



Effect of Situation Analysis on the Implementation of a Web-Based Airline Reservation System at Topix Agency Limited

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Abstract: *This study assessed the effect of situation analysis on the implementation of a web-based airline reservation system at Topix Agency Limited in Rwanda. The study was guided by systems theory and stakeholder theory. A descriptive survey design using a mixed-methods approach was adopted. The target population comprised 119 employees and stakeholders, from which 108 respondents were selected using Slovin's formula and stratified random sampling. Data were collected using structured questionnaires, semi-structured interviews, and documentary review. Quantitative data were analyzed using descriptive statistics, Pearson correlation, and multiple regression in SPSS version 27, while interview data were analyzed thematically. Situation analysis was strongly and positively correlated with implementation ($r = .670, p < .01$) and had a significant positive effect on implementation ($\beta = .658, p < .001$) after controlling for other project design practices. The study recommends that the agency institutionalize comprehensive situation analysis, covering stakeholder analysis, problem analysis, and needs assessment, and allow sufficient time for it before and throughout system implementation.*

Keywords: *Situation, Analysis, Implementation, Airline, Reservation, Stakeholders*

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1. Introduction

The rapid growth of digital technologies has transformed the aviation and travel industry, making web-based airline reservation systems increasingly important for efficient booking, customer service, and operational management. These systems enable customers to search flights, check availability, make reservations, and access services remotely. Their effectiveness, however, depends not only on technological capabilities but also on the quality of project design practices used during their implementation. Effective situation analysis is therefore essential for

ensuring that reservation systems meet organizational and customer requirements.

Globally, web-based airline reservation systems have become central to the digital transformation of the aviation industry. They support real-time booking, ticketing, customer management, and operational efficiency while improving customer experience and organizational competitiveness (Zhang et al., 2022; Santos & Oliveira, 2021). However, challenges related to system integration, cybersecurity, scalability, and changing customer expectations require effective project design and implementation practices (Lee, 2023). User-centred

design, performance testing, Agile methodologies, and integration with payment gateways and global distribution systems are increasingly important in ensuring reliable reservation platforms (Kaur & Kumar, 2020; Anderson & Jones, 2021).

In the United States, airline reservation systems emphasize secure, scalable, and user-friendly platforms. Agile project management supports adaptation to changing airline operations, while user-experience design improves accessibility and customer satisfaction (Thomas & Lee, 2020; Johnson, 2024). Similarly, China has invested in scalable reservation platforms capable of managing high traffic volumes and real-time information, with increasing attention to user-centred design and iterative development (Zhang & Li, 2021; Zhang & Xu, 2024). These experiences demonstrate that effective project design is fundamental to successful digital reservation systems.

In Sub-Saharan Africa, implementation is influenced by technological infrastructure, financial constraints, cybersecurity, and varying levels of digital access. Consequently, project planning and Agile approaches are important for implementing systems incrementally while responding to local conditions (Sanni & Olatunji, 2023; Moyo et al., 2022). User-centred and mobile-friendly designs are also important for addressing diverse passenger needs (Amara & Dlamini, 2023). In South Africa, airlines have increasingly integrated artificial intelligence and data analytics into reservation systems, although cybersecurity, infrastructure, and system integration remain challenges (van der Merwe & Meyer, 2021; Smith & Pretorius, 2023).

In Kenya, airlines increasingly use online and mobile booking platforms to improve accessibility and operational efficiency. Nevertheless, inconsistent internet access, cybersecurity threats, and technological changes continue to affect implementation (Wachira et al., 2021). Agile approaches and user-centred design have therefore become increasingly relevant to system development (Gitari & Muturi, 2023; Odhiambo & Omondi, 2020).

In Rwanda, the expansion of aviation, tourism, and business travel has increased the importance of digital reservation systems. These platforms support faster bookings, accurate pricing, and real-time updates, although limitations in digital infrastructure, internet costs, and technical skills remain concerns (Ntigurirwa & Mutesa, 2022; Rukundo & Uwera, 2021). Agile project management, mobile-friendly interfaces, localized services, and simplified booking processes can improve implementation and user adoption (Nshimiyimana & Uwase, 2023; Karekezi & Gasana, 2020).

At Topix Agency Limited, the adoption of a web-based airline reservation system represents an opportunity to

improve booking efficiency, customer accessibility, and competitiveness in Rwanda's travel and tourism industry. However, successful implementation requires a sound understanding of user requirements, system resources, and technological challenges, which situation analysis is intended to provide. This study therefore examined how situation analysis influences implementation of the web-based airline reservation system at Topix Agency Limited.

1.2 Statement of the Problem

Despite the growing importance of digital reservation systems, their implementation may be constrained by inadequate project design, poor understanding of user requirements, weak planning, and insufficient monitoring. Globally, studies have reported problems including low user satisfaction, slow processing, scalability limitations, and system failures during periods of high demand (Zhang & Xie, 2020; Kumar & Mehta, 2021). Such weaknesses can result in customer dissatisfaction, lost bookings, operational inefficiencies, and financial losses (Patel, 2023).

In Rwanda, the continued growth of tourism and travel creates increasing demand for efficient digital services. However, technological infrastructure, cybersecurity, financial constraints, and limited technical capacity can complicate implementation. Although Topix Agency Limited has adopted a web-based airline reservation system, limited empirical evidence exists on how situation analysis influences its implementation. Specifically, the effect of situation analysis on implementation has not been sufficiently established. This study therefore addressed this gap by examining the effect of situation analysis on implementation of the web-based airline reservation system at Topix Agency Limited.

1.3 Objective of the Study

The objective of this study was to assess the effect of situation analysis on the implementation of a web-based airline reservation system at Topix Agency Limited.

2. Literature Review

2.1 Empirical Review

An empirical review helps establish what is already known, identify areas of agreement and contradiction, and reveal gaps that justify further investigation. This section reviews empirical studies on situation analysis in relation to project implementation.

Osei et al. (2021) examined the importance of situation analysis in organizational strategy implementation using a mixed-methods approach involving 1,500 industrial managers. The findings showed that organizations assessing market trends, competition, internal capabilities,

and available resources were more successful in implementing strategies. Similarly, Kessy et al. (2022), using case studies of five construction projects in Tanzania, found that analysis of environmental conditions, stakeholder expectations, and resources improved adherence to project schedules and budgets. Choi et al. (2021) also found in South Korean public health programmes that assessing local needs and implementation contexts enhanced project execution, particularly when combined with stakeholder participation. Mwangi and Njiru (2023), studying 120 IT personnel in Kenyan banks, further established that organizational support, communication, and continuous monitoring contributed to successful IT project implementation.

2.2 Theoretical Framework

The study was guided by Systems Theory and Stakeholder Theory. These theories provided complementary perspectives for explaining how situation analysis influences implementation of a web-based airline reservation system at Topix Agency Limited.

2.2.1 Systems Theory

Systems Theory, associated with von Bertalanffy (1968), views an organization or project as an interconnected system in which changes in one component affect other components. The theory is relevant to this study because implementation of a web-based airline reservation system involves interaction among technology, human resources, finances, customers, management, and the external environment. Situation analysis therefore requires assessment of these interconnected factors before implementation. The major strength of the theory is its holistic perspective, which enables managers to understand relationships among different project components and use feedback to improve performance (Daft, 2022). However, its broad scope can make it difficult to isolate specific causal relationships and prioritize interventions (Jackson, 2023). Despite this limitation, systems theory provides a suitable foundation for explaining how situation analysis contributes to successful system implementation.

2.2.2 Stakeholder Theory

Stakeholder Theory, introduced by Freeman (1984), emphasizes the identification and management of the interests of individuals and groups affected by organizational decisions. In this study, relevant stakeholders include managers, system developers, employees, customers, and other users of the reservation system. The theory is particularly applicable to situation analysis because stakeholder participation can help identify requirements, anticipate risks, improve communication, and increase acceptance of the system. Its strength lies in promoting inclusiveness, accountability, and alignment

between project decisions and stakeholder expectations (Harrison & Wicks, 2021). However, stakeholders may have competing interests, making consensus difficult and potentially increasing project costs and delays (Donaldson & Preston, 2022). Despite this weakness, structured stakeholder engagement can enhance situation analysis and facilitate successful implementation of the reservation system.

2.3 Conceptual Framework

The conceptual framework illustrates the relationship between situation analysis and implementation of the web-based airline reservation system. The independent variable is situation analysis, assessed through stakeholder analysis, problem analysis, and needs assessment, while project implementation is the dependent variable, assessed through timeliness of deliverables, quality of outputs, and budget. The framework is informed by systems theory and stakeholder theory. Situation analysis establishes the project context, which in turn shapes how the system is specified, delivered, and resourced.

2.4 Research Gaps

Previous studies establish that situation analysis contributes to effective project implementation (Osei et al., 2021; Kessy et al., 2022). However, limited research has examined this practice within web-based information system projects. Existing studies also focus mainly on construction, healthcare, infrastructure, and education, with limited evidence from airline reservation systems and Rwanda. This study therefore addresses contextual, sectoral, and empirical gaps by examining the effect of situation analysis on implementation at Topix Agency Limited.

3. Methodology

3.1 Research Methodology

This study adopted a mixed-methods approach to investigate the effect of situation analysis on the implementation of a web-based airline reservation system at Topix Agency Limited. The approach integrated quantitative and qualitative data to provide a comprehensive understanding of situation analysis and its relationship with system implementation. Quantitative data were collected through structured questionnaires, while qualitative information was obtained through semi-structured interviews and documentary review. The combination of these methods enabled the researcher to quantify relationships among the study variables while also obtaining contextual explanations from individuals directly involved in the project.

3.2 Research Design

The study employed a descriptive research design. The design was appropriate because it enabled the researcher to examine existing situation analysis practices and their effect on the implementation of the web-based airline reservation system without manipulating the study variables. The design also facilitated the collection of information from project managers, system developers, IT staff, end-users, decision-makers, and department heads concerning their experiences with the system. Quantitative findings were complemented by qualitative information to provide a broader interpretation of the implementation process. The study therefore generated both measurable evidence and contextual explanations regarding the contribution of situation analysis to system implementation.

3.3 Target Population and Sampling

The target population comprised 119 employees and stakeholders directly involved in the implementation and operation of the web-based airline reservation system at

Topix Agency Limited. These included project managers, system developers, IT staff, end-users, decision-makers, and department heads. Project managers provided information concerning project coordination, while system developers and IT staff contributed technical perspectives. End-users provided information regarding system usability and operational performance, whereas decision-makers and department heads provided strategic and managerial perspectives.

The study used stratified random sampling to ensure representation of the different categories within the target population. The population was divided into six strata: project managers, system developers, IT staff, end-users, decision-makers, and department heads. Respondents were then selected proportionately from each stratum. This approach was appropriate because the categories differed in their roles, responsibilities, and experiences with the reservation system. It therefore reduced the possibility of overrepresenting one category while excluding important perspectives. The sample size was determined using Slovin's formula. With a population of 119 and an appropriate margin of error, the calculated sample was 92 respondents.

Table 1: Sampling Frame

Category	Population	Sample
Project managers	5	4
System developers	10	8
IT staff	20	15
End-users (regular users)	60	46
Decision-makers (stakeholders)	10	8
Department heads	14	11
Total	119	92

3.4 Research Instruments

The study used questionnaires, semi-structured interviews, and documentary review. A structured questionnaire was administered to sampled respondents to collect quantitative data on situation analysis and system implementation. Semi-structured interviews were conducted with selected project managers, system developers, IT staff, and decision-makers to obtain detailed explanations concerning project implementation experiences and challenges. Documentary review was used to examine relevant project proposals, plans, reports, implementation records, and organizational documents. The use of multiple instruments facilitated triangulation and strengthened the interpretation of the findings.

3.5 Validity and Reliability

The research instruments were piloted before the main data collection. The pilot involved 10 respondents from Satguru Ltd., an organization considered sufficiently similar to Topix Agency Limited in terms of information technology and airline reservation operations. The pilot assessed the clarity, relevance, consistency, and appropriateness of the questionnaire and interview guide. Feedback obtained from the pilot was used to revise ambiguous or unclear items. The pilot also enabled the researcher to estimate the time required to administer the instruments and identify potential challenges in data collection.

Validity was established through expert review and assessment of content, face, construct, and criterion

validity. Content validity ensured that the instruments adequately covered the study variables and their indicators. Face validity involved reviewing the clarity and appropriateness of questionnaire and interview items. Construct validity was considered by linking measurement items to the study objectives and theoretical framework, while criterion validity was assessed by comparing the measures with established approaches used in related studies. Reliability was assessed using pilot testing and Cronbach's alpha to determine the internal consistency of questionnaire items. A Cronbach's alpha coefficient of 0.70 or above was considered acceptable. The pilot results also helped identify items that required modification or removal. These procedures enhanced the consistency and dependability of the instruments before their administration to the main respondents. Trustworthiness of qualitative data was enhanced through triangulation, member checking, and systematic documentation. Information obtained from interviews was compared with questionnaire responses and documentary evidence. The researcher maintained records of data collection, coding, interpretation, and analysis to promote transparency and dependability.

3.6 Data Analysis Techniques and Presentation

Quantitative data were coded, entered, cleaned, and analyzed using SPSS version 27. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and study variables. Inferential statistics included Pearson correlation and multiple regression analysis to establish the relationship between situation analysis and system implementation, with the other project design practices entered as control variables. The regression model was specified as:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu$$

Where Y represents project implementation; X_1 represents situation analysis; X_2 – X_4 represent the control variables (project formulation, project planning, and monitoring and evaluation); β_1 – β_4 represent the respective regression coefficients; α is the constant; and μ is the error term. Qualitative interview data were analyzed thematically by identifying recurring patterns and explanations relevant to the study objective. Findings were presented using tables, figures, and explanatory text.

3.7 Ethical Considerations

The study adhered to ethical principles throughout the research process. Formal permission to access the study site was obtained from the relevant authorities at Topix Agency Limited. Participants received adequate information about the purpose, procedures, potential benefits, and risks of the study before providing informed consent. Participation was voluntary, and respondents were free to decline participation or withdraw without penalty.

Confidentiality and privacy were maintained by avoiding the disclosure of participants' personal identifiers in the analysis and reporting of findings. Codes were used instead of names where appropriate. The collected data were securely stored, with physical documents kept in a secure location and electronic files protected through password-controlled devices. Data were used exclusively for academic purposes. The researcher also respected intellectual property by appropriately acknowledging all sources and avoiding plagiarism. Throughout the study, professional conduct, respect, cultural sensitivity, and courtesy were maintained when interacting with participants. The researcher ensured that no participant was subjected to coercion, discrimination, or unnecessary harm. These measures protected participants' rights and strengthened the ethical integrity of the study.

4. Results and Discussion

This section presents the findings in relation to the study objective, which was to assess the effect of situation analysis on the implementation of the web-based airline reservation system at Topix Agency Limited. Descriptive results are presented first, followed by correlation and regression results, interview findings, and a discussion of the findings.

4.1 Descriptive Results on Situation Analysis

Table 2 presents respondents' views on situation analysis and its role in implementing the web-based airline reservation system. Five-point Likert-scale responses, means, and standard deviations indicate how organizational needs, technical capacity, user requirements, and operational context were assessed.

Table 2: Respondents' Views on Situation Analysis

Statement	SD	D	NS	A	SA	Mean	Std. Dev.
The identification of key stakeholders was thoroughly conducted before the system implementation.	3.3%	1.1%	3.3%	32.2%	60.0%	4.44	0.888
The interests and expectations of stakeholders were adequately considered during the situation analysis phase.	1.1%	1.1%	1.1%	41.1%	55.6%	4.49	0.691
Stakeholders were engaged early in the project to ensure their concerns were addressed in the system design.	2.2%	4.4%	2.2%	33.3%	57.8%	4.40	0.909
A comprehensive analysis of the problems faced by the agency was conducted before designing the system.	1.1%	1.1%	3.3%	27.8%	66.7%	4.58	0.719
The situation analysis effectively identified key technical and operational challenges to be addressed in the system.	2.2%	0.0%	3.3%	44.4%	50.0%	4.40	0.761
The system design was based on a thorough assessment of the agency's operational needs.	1.1%	2.2%	4.4%	33.3%	58.9%	4.47	0.782
The needs of end-users (employees) were thoroughly assessed and incorporated into the system design.	1.1%	3.3%	3.3%	38.9%	53.3%	4.40	0.804
The system met the majority of the identified needs from both the stakeholders' and end-users' perspectives.	1.1%	3.3%	4.4%	41.1%	50.0%	4.36	0.812
Composite mean						4.44	

SD = strongly disagree; D = disagree; NS = not sure; A = agree; SA = strongly agree; Std. Dev. = standard deviation.

Table 2 presents respondents' views on the role and effectiveness of situation analysis in the implementation of the web-based airline reservation system at Topix Agency Limited. Across all eight statements, responses consistently reflect strong agreement, with item mean scores ranging from 4.36 to 4.58 on a 5-point Likert scale, indicating that situation analysis was perceived as rigorously conducted. The highest-rated item "A comprehensive analysis of the problems faced by the agency was conducted before designing the system" (Mean = 4.58, *SD* = 0.719) suggests that respondents believed the project team effectively diagnosed organizational pain points prior to development. This aligns with best practices in systems development, where problem identification is foundational to designing contextually relevant solutions (Mugenda & Mugenda, 2021; Oluoch & Were, 2022). Such thorough diagnostic work enables alignment between system functionality and real-world operational demands, reducing the risk of post-implementation mismatches.

The data further reveals robust stakeholder engagement during the early phases of the project. For instance, 60.0%

of respondents strongly agreed that "the identification of key stakeholders was thoroughly conducted," while 57.8% strongly agreed that "stakeholders were engaged early... to ensure their concerns were addressed." Similarly, high agreement was recorded on whether stakeholder interests (55.6% SA) and end-user needs (53.3% SA) were adequately assessed and incorporated. These findings underscore a user-centered and participatory approach to system design, which research shows significantly enhances system acceptance and long-term usability (Kizza, 2023; Saunders et al., 2023). Early and inclusive stakeholder involvement not only builds ownership but also surfaces critical requirements that might otherwise be overlooked by technical teams working in isolation.

Finally, respondents affirmed that the resulting system reflected the insights gathered during situation analysis. Over 50% strongly agreed that "the system met the majority of the identified needs from both stakeholders' and end-users' perspectives" (Mean = 4.36), and 58.9% strongly agreed that "the system design was based on a thorough assessment of the agency's operational needs." The low standard deviations (ranging from 0.691 to 0.909)

indicate consensus among respondents, reinforcing the reliability of these perceptions. Collectively, these results demonstrate that situation analysis at Topix Agency Limited was not merely procedural but substantively effectively bridging organizational challenges with technical solutions. This corroborates contemporary project management literature emphasizing that a well-executed situation analysis is a critical predictor of successful ICT implementation in service-oriented organizations (Chisanti & Mtebe, 2021; Oluoch & Were, 2022).

4.2 Descriptive Results on Project Implementation

Table 3 presents respondents' perceptions of project implementation, focusing on system functionality, user adoption, technical support, timeliness, and alignment with objectives, using Likert-scale responses, means, and standard deviations.

Table 3: Respondents' Views on Project Implementation

Statement	SD	D	NS	A	SA	Mean	Std. Dev.
The web-based airline reservation system was delivered on time.	2.2%	4.4%	8.9%	31.1%	53.3%	4.29	0.963
The project milestones were met according to the planned schedule.	4.4%	1.1%	6.7%	34.4%	53.3%	4.31	0.979
Any delays in the project were communicated effectively to all stakeholders.	3.3%	5.6%	3.3%	28.9%	58.9%	4.34	1.018
The project team was proactive in addressing any delays or obstacles.	2.2%	1.1%	5.6%	28.9%	62.2%	4.48	0.838
The web-based airline reservation system met the quality standards defined in the project scope.	4.4%	3.3%	4.4%	25.6%	62.2%	4.38	1.034
The system's performance (e.g., speed, reliability) met the expected quality levels.	2.2%	2.2%	8.9%	27.8%	58.9%	4.39	0.908
The design and user interface of the system were well-received by users.	5.6%	5.6%	6.7%	24.4%	57.8%	4.23	1.152
The outputs of the project were regularly reviewed for quality during the development process.	3.3%	6.7%	7.8%	31.1%	51.1%	4.20	1.062
The web-based airline reservation system was developed within the approved budget.	8.9%	5.6%	4.4%	24.4%	56.7%	4.14	1.277
Any changes to the budget were justified and properly communicated to stakeholders.	3.3%	5.6%	7.8%	21.1%	62.2%	4.33	1.060
The budget was regularly monitored and adjusted if necessary to avoid overspending.	2.2%	1.1%	4.4%	42.2%	50.0%	4.37	0.814
The project team has adhered to the financial constraints set at the outset.	1.1%	2.2%	3.3%	35.6%	57.8%	4.47	0.767
Composite mean						4.32	

Note. $N = 90$. *SD* = strongly disagree; *D* = disagree; *NS* = not sure; *A* = agree; *SA* = strongly agree; *Std. Dev.* = standard deviation. *Source:* Primary data (2026).

Table 3 presents respondents' views on project implementation, showing a generally positive assessment with a composite mean of 4.32. The system was largely delivered on time, milestones were achieved, and obstacles were proactively addressed, with the latter recording a mean of 4.48. Quality standards and system performance were also positively rated, although user-interface perceptions varied somewhat. Financial management was

generally effective, with regular budget monitoring and adherence to financial constraints strongly supported. However, development within the approved budget recorded the lowest mean of 4.14, indicating some budgetary challenges. In fact, implementation demonstrated effective delivery, quality assurance, responsiveness, and financial governance.

4.3 Correlation Analysis

Table 4 presents the Pearson correlation between situation analysis and project implementation of the web-based airline reservation system at Topix Agency Limited.

Table 4: *Correlation Between Situation Analysis and Project Implementation*

Variable	Project implementation
Situation analysis	.670**

** $p < .01$ (two-tailed).

Situation analysis had a strong, positive, and statistically significant correlation with project implementation ($r = .670, p < .01$), indicating that higher levels of situation analysis were associated with better implementation outcomes.

4.4 Regression Analysis

Table 5 presents the regression of project implementation on situation analysis, with project formulation, project planning, and monitoring and evaluation entered as control variables. The model was statistically significant, $F(4, 85) = 27.658, p < .001$, and explained 56.6% of the variation in implementation ($R^2 = .566$, adjusted $R^2 = .545$). Situation analysis had a positive and statistically significant effect on project implementation ($\beta = .658, t = 8.889, p < .001$).

Table 5: *Regression of Project Implementation on Situation Analysis*

Variable	<i>B</i>	<i>SE B</i>	β	<i>t</i>	<i>p</i>
(Constant)	-1.804	0.707		-2.553	.012
Situation analysis	0.743	0.084	.658	8.889	< .001

The model also included project formulation, project planning, and monitoring and evaluation as control variables. $R = .752, R^2 = .566$, adjusted $R^2 = .545$. *B* = unstandardized coefficient; *SE B* = standard error of *B*; β = standardized coefficient.

The unstandardized coefficient indicates that a one-unit improvement in situation analysis was associated with a 0.743-unit increase in project implementation, holding the other project design practices constant. Thus, strengthening situation analysis would contribute substantially to improving implementation of the web-based airline reservation system at Topix Agency Limited.

4.5 Responses from Interview Guide

Interview findings showed that situation analysis was considered important in assessing ICT infrastructure, staff competencies, organizational readiness, and customer needs. However, time constraints sometimes limited its depth.

4.6 Discussion of Findings

This section discusses the findings of the study in relation to the study objective. The discussion compares the findings with previous empirical studies and explains their implications for implementation of the web-based airline reservation system at Topix Agency Limited.

The objective of the study was to examine the effect of situation analysis on implementation of the web-based airline reservation system at Topix Agency Limited. The findings established that situation analysis had a strong

positive and statistically significant effect on project implementation ($\beta = .658, t = 8.889, p < .001$). The correlation analysis also showed a strong positive relationship between situation analysis and implementation ($r = .670, p < .01$). This indicates that assessing organizational problems, technical capacity, stakeholder interests, user requirements, and the operational environment before system development substantially contributed to successful implementation.

The finding agrees with Oluocho and Were (2022), who emphasized that systematic assessment of organizational conditions and user requirements improves the alignment of information systems with operational needs. Similarly, Chisanti and Mtebe (2021) found that understanding institutional readiness and technological requirements strengthened implementation of ICT-based interventions. The present finding also supports Project Management Institute (2021), which emphasizes contextual assessment as an important basis for identifying risks, requirements, stakeholders, and implementation constraints. The strong coefficient observed in the present study suggests that, in the airline reservation environment, understanding the operational context was particularly important because system performance depended on accurate knowledge of customer needs, technological infrastructure, staff capabilities, and business processes.

The finding further supports the interview evidence, where respondents reported that assessments of ICT infrastructure, staff competencies, organizational readiness, and customer requirements influenced system specifications. Therefore, situation analysis was not merely a preliminary administrative exercise but a substantive project design practice that shaped implementation decisions. The study consequently established that inadequate situation analysis could result in mismatched system requirements and implementation difficulties.

5. Conclusion and Recommendations

5.1 Conclusion

The study concludes that situation analysis had a strong and significant positive effect on implementation of the web-based airline reservation system at Topix Agency Limited ($\beta = .658$, $p < .001$). Assessing organizational needs, ICT readiness, stakeholder expectations, and user requirements helped align the system with operational realities.

5.2 Recommendation

Based on the study findings and concluding remarks, the study recommends that Topix Agency Limited should institutionalize comprehensive situation analysis, covering stakeholder analysis, problem analysis, and needs assessment, and allow sufficient time for it. The agency should also establish an ICT Project Governance Policy requiring situation analysis before and throughout technology project implementation.

5.3 Suggestions for Further Research

Future studies should examine system sustainability and scalability, compare multiple travel agencies, investigate post-implementation user experiences, and assess how leadership and organizational culture influence ICT project implementation.

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