Agree. Source: Fieldwork, 2025.

Hypothesis Testing

The first test examined the association between e-ticketing and customer satisfaction. The reported result was statistically significant, $\chi^2(3) = 10.667$, $p = .014$. The second test examined the contribution of the identified socio-technical factors to satisfaction and produced $\chi^2(3) = 23.447$, $p < .001$. The third test examined service quality and customer satisfaction and produced $\chi^2(3) = 26.671$, $p < .001$.

These results support the general conclusion that e-ticketing experience, socio-technical service factors and service quality are associated with customer satisfaction in the sample. They do not establish causation. The first and third tests also require caution because the original SPSS output reported that 37.5% of expected cell counts were below five, with minimum expected counts of 1.03 and 0.19 respectively.

Table 2. Pearson chi-square results

Test	χ^2	df	p	Interpretation
E-ticketing and customer satisfaction	10.667	3	.014	Significant; interpret cautiously

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Test	χ^2	df	p	Interpretation
Socio-technical factors and satisfaction	23.447	3	< .001	Significant
Service quality and customer satisfaction	26.671	3	< .001	Significant; interpret cautiously

DISCUSSION OF FINDINGS

The results show why e-ticketing should be judged as more than a digital access channel. Users were highly positive about convenience, security, navigation, information reliability and system reliability, yet they were far less uniform in their views of speed, customer support and overall service quality. The service works through a chain of technical and human interactions, and weakness in one part can change the customer's view of the whole experience.

The strong convenience result is consistent with the basic promise of e-ticketing and with the Technology Acceptance Model. A system that removes the need to travel to a booking office has obvious perceived usefulness (Davis, 1989). Sulaiman et al. (2008) similarly found that convenience and ease of use were important factors influencing consumers' acceptance of e-ticketing. The present results, however, show that convenience should not be confused with efficiency. The sharply divided responses on speed suggest that users can value remote access while still experiencing delays or friction once a transaction begins.

The positive ratings for navigation, information reliability and system reliability also fit the Information Systems Success Model. DeLone and McLean (1992, 2003) separate system quality from information quality and service quality for good reason: they are experienced differently. A stable platform with clear information can produce a strong transactional experience even when the surrounding customer-support process is weaker. Security and privacy were rated positively by most respondents. That matters because trust remains important in online services. Mut-Puigserver et al. (2012) show that transport e-ticketing can create privacy concerns through the collection and movement of personal data. The present result indicates confidence in the systems respondents had used, but it should not be overread. The survey measured perceived security; it did not test whether the underlying systems were technically secure.

The support findings are arguably the most useful practical result. Nearly four in ten respondents did not rate customer support positively, and overall service quality was much more mixed than system reliability or usability. This suggests that transport providers may have made greater progress in digitising the transaction than in redesigning the service around it. SERVQUAL helps explain the difference: reliability and assurance may be reasonably strong while responsiveness remains uneven (Parasuraman et al., 1988).

This is where the socio-technical interpretation adds value. Infrastructure supports availability, security supports trust, usability reduces effort, information quality reduces uncertainty, and responsive support helps recover the service when a transaction fails. Customers do not experience these as separate academic constructs. They experience one booking journey. The implication is simple: improving the platform without improving the surrounding service process can leave important sources of dissatisfaction untouched.

Practical Implications for Transport Providers

Transport providers should treat e-ticketing improvement as both a system-design and a service-management problem. Platform teams should continue to simplify navigation, strengthen transaction reliability and present booking information clearly across devices. Where internet conditions are variable, interfaces should avoid unnecessary steps and provide clear

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feedback when payments or confirmations are delayed.

Customer support deserves equal attention. Failed transactions, refunds, corrections and access problems should have visible escalation routes and realistic response times. Feedback from these cases should also be returned to technical and operations teams so that recurring service failures are corrected rather than repeatedly handled as isolated complaints.

Finally, customer confidence in security should be supported by clear privacy communication and reliable back-end controls. Positive perceptions are useful, but they should rest on sound technical practice rather than on assumption alone.

Limitations of the Study

The study used an online cross-sectional survey and captured perceptions at one point in time. The sample contained a relatively large proportion of younger respondents, which may limit generalisation to older or less digitally experienced passengers. The instrument also did not model every possible determinant of satisfaction, including pricing, provider-specific differences and perceived value. Two chi-square tests had more than 20% of expected cell counts below five, weakening the usual chi-square approximation. Future work should consider larger samples, exact tests or suitable regression models, as well as longitudinal designs that can track changes in expectations over time.

Contribution to Knowledge

The study contributes context-specific evidence on e-ticketing in Nigeria by examining technical and service dimensions together rather than treating digital ticketing as a single convenience feature. It shows that strong ratings for usability, security and reliability can coexist with weaker ratings for speed, support and overall service quality. The main contribution is therefore the socio-technical distinction between access to a digital channel and the quality of the complete service experience.

CONCLUSION

E-ticketing is positively regarded by many of the surveyed users, particularly for convenience, security, navigation, information reliability and system reliability. Yet the experience is not uniformly positive. Speed and efficiency divided respondents sharply, while customer support and overall service quality received noticeably weaker evaluations. The findings support a socio-technical view of e-ticketing: a digital ticketing platform succeeds when the technical system and the surrounding service process work together. Convenience may encourage continued use, but sustained satisfaction depends on the quality of the complete service experience: whether transactions are completed successfully, information remains accurate and clear, and support is available when problems occur.

Data Availability Statement

The study data were collected as part of the author's master's research and are not deposited in a public repository. De-identified data may be made available by the author subject to applicable ethical, institutional and privacy conditions.

Ethics Statement

The study involved adult users of e-ticketing services who completed an online questionnaire. No personally identifying information is reported in this article. Ethical procedures were followed in accordance with institutional research requirements.

Author Contributions

Darlington Nwanebu: conceptualisation, methodology, investigation, data collection, formal analysis, interpretation, writing - original draft, and writing - review and editing.

Conflict of Interest

The author declares no conflict of interest associated with this study.

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