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Analysis of the Efficiency and Performance Effectiveness of Srikandi Application Using the UTAUT Model and Delone & Mclean

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Abstract

The development of information technology has encouraged the government to carry out digital transformation in administrative governance, one of which is through the implementation of the SRIKANDI Application (Integrated Dynamic Archive Information System). This application is designed to support the management of electronic archives and correspondence integrated across government agencies. This study aims to analyze the efficiency and effectiveness of the SRIKANDI Application in supporting government administration, focusing on service speed, documentation accuracy, and resource efficiency. The method used in this study is a mixed methods approach with a sequential explanatory design. Quantitative data were collected by distributing questionnaires to employees who used the application to assess perceptions of efficiency and effectiveness. Furthermore, qualitative data were obtained through in-depth interviews and document analysis to delve into the quantitative findings and explore contextual factors that influence application implementation. Data analysis is carried out in stages, starting with descriptive and inferential statistical analyses for quantitative data and with thematic analysis for qualitative data. This research is expected to contribute to the development of an electronic government system and serve as a reference for evaluation and policymaking related to bureaucratic digitalization. In addition, the results of this study are also expected to strengthen the literature on the effectiveness of government information systems and provide an empirical picture of the practice of implementing the SRIKANDI Application in government agencies.

Keywords: *Archival Information Systems, SRIKANDI, E-Government, UTAUT, Delone & Mclean.*

1. Introduction

The dynamics of information and communication technology development have driven transformation across various aspects of government administration, including document and archive management. The Electronic-Based Government System (SPBE), as mandated in Presidential Regulation Number 95 of 2018, is an important instrument in creating efficient, effective, transparent, and accountable governance. Dynamic archives, as records of sustainable organizational activities, play a strategic role in supporting decision-making and ensuring evidence of agency performance accountability. To encourage the digitization of archives, the government, through the Ministry of Communication and Information, in collaboration with the National Archives of the Republic of Indonesia (ANRI), developed the Integrated Dynamic Archives Information System (SRIKANDI), launched in 2020. This system is designed to support interoperability between agencies. However, during implementation, there are still obstacles, including limited human resources, inadequate technological infrastructure, and instability in internet networks and application servers.

This problem is becoming increasingly complex due to the digital readiness gap between central and regional governments. The results of ANRI's evaluation show that the Lhokseumawe City Government will only start implementing SRIKANDI in August 2024, and that only about 18% of regional apparatus organizations have implemented the application. This condition contributes to inefficiency in public services, the accumulation of physical archives, and difficulties in finding the information needed. Previous studies have also shown mixed results: the implementation of SRIKANDI has met e-government indicators for catalogue and transactions, but has not fully supported cross-agency integration. Other research confirms that limited access, infrastructure constraints, and the absence of application notifications remain obstacles that reduce the system's effectiveness.

The research gap stems from the limited quantitative research on the factors affecting the acceptance and use of SRIKANDI among government employees. Most research focuses only on technical implementation, while aspects of employee characteristics, perceptions

of ease of use, and the condition of supporting facilities have not been widely studied. Previous research has found that a lack of training and socialization is also an obstacle to the effectiveness of application use, but there has been no empirical analysis that quantitatively measures the program's correlation with the level of acceptance and utilization of the system in the government work environment.
In that context, the modified Unified Theory of Acceptance and Use of Technology (UTAUT) and the DeLone & McLean Information Systems Success Model can serve as an analytical framework. UTAUT emphasizes performance expectations, business expectations, social influence, and facilitation conditions, while the DeLone & McLean model assesses system success based on information quality, system quality, service quality, usability, user satisfaction, and net benefits. This study aims to analyze the influence of these factors on interest in and Behaviour regarding the use of the SRIKANDI application, by adding standardization constructs and solutions as a research novelty. The results are expected to make a theoretical contribution to the development of technology adoption models in the public sector, as well as practical recommendations to strengthen the implementation of SRIKANDI in the context of national bureaucratic reform.

2. Literature Review

2.1. Basic Concepts of Efficiency and Effectiveness

2.1.1. Efficiency

Efficiency in organizational management is defined as the optimal ratio of inputs to outputs, reflecting the extent to which an organization's resources (such as time, effort, and cost) are used economically to achieve the desired outcome [1]. In practice, efficiency is achieved when an organization can carry out its operations with a low-cost structure without sacrificing the quality of the services or products produced, emphasizing that good efficiency reflects the planning of budgets and the execution of targeted activities, as well as the use of technologies and procedures that support fast and precise work processes [2]. It further states that operational efficiency is a key element in the development of competency-based management, which integrates human resources, technology, and work structures to produce sustainable efficiency [3].

2.1.2. Effectiveness

Effectiveness is the organization's ability to complete programs or activities with a high level of achievement toward the target outcome. Effectiveness refers to the organization's success in meeting the needs of internal and external stakeholders through the implementation of targeted managerial functions [4][5]. Effectiveness is greatly influenced by the clarity of the organization's vision and mission, the organizational structure that supports cross-functional collaboration, and the ability to respond to environmental changes. This shows that effectiveness comprises elements of the quality of results, the relevance of achievements, and suitability to market or beneficiary needs [6]. In the public sector, effectiveness is the main indicator of successful policy implementation. The system allows organizations to evaluate the suitability of the resulting outputs to strategic objectives and to establish more accurate corrective measures [7][8].

2.1.3. Conceptual Synthesis of Efficiency and Effectiveness

These two concepts are often considered complementary in managerial practice. An organization can be considered efficient but not necessarily effective if its output does not align with strategic needs or goals [9]. On the contrary, an organization can be effective yet inefficient if the goals are achieved at the expense of wasted resources. As explained by Lase et al. (2025), in the context of strategic management, the integration of efficiency and effectiveness serves as a benchmark for long-term organizational success. Both can be measured simultaneously using the Balanced Scorecard, which assesses financial and non-financial aspects from various perspectives [1]. The concepts of efficiency and effectiveness also have an operational dimension that can be used as variables in quantitative and qualitative analysis.

2.2. Archives Management Information System

The Archives Management Information System (SIMK) is a digital technology designed to manage archives systematically and efficiently, including the processes of creating, managing, storing, tracking, and destroying archives [10]. In the context of modern organizations, SIMK plays an important role in the digital transformation of public and private administration. [11]. In general, the implementation of SIMK is driven by the need to overcome the complexity of manual archive management, which is often ineffective and prone to data loss. With the digitization of archives, institutions can not only save physical storage space but also accelerate decision-making processes using historical data [12][13].

2.3. SRIKANDI Application

The SRIKANDI application (Integrated Dynamic Archival Information System) is one of the national initiatives to support electronic governance (e-Government), especially in the field of archive management [14]. This application was developed as a general application in the field of archives by the collaboration of several state agencies, namely the National Archives of the Republic of Indonesia (ANRI), the Ministry of Communication and Informatics, BSSN, and the Ministry of PANRB [15]. The benefits of implementing the SRIKANDI application lie not only in administrative efficiency but also include strategic aspects and national information security [16][17].

2.4. Theoretical Framework and Analytical Model

2.4.1. Model UTAUT (Unified Theory of Acceptance and Use of Technology)

The UTAUT model is a framework that describes the factors influencing individuals' acceptance and use of technology [18]. The UTAUT model has become the basis for studying various technologies in both organizational and non-organizational contexts. Four main constructs are identified as the most important factors influencing acceptance and use behaviour: performance expectations, business expectations, social influence, and facilitating conditions [19]. In addition to these four variables, there are also moderator variables such as gender, age, free will, and experience [20]. Previous research showed that the UTAUT model successfully identified the positive, significant influence of performance and effort expectations on M-health acceptance among elderly users in Bangladesh. Other studies also show that UTAUT is suitable for understanding the underlying factors driving M-health acceptance.

2.4.2. Delone and McLean models

The DeLone and McLean model is a conceptual framework developed by William H. DeLone and Ephraim R. McLean to evaluate the success of information systems [21]. This model identifies six key dimensions of information system success: information Quality, System Quality, Service Quality, satisfaction, user satisfaction Net Benefits. The application of this model has proven effective in measuring the performance of academic information systems, as it considers both technical aspects and user perceptions. The quality dimension measures the quality of the system, services, and information generated, while the impact dimension reflects the system's tangible contribution to organizational efficiency and user work effectiveness. In the context of public and educational organizations, the application of this model makes it easier to measure the added value of digital systems, such as SIM or e-archives, against the institution's strategic goals [22].

2.4.3. System Evaluation Framework

The information system evaluation framework not only focuses on qualitative outcomes, but also integrates the concepts of efficiency and effectiveness quantitatively [23]. Efficiency in information systems refers to the system's ability to manage resources (such as processing time, operational costs, and labor) optimally. Meanwhile, effectiveness measures the extent to which a system achieves strategic goals, such as improved service, greater data accuracy, or increased user productivity.

The combination of the UTAUT & Delone & McLean approach with efficiency and effectiveness indicators provides a comprehensive framework, as it considers not only user perceptions but also real results measured through performance indicators [24]. This model also supports evidence-based policy, in which the evaluation results inform further system development and policymaking.

2.4.4. Synthesis of Theoretical Frameworks and Analytical Models

The Delone and McLean model serves as a key conceptual foundation in information systems research because it includes both technical and human-oriented dimensions. The use of quantitative indicators, such as system usage ratio, archive search time, and user satisfaction index, enables evidence-based analysis. This combined framework is suitable for evaluating digital archiving systems in government and educational environments, as it addresses the main challenges posed by big data management and resource limitations. Thus, integrating these two approaches not only strengthens the validity of the analysis results but also increases the relevance of policy recommendations based on objective information system evaluation [25].

3. Methods

3.1. Research Approach

This study uses a combination approach of quantitative and qualitative methods (mixed methods) with an explanatory sequential model, where the collection and analysis of quantitative data is carried out first, then continued with the collection and analysis of qualitative data. This approach was chosen to obtain a comprehensive understanding of the effectiveness of the Integrated Dynamic Archives Information System (SRIKANDI) in supporting government administration governance.

The quantitative method in this study was used to measure the extent of the influence of independent variables, namely performance expectations, business expectations, social factors, facilitation conditions, and Standardization, on the interest and Behaviour of using the SRIKANDI application by government employees. Meanwhile, the qualitative method is used to delve deeper into the obstacles encountered in implementing the SRIKANDI application and to explore potential solutions.

3.2. Research Location and Time

This research was carried out at the Lhokseumawe City Government agency, which has implemented the SRIKANDI Application (Integrated Dynamic Archival Information System) as part of efforts to digitize government administrative governance. The research location was determined purposively based on active involvement in the use of the SRIKANDI Application, particularly in correspondence activities, dynamic archive management, and internal archive reporting and supervision. The research is planned to last for three months, starting from March 2025 to June 2025. This period covers all stages of research activities, including the preparation of instruments, primary and secondary data collection, the implementation of field observations and in-depth interviews, data analysis, and the preparation of the research report results.

3.3. Data Collection Techniques

Data collection in this study was carried out using three main techniques systematically integrated to obtain comprehensive information on the effectiveness of the SRIKANDI application. A data collection process that integrates quantitative and qualitative approaches in an integrative manner. The research begins with a preparatory stage that includes formulating a research design and constructing instruments, such as questionnaires, for quantitative data collection. Before use, quantitative instruments are tested for validity and reliability to ensure measurement reliability, and if necessary, instrument refinement is carried out. After that, quantitative data were collected from respondents and analyzed to identify initial patterns that served as the basis for further qualitative exploration.

3.3.1. Questionnaire

A structured questionnaire instrument was applied as a primary quantitative data collection method to measure user perception of the effectiveness of the SRIKANDI application based on the conceptual framework of the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which has been modified with the Delone & Mclean approach according to the research context. Variable measurements were carried out using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree).

3.3.2. Interview

Semi-structured interviews were conducted to obtain substantive, contextually rich qualitative data on user experience in implementing the SRIKANDI application. Purposive sampling techniques are used to identify key informants who represent various perspectives and levels within the organization.

3.3.3. Documentation

The third data collection technique implemented is documentation analysis, which aims to evaluate objective data regarding the utilization of the SRIKANDI application. Documentation analysis is conducted using content analysis to identify patterns, trends, and quantitative and qualitative indicators that enrich and validate information obtained from questionnaires and in-depth interviews.

3.4. Technical Data Analysis

This study implements a parallel convergent data analysis strategy, which is an approach in mixed methods that integrates quantitative and qualitative data simultaneously and equally. This strategy allows the analysis process to be carried out in parallel yet complementary, so that the two can be systematically compared, contrasted, and synthesized. Through this cross-approach integration, the research seeks to produce a more complete and in-depth understanding of the phenomenon under study, namely the effectiveness of implementing the SRIKANDI Application in government administration governance. The process of collecting and analyzing data using a mixed-methods approach, combining quantitative and qualitative techniques in a structured, integrative manner. The process starts at the initial stage, with the preparation and implementation of data collection, which then branches into two main paths: the quantitative and qualitative data paths. Each pathway follows a different analytical procedure according to its methodological approach, yet remains directed towards integrating results to strengthen the validity and meaning of the research findings.

3.4.1. Quantitative Data Analysis

Quantitative data analysis was carried out through a series of structured, sequential statistical procedures using the Statistical Package for the Social Sciences (SPSS) version 26 and AMOS version 24. The analysis techniques implemented include:

1. Descriptive Statistical Analysis
2. Analysis of Instrument Validity and Reliability
3. Structural Equation Modelling (SEM) Analysis
4. Inferential Statistical Analysis
5. Multi-Group Analysis

3.4.2. Qualitative Data Analysis

Qualitative data analysis is operationalized through a systematic thematic approach that enables the identification of meaningful patterns in textual data from interviews and documentation. The analysis process is carried out with the help of NVivo 14 software through the following stages:

1. Data Transcription and Organisation
2. Open Coding
3. Axial Coding
4. Constant Comparative Analysis

3.4.3. Integration of Quantitative-Qualitative Analysis

The integration of quantitative and qualitative analysis is implemented through a methodological triangulation approach that allows cross-validation of findings from both types of analysis. The integration process is carried out through the following stages:

1. Meta-inference
2. Contradiction Explanations
3. Complementary Elaboration
4. Formulation of Practical Implications

4. Result and Discussion

4.1. General Description of Respondents

4.1.1. Demographic Characteristics of Respondents

This study involved 80 employees of the Lhokseumawe City Government as respondents, selected through purposive sampling based on their active involvement in using the SRIKANDI application, with data collected via online questionnaires across various OPDs. In terms of demographics, 70% of respondents were women (56 people) and 30% men (24 people), reflecting the composition of employees in the administrative and archival units. By age, the majority are in the 35–44 years (45%) group, followed by 25–34 years (35%) and 45–54 years (20%), indicating the dominance of users in the productive age group with adequate work experience.

4.1.2. Characteristics of Using the SRIKANDI Application

Many respondents to this study were Implementers/Staff (62.5%), followed by Echelon IV/Functional (25%) and non-ASN (12.5%), which came from 10 OPDs, with the dominance of the Library and Archives Service, Regional Secretariat, and Population and Civil Registration Service. In terms of experience, 60% of respondents have used SRIKANDI for more than one year, 25% for 6–12 months, and 15% for less than three months. Based on roles, 35% act as Agency Admins, 30% as Work Unit Admins, 20% as Administration/Secretaries, and 15% as Regular Users, reflecting the variation in authority and responsibilities within the digital archiving system.

4.2. Descriptive Statistical Analysis

Descriptive statistical analysis was used to describe the data using mean, median, standard deviation, minimum, and maximum, and to interpret respondents' responses on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

1. Description of Performance Expectancy (PE) Variables
   The Performance Expectancy variable had a mean of 3.82 and a standard deviation of 0.76, indicating a positive perception of the SRIKANDI application's contribution to improving dynamic archive management performance.

2. Description of Variable Effort Expectancy (EE)
   The Effort Expectancy variable has a mean of 3.67 and a standard deviation of 0.83, indicating a perception of good ease of use, with the highest score on ease of understanding the application menu (mean 3.89), confirming that the SRIKANDI user interface is considered intuitive by users.
3. Description of Social Influence (SI) Variables
   The Social Influence variable has a mean of 3.74 and a standard deviation of 0.79, reflecting strong social support for application adoption, with the highest indicator of boss encouragement (mean 3.95), which confirms the role of leadership in the implementation of SRIKANDI.
4. Description of Facilitating Conditions (FC) Variables
   The Facilitating Conditions variable has a mean of 3.59 and a standard deviation of 0.91, indicating that the facilitation conditions are quite adequate but still need improvement, with the highest indicators being device availability and internet connection (mean 3.78).
5. Description of Variable Standardization (STD)
   The standardization variable had a mean of 3.71 and a standard deviation of 0.84, indicating a good level of procedural uniformity, with the highest indicator of consistency in the implementation of filing procedures and document management (mean 3.87).
6. Description of System Quality (SQ) Variables
   The System Quality variable has a mean of 3.45 and a standard deviation of 0.96, indicating moderate system quality and still needing improvement, with the highest indicator being ease of access to guidance or technical assistance (mean 3.65).
7. Description of Information Quality (IQ) Variables
   The Information Quality variable has a mean of 3.76 and a standard deviation of 0.81, indicating good information quality and alignment with user needs, with the highest indicator of completeness and relevance of the information presented by the application (mean 3.92).
8. Description of Service Quality (ServQ) Variables
   The Service Quality variable has a mean value of 3.52 with a standard deviation of 0.88, indicating that the quality of service is quite adequate but still needs to be optimized, with the highest indicator of ease of access to technical assistance (mean 3.74).
9. Description of Variable Behavioural Intention (BI)
   The Behavioural Intention variable had a mean of 3.89 and a standard deviation of 0.72, indicating strong use intentions and the highest level of continuous commitment to the application for administrative work (mean 4.12).
10. Description of Use Behaviour (UB) Variables
    The Use Behaviour variable has a mean of 3.73 and a standard deviation of 0.85, indicating a fairly consistent level of usage, with the highest level of application utilization in almost all administrative work (mean 3.91).
11. Description of User Satisfaction (US) Variables
    The User Satisfaction variable has a mean of 3.68 and a standard deviation of 0.79, indicating a fairly good level of satisfaction but still room for improvement, with the highest satisfaction level for using the application for daily tasks (mean 3.85).
12. Description of Net Benefits Variable - Efficiency (NB_EF)
    The Net Benefits Efficiency variable has a mean of 3.79 and a standard deviation of 0.77, indicating a significant perception of efficiency benefits, with the highest indicator of workflow acceleration previously slow or hampered (mean 3.96).
13. Description of Net Benefits Variable - Effectiveness (NB_EK)
    The Net Benefits Effectiveness variable had a mean of 3.71 and a standard deviation of 0.82, reflecting a positive perception of improving work quality and accuracy, with the highest indicator of improvement in work results accuracy since the application's use (mean 3.88).

4.3. Test of Instrument Validity and Reliability

Validity and reliability tests are conducted before the main analysis to ensure the research instrument accurately, consistently, and reliably measures the constructs.

As for the validity test:

1. Construct Validity Test
   The construct validity test used criteria of factor loadings≥ 0.5 and AVEs≥ 0.5, as well as a goodness-of-fit evaluation, and the results were deemed valid, with the lowest factor loading of 0.624 on the PE3 indicator.
2. Evaluate the Goodness of Fit
   The results of the goodness-of-fit test, with the criteria of Chi-square/df ≤ 3.0, GFI ≥ 0.90, AGFI ≥ 0.80, CFI ≥ 0.90, and RMSEA ≤ 0.08, indicated that the measurement model was consistent with the empirical data and met the validity criteria for the construct.

There is a reliability test:

1. Internal Reliability Test
   Reliability tests using Cronbach's Alpha and Composite Reliability (CR) criteria (≥ 0.70) indicated that all variables had excellent reliability, with the lowest Cronbach's Alpha of 0.798 for the System Quality variable.
2. Interpretation of Reliability Results
   The results of the reliability test showed that all variables had excellent internal consistency, with Cronbach's Alpha values of 0.798–0.887; Behavioural Intention had the highest reliability (α = 0.887) and System Quality the lowest (α = 0.798), but both were still acceptable.

Table 1. Instrument Reliability Test Results

Variable	Cronbach's Alpha	Composite Reliability	Information
Performance Expectancy (PE)	0,856	0,875	Very Reliable
Effort Expectancy (EE)	0,823	0,845	Very Reliable
Social Influence (SI)	0,814	0,832	Very Reliable
Facilitating Conditions (FC)	0,831	0,847	Very Reliable
Standardization (STD)	0,842	0,859	Very Reliable

System Quality (SQ)	0,798	0,819	Reliable
Information Quality (IQ)	0,869	0,884	Very Reliable
Service Quality (ServQ)	0,826	0,841	Very Reliable
Behavioral Intention (BI)	0,887	0,903	Very Reliable
Use Behavior (UB)	0,834	0,851	Very Reliable
User Satisfaction (US)	0,851	0,867	Very Reliable
Net Benefits Efisiensi (NB_EF)	0,863	0,879	Very Reliable
Net Benefits Efektivitas (NB_EK)	0,858	0,873	Very Reliable

4.4. Structural Model Analysis (SEM)

Structural model analysis was carried out using Structural Equation Modelling (SEM) in AMOS 24, with the Maximum Likelihood Estimation approach, to test the causal relationships among latent variables across the measurement and structural model evaluation stages.

4.4.1. Evaluation of the Measurement Model

1. Data Normality Test
   The normality test showed that the data met the assumptions, as indicated by the multivariate kurtosis critical ratio of 1.847 ($\leq \pm 2.58$) and the Kolmogorov-Smirnov significance of> 0.05.
2. Evaluating the Goodness of Fit Measurement Model
   The relationship between Behavioural Intention and Use Behaviour also showed a strong path coefficient ($\beta = 0.412$, $p < 0.001$), confirming the importance of use intent in predicting actual use behaviour.
3. R-square value
   The interpretation of the R-square value follows Cohen's (1988) criteria, and the results of the analysis show that the explanatory power of the model varies across endogenous variables, with the highest value for Net Benefits Efficiency.

Table 2. Data Normality Test Results

Variable	Kolmogorov–Smirnov	Sig.	Skewness	Kurtosis	Information
PE	0.089	0,098611	-0.234	0,108333	Normal
EE	0.076	0,1375	-0.189	-0.098	Normal
SI	0.081	0,115972	-0.211	0.089	Normal
FC	0.094	0,086111	-0.267	0,093056	Normal
STD	0.087	0,104861	-0.198	0.076	Normal
SQ	0.092	0,089583	-0.245	0,077778	Normal
IQ	0.078	0,129167	-0.223	0.098	Normal
ServQ	0.085	0,109722	-0.201	0.087	Normal
BI	0.071	0,149306	-0.189	0.065	Normal
UB	0.088	0,100694	-0.234	0,070139	Normal
US	0.083	0,1125	-0.212	0.089	Normal
NB_EF	0.079	0,124306	-0.198	0.076	Normal
NB_EK	0.086	0,106944	-0.215	0.093	Normal
Multivariate	-	-	-	1.847	Normal

4.4.2. Structural Model Evaluation

1. Path Coefficient Result
   The significance of the path coefficient is evaluated using the critical ratio (CR), with $|CR| \geq 1.96$ at the 5% significance level, indicating that the relationship is statistically significant.
2. The Significance of the Relationship Between Variables
   The results of the goodness-of-fit evaluation based on SEM criteria indicate that the measurement model is consistent with the empirical data, and the construct validity is sufficient to proceed to the structural model analysis.
3. Convergent and Discriminant Validity

The test results showed that the entire construct met the criteria for convergent validity (factor loadings$\geq$ 0.5; AVE $\geq$ 0.5; CR $\geq$ 0.7) and discriminant validity, where the square root of each construct's AVE is greater than the highest correlation between constructs.

4.5. Hypothesis Testing

Hypothesis testing was carried out using SEM with the Maximum Likelihood Estimation technique, with CR criteria $\geq \pm 1.96$ and p-values ≤ 0.05 at a 5% significance level, providing a comprehensive overview of the factors influencing the acceptance, use, and benefits of the SRIKANDI application in the digital transformation of government administration.

4.5.1. Hypothesis Testing

1. The Effect of Performance Expectancy on Behavioural Intention (H1)
   The first hypothesis (H1) states that Performance Expectancy has a positive effect on the Behavioural Intention to use the SRIKANDI application. The results of the SEM analysis showed a path coefficient of 0.278, a critical ratio of 3.124, and a p-value of 0.002, indicating a positive, statistically significant relationship.

2. The Effect of Performance Expectancy on Behavioural Intention (H1)
   The second hypothesis (H2) tested the effect of Effort Expectancy on Behavioural Intention to use the SRIKANDI application. The analysis yielded a path coefficient of 0.245, a critical ratio of 2.606, and a p-value of 0.009, indicating a positive, significant relationship.
3. The Influence of Social Influence on Behavioural Intention (H3)
   The third hypothesis (H3) evaluates the influence of Social Influence on Behavioural Intention in the context of using the SRIKANDI application. The test results showed a path coefficient of 0.189, a critical ratio of 2.172, and a p-value of 0.030, indicating a positive and significant relationship at the 5% level.
4. The Effect of Standardisation on Behavioural Intention (H4)
   The fourth hypothesis (H4) tests the effect of Standardization on behavioural intention to use the SRIKANDI application. The analysis yielded a path coefficient of 0.156, a critical ratio of 1.696, and a p-value of 0.090, indicating a positive but not statistically significant relationship at the 5% level.
5. The Effect of Facilitating Conditions on Behavioural Intention (H5)
   The fifth hypothesis (H5) evaluates the influence of Facilitating Conditions on the Behavioural Intention to use the SRIKANDI application. The analysis showed a path coefficient of 0.198, a critical ratio of 2.250, and a p-value of 0.024, indicating a positive, significant relationship.
6. The Effect of Behavioural Intention on Use Behaviour (H6)
   The sixth hypothesis (H6) tests the influence of Behavioural Intention on the Use Behaviour of the SRIKANDI application. The analysis yielded a path coefficient of 0.412, a critical ratio of 5.421, and a p-value of < 0.001, indicating a positive, very significant relationship.
7. The Effect of Facilitating Conditions on Use Behaviour (H7)
   The seventh hypothesis (H7) examines the direct effect of Facilitating Conditions on the Use Behaviour of the SRIKANDI application. The test results showed a path coefficient of 0.234, a critical ratio of 2.854, and a p-value of 0.004, indicating a positive and significant relationship.

Table 3. Summary of Hypothesis Testing Results

Hypothesis	Path	Path Coefficient	C.R.	P-value	Decision	Information
H1	PE → BI	0,193056	3.124	0.002	Accepted	Significant
H2	EE → BI	0,170139	2.606	0.009	Accepted	Significant
H3	SI → BI	0,13125	2.172	0.030	Accepted	Significant
H4	STD → BI	0,108333	1.696	0.090	Rejected	Not Significant
H5	FC → BI	0,1375	2.250	0.024	Accepted	Significant
H6	BI → UB	0,286111	5.421	< 0.001	Accepted	Very Significant
H7	FC → UB	0,1625	2.854	0.004	Accepted	Significant
H8	UB → US	0,206944	3.506	< 0.001	Accepted	Very Significant
H9	SQ → US	0,185417	3.000	0.003	Accepted	Significant
H10	IQ → US	0,216667	3.429	< 0.001	Accepted	Very Significant
H11	ServQ → US	0,170139	2.816	0.005	Accepted	Significant
H12	US → NB_EF	0,440278	8.128	< 0.001	Accepted	Very Significant
H13	US → NB_EK	0,415278	7.383	< 0.001	Accepted	Very Significant

4.5.2. Results of Testing the DeLone & McLean Model Hypothesis

1. The Effect of Use Behaviour on User Satisfaction (H8)
   The eighth hypothesis (H8) tests the influence of Use Behaviour on User Satisfaction with the SRIKANDI application. The analysis yielded a path coefficient of 0.298, a critical ratio of 3.506, and a p-value of < 0.001, indicating a positive, very significant relationship.
2. The Influence of System Quality on User Satisfaction (H9)
   The ninth hypothesis (H9) examines the influence of System Quality on User Satisfaction with the SRIKANDI application. The test results showed a path coefficient of 0.267, a critical ratio of 3,000, and a p-value of 0.003, indicating a positive and significant relationship.
3. The Effect of Information Quality on User Satisfaction (H10)
   The tenth hypothesis (H10) tests the influence of Information Quality on the User Satisfaction of the SRIKANDI application. The analysis yielded a path coefficient of 0.312, a critical ratio of 3.429, and a p-value of < 0.001, indicating a positive, very significant relationship.
4. The Effect of Service Quality on User Satisfaction (H11)
   The eleventh hypothesis (H11) examines the effect of Service Quality on User Satisfaction with the SRIKANDI application. The test results showed a path coefficient of 0.245, a critical ratio of 2.816, and a p-value of 0.005, indicating a positive, significant relationship.
5. The Effect of User Satisfaction on Net Benefits Efficiency (H12)
   The twelfth hypothesis (H12) tests the effect of User Satisfaction on the Net Benefits of the SRIKANDI application efficiency. The analysis yielded a path coefficient of 0.634, a critical ratio of 8.128, and a p-value of < 0.001, indicating a positive, very significant relationship with a large effect size.
6. The Effect of User Satisfaction on Net Benefits Effectiveness (H13)
   The thirteenth hypothesis (H13) evaluates the effect of User Satisfaction on the Net Benefits of the effectiveness of the SRIKANDI application. The test results showed a coefficient of 0.598, a critical ratio of 7.383, and a p-value of < 0.001, indicating a positive, very significant relationship.

4.6. Qualitative Data Analysis

4.6.1. Qualitative Data Analysis

The research informants consisted of 12 employees of the Lhokseumawe City Government, with a variety of positions, work units, and experience with the SRIKANDI application. The composition includes 4 Echelon IV/Functional officials, 6 executive staff, and 2 non-

ASN from eight different OPDs. In terms of experience, eight people have used the app for more than 1 year, 3 for 6–12 months, and 1 for less than 6 months, providing a comprehensive overview of the stages of system adoption.

4.6.2. User Perception of SRIKANDI Application Efficiency

1. Savings in Time and Administration Processes
   The results of the interviews revealed that many informants experienced a significant increase in efficiency, including time savings and simplified administrative processes, after using the SRIKANDI application.
2. Reduced Paper Use and Operating Costs
   These findings show that the efficiency benefits of the SRIKANDI application extend beyond operations and also deliver value in terms of environmental sustainability and the optimization of organizational resources.
3. Increased Work Productivity
   This increase in productivity indicates that the efficiency generated by the SRIKANDI application is not only quantitative, in terms of time and cost, but also qualitative, improving the capacity and quality of team member work.

4.6.3. User Perception of the Effectiveness of the SRIKANDI Application

1. Improved Accuracy and Quality of Documentation
   The results of the interviews show that the SRIKANDI application significantly improves the accuracy and quality of documentation in the government administration process.
2. Improved Coordination and Collaboration Between Units
   The informant identified a significant increase in coordination and collaboration between work units as one manifestation of the effectiveness of the SRIKANDI application.
3. Improving the Quality of Public Services
   The effectiveness of the SRIKANDI application not only enhances the organization's internal efficiency but also improves the quality of public services, in line with the government's digital transformation goals.

4.6.4. Improvement Recommendations from Users

1. Improving Technical Quality and User Experience
   The importance of a user-centred design approach in application development to improve usability and accessibility for all users.
2. Strengthening Training and Mentoring Programs
   Strengthening training and mentoring programs as key success factors in optimizing the implementation of the SRIKANDI application—the importance of a multi-modal learning approach and a sustainable support system in supporting effective technology adoption.
3. Increased Integration and Standardisation
   Increasing system integration and process standardization to optimize the benefits of the SRIKANDI application so that users can contribute to the development of the SRIKANDI application as part of an integrated and intelligent government digital ecosystem.

Table 4. 10 Interview Informant Profiles

Code	Job	Work Unit	Experience	Gender	Age
INF-01	Echelon IV	Library and Archives Service	> 1 Year	Girl	42
INF-02	Executor	Regional Secretariat	> 1 Year	Man	38
INF-03	Executor	Regional Secretariat	6–12 Months	Girl	29
INF-04	Echelon IV	DISKOMINFO	> 1 Year	Girl	45
INF-05	Executor	DISKOMINFO	> 1 Year	Man	33
INF-06	Non-ASN	Library and Archives Service	< 6 Months	Girl	37
INF-07	Executor	BKPSDM	> 1 Year	Girl	36
INF-08	Echelon IV	BKPSDM	6–12 Months	Man	41
INF-09	Executor	MPD	> 1 Year	Girl	31
INF-10	Non-ASN	Library and Archives Service	6–12 Months	Man	24
INF-11	Executor	Library and Archives Service	> 1 Year	Girl	28
INF-12	Echelon IV	Muara Satu District Office	> 1 Year	Man	39

4.7. Integration of Quantitative and Qualitative Analysis Results

4.7.1. Data Triangulation

1. Convergence of Efficiency Findings
   Qualitative findings reinforce these results through informant testimonials that consistently report time savings of up to 70%, drastic reductions in paper usage, and significant increases in work productivity.
2. Convergence of Effectiveness Findings
   These findings confirm that the effectiveness of the SRIKANDI application is not only perceptual but also manifests in daily work practices that users can observe and feel directly.
3. Convergence of Findings of Technology Adoption Factors
   The triangulation results show consistent convergence between the factors influencing technology adoption in the UTAUT model and the empirical experience reflected in the qualitative data.

4.7.2. Confirmation of Quantitative Findings with Qualitative Data

1. Confirmation of Accepted Hypotheses
   The qualitative data strongly confirm the 12 hypotheses accepted in the quantitative analysis, providing context and in-depth explanations of the mechanisms underlying the relationships among variables.
2. Elaboration of Rejected Hypotheses
   This elaboration provides a more nuanced understanding of how Standardization may have an indirect effect through the mediation of other variables, such as system quality or information quality.
3. Validating Path Coefficients and Relationship Strengths
   Qualitative data validate the relative strength of the relationship between variables, as reflected in the SEM analysis's path coefficients. The strongest relationship in the quantitative model, namely User Satisfaction → Net Benefits Efficiency ($\beta = 0.634$), was strongly supported by qualitative data.

4.7.3. Contextual Factors Influencing Implementation

1. Organizational Factors and Work Culture
   Qualitative data indicate a hierarchical work culture in government organisations as a factor influencing technology adoption patterns, with managerial support as an important determinant of successful implementation.
2. Demographic Factors and Digital Literacy
   Data integration revealed that demographic factors, particularly age and digital literacy levels, played a significant moderating role in the relationship in the research model, even though this was not explicitly tested in the quantitative analysis.
3. Infrastructure Factors and Technical Conditions
   These findings emphasize the importance of standardizing IT infrastructure as a prerequisite for the successful and equitable implementation of information systems across the organization. These contextual factors also indicate the need for an adaptive implementation approach and consider the specific conditions of each work unit.

4.8. Discussion

The discussion analysis integrates the results of hypothesis testing, qualitative findings, and data triangulation to provide a comprehensive understanding of the efficiency and effectiveness of the SRIKANDI application performance. Discussions included interpreting results within the theoretical frameworks of UTAUT and DeLone & McLean, analysing contextual factors influencing implementation, and identifying research limitations to consider when generalising the findings.

4.8.1. Interpretation of UTAUT Model Research Results

1. The Role of Performance Expectancy in Technology Adoption
   Performance Expectancy had a positive and significant effect on Behavioural Intention ($\beta = 0.278$, $p = 0.002$), thereby confirming the main proposition of UTAUT theory that performance expectancy is a crucial determinant of technology adoption.
2. The Impact of Effort Expectancy on Use Intent
   The positive effect of Effort Expectancy on Behavioural Intention ($\beta = 0.245$, $p = 0.009$) is consistent with the Technology Acceptance Model (TAM), which emphasizes the importance of perceived ease of use in technology adoption.
3. The Influence of Social Influence in the Context of Public Organisations
   The positive influence of Social Influence on Behavioural Intention ($\beta = 0.189$, $p = 0.030$) confirms the relevance of social factors in technological adoption in the organizational environment, especially in the context of hierarchical work cultures such as government agencies
4. The Insignificance of Standardization and Its Implications
   The effect of Standardisation on Behavioural Intention ($\beta = 0.156$, $p = 0.090$) provides interesting insights into differences between individual and organizational motivational factors in technology adoption.
5. The Dual Role of Facilitating Conditions
   The effects of Facilitating Conditions on Behavioural Intention ($\beta = 0.198$, $p = 0.024$) and Use Behaviour ($\beta = 0.234$, $p = 0.004$) confirm their dual role as an enabler of both use intent and actual use behaviour.

4.8.2. Interpretation of the DeLone & McLean Model Research Results

1. The Relationship between Use Behaviour and User Satisfaction
   These findings have important practical implications that user satisfaction improvement strategies should focus on increasing the intensity and quality of use through user engagement and continuous learning programs.
2. Dominance of Information Quality in Forming Satisfaction
   Information Quality is the strongest determinant of User Satisfaction with the SRIKANDI application. These findings align with the research of Gorla et al. (2010), who found that information quality has the largest effect on user satisfaction with organizational information systems.
3. Contribution of System Quality and Service Quality
   Good service quality, especially the responsiveness of technical support, is an important compensation factor when technical problems occur. These findings imply the need for balanced investment in technical infrastructure, data management, and user support services.
4. User Satisfaction as a Crucial Mediator
   User Satisfaction is a mediator between the system's quality and the final benefits the user derives. These findings support the DeLone & McLean model, which emphasizes that user satisfaction is an intermediate outcome that determines perceptions of net benefits.

4.8.3. Efficiency and Effectiveness of the SRIKANDI Application

1. Manifestation of Efficiency in Work Practice
   This multi-dimensional manifestation of efficiency confirms that the SRIKANDI application has achieved its main goal as an enabler of digital transformation in government administration.

2. Dimensions of Effectiveness in Administrative Governance
   The effectiveness of the SRIKANDI application is evidenced by improved output quality, process accuracy, organisational coordination, and service delivery to the community.

4.8.4. Theoretical Implications

1. Contribution to the Development of the UTAUT Model
   This study contributes to the development of the UTAUT model in the context of e-government through several important findings: confirmation of the relevance of the UTAUT's main construct; standardisation has no significant effect on behavioural intention; and the dual effect of facilitating conditions on behavioural intention and use behaviour.
2. Integration of the UTAUT and DeLone & McLean Models
   The integration of the UTAUT and DeLone & McLean models in this study yielded a more comprehensive theoretical framework for evaluating the success of information system implementation.

4.8.5. Practical Implications

1. Recommendations for Policy Makers
   Strategic recommendations for policy makers in optimizing the implementation of the SRIKANDI application, which is based on an evidence-based approach that integrates quantitative and qualitative findings to produce actionable insights for practitioners.
2. Implementation Optimization Strategy
   SRIKANDI's application implementation optimization strategy must adopt a multi-layered approach that encompasses technical, organizational, and individual dimensions.

4.8.6. Research Limitations

1. Methodological Limitations
   Methodological limitations to be considered in interpreting and generalising the findings. First, the use of a cross-sectional design, the research sample to the Lhokseumawe City Government, the use of self-reported measures in questionnaires, the research model does not measure actual performance metrics, and contextual factors
2. Conceptual Limitations
   These conceptual limitations point to the need to develop a more specific theoretical framework for the context of e-government and public sector information systems that consider the multi-stakeholder and multi-objective complexity characteristic of these domains.

5. Conclusion

The test results showed that four factors of UTAUT, namely Performance Expectancy, Effort Expectancy, Facilitating Conditions, and Social Influence, had a significant effect on the acceptance of the SRIKANDI application. At the same time, Standardization was not proven to have an effect. Facilitating Conditions also directly affect usage behaviour, underscoring the importance of infrastructure and technical support. DeLone & McLean's model analysis confirms that Information Quality, System Quality, and Service Quality contribute to user satisfaction, with Information Quality as the dominant factor, and usage intensity also increases satisfaction. The integration of the two models positions User Satisfaction as the primary mediator linking adoption factors to the final benefit, demonstrating its significance to the system's efficiency and effectiveness. This model explains the increase in efficiency by up to 70% through time savings, reduced paper use, improved documentation accuracy, enhanced coordination between units, and higher-quality public services. This finding confirms that optimising SRIKANDI requires a multidimensional strategy that improves information quality, builds capacity, standardises infrastructure, and is implemented gradually, with incentive mechanisms and continuous monitoring.

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