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Extending the ISS Model: Conceptualizing Security Quality and the Moderating Role of Digital HR Platform in e-Government

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Abstract:
All digital transformation initiatives within the public sector need information systems which combine robustness with security measures and user accessibility. The research adds "security quality" to the Information System Success model as an independent element while SSM website functions as a moderator factor in user satisfaction from quality features. The current conceptual model bases itself on Protection Motivation Theory (PMT) and Trust Theory while filling ISS framework gaps to address rising cybersecurity challenges in digital governance environments. The discussion present evident that users in the public sector base their system success assessment on service, system, information quality along with digital interface characteristics alongside their security perceptions. Further research will benefit from the eight developed propositions. This model improves theoretical knowledge in ISS success research and offers practical applications for secure digital government transformations especially relevant to Brunei Darussalam's Vision 2035 context.

Keywords: Security Quality, Digital Governance, SSM, Brunei's Vision 2035, ISS, Protection Motivation Theory, Trust Theory

1. Introduction

Public sector digital transformation serves as a fundamental reform method worldwide with a special emphasis on developing economies who wish to advance governance practices and service quality. Brunei Darussalam through Brunei Vision 2035 makes development of secure digital infrastructure with citizen-centered features and efficiency national priority. The government launched Sistem Sumber Manusia (SSM) which serves as a complete human resource management system for streamlining activities in public sector ministries. Digital platforms used by government institutions require success-driven systems development that achieve excellent performance standards and contented end users.

One of the most widely used models for analysing information system success is the ISS framework developed by(W. H. Delone & Mclean, 2003; W. Delone & McLean, 1992). The model presents four essential components including service quality and system quality along with information quality and user satisfaction. While underscores the necessity of security quality assessment in the present digital era since this model lacks specific measures for security quality evaluation. System users now base their judgements

on platforms through a combination of usability and information accuracy alongside their perception of security as concern about privacy and cybersecurity escalate.

The ISS model works independently form other digital platforms even though they shape how users perceive system utilization and satisfaction. Sistem Sumber Manusia (SSM) Website in Brunei function both as an HR management platform and serves as a digital governance system under governmental policy requirements. Such a system would enhance the quality attribute and user satisfaction relationship through perceptions by controlling these relationships with its design elements and accessibility features and trustworthiness.

The study addresses two theoretical gaps: introducing security quality as a standalone framework dimension to ISS and through analysing how SSM functions as a moderating element in socio-technical factors. An extended conceptual model which incorporates these elements should be developed to represent accurately how digital government adoption really works. This research develops a strong unified theory through ISS framework analyses and combining Protection Motivation Theory and Trust Theory to describe public sector users' secure digital system interactions.

2. Literature Review

2.1 Information System Success (ISS) Model.

The Information Systems Success Model by (W. H. Delone & Mclean, 2003; W. Delone & McLean, 1992) continues to function as the core method for evaluating information system performance. The model establishes relationship among six core dimensions which consists of service quality, system quality, information quality, use, user satisfaction along with net benefits. In the public sector context, the ISS model serves as a standard assessment tool for e-government portals together with online tax filing systems and digital service platforms (Chen, J.V., Jubilado, R.J., Capistrano, E.P., & Yen, 2015; Uyen Nguyen et al., 2024).

Researchers have focused criticism on the ISS model because it fails to dynamically handle external environmental and contextual elements which affect both user satisfaction and system success according to Seddon, (1997) and Myers et al., (1997). System quality includes security performance but fails to provide proper definition of security quality as an independent construct. The exclusion of security as an independent component from the ISS model reduces its ability to analyse trust-centred aspects relevant for user adoption and system use on modern sophisticated government platforms.

2.2 Security Quality: A Missing Dimension in ISS

Security quality describes how users view the systems defence of data privacy alongside its protection of data integrity and access authorization and its threat response mechanisms. Research studies are demanding the addition of security quality as a specific construct in information systems frameworks especially when users base their decisions on trust and perception of risk (Ansari et al., 2022; Moyo & Mnkandla, 2020; Ray et al., 2011). User adoption and system prolongation in critical security systems like e-banking, e-health or digital HR platforms mainly depends on perceptions of security (Rita et al., 2019; Siddiqui, 2017).

Research papers confirm that security elements such as password protection and HTTPS visual signals help users build trust and achieve better satisfaction (Grispos et al., 2019; Ray et al., 2011). User confidence toward IT systems is influenced directly by data protection laws along with governmental processes aimed at ensuring system, security. The current ISS literature fails to properly investigate these

security-related factors while reducing them to technical system quality appendices without user consideration.

The paper advocates to raise security quality as a standalone quality attribute at the same level as system quality and service quality and information quality in assessments of digital government systems based on ISS.

2.3 Moderating Role of Digital HR Platforms: The Case of SSM.

SSM platform in Brunei functions as both an HR management system while operating as a core electronic gateway that public workers must use to process employment activities such as record attendance and submit salary requests and take time off and conduct self-assessments. The system plays a vital administrative function for users who also relay on its abilities to influence their assessment of system performance and digital readiness along with their trust in the platform.

Research on the Information Systems Success Model focuses primarily on generic effects without examining platform variations that might influence quality construct and satisfaction relationships. Research finding show that the socio-technical design elements of the platform can strengthen or weaken the relationships between quality elements and user satisfaction (Gefen et al., 2003; Venkatesh et al., 2003). The combination of a system with strong security of security quality fails to create satisfaction when the user interface (platform) contains outdated confusing features.

SSM should be considered as a moderator between service users and their evaluation process of service quality components alongside system and information requirements as well as security standards in determining satisfaction levels. E-government literature demands that researches identify infrastructural design and governance platforms which function as mediators or moderators of information system success (Kanaan et al., 2023).

2.4 Theoretical Underpinnings: Protection Motivation and Trust

Security quality and platform-based moderation find their theoretical basis through the combination of Protection Motivation Theory (PMT) (Rogers, 1975) and Trust Theory (Gefen et al., 2003). People establish protective intentions through PMT by noticing threats coupled with their tense of how well the system responds to threats.

User-platform collaboration has its relational aspects studied through Trust Theory. Online system trust stems from three key beliefs about system reliability data integrity and institutional legitimacy according to Gefen et al., (2003). Users strongly depend on public sector systems for essential services because trust plays a vital role in these systems when users have minimal alternative options. Users judge authentication methods (such as two-factor authentication and identification login) and data defence practices which directly determine trust levels which affect overall satisfaction (Rita et al., 2019; Zahid et al., 2022).

3. Proposed Conceptual Model

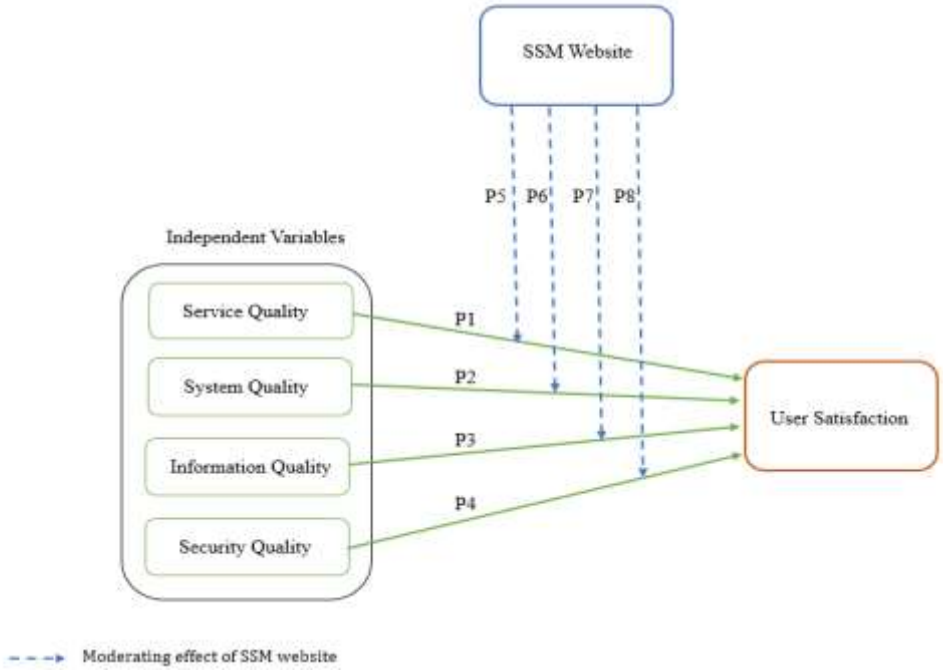
The research establishes a conceptual structure which merges security quality as an individual quality element influencing satisfaction together with service quality, system quality and information quality while it depends on Protection Motivation Theory and Trust Theory. The strength of these relationships gets moderated through the Sistem Sumber Manusia (SSM) Website as a new variable.

This study bases its approach on the concept that e-government HR system satisfaction includes multiple dimensions which extend from performance evaluation to security perceptions and institutional trust recognition. Staff members in Brunei regularly use the SSM website platform for their daily HR operations which determines their reaction to the identified quality characteristics.

Key constructs:

- **Independent Variables (IVs):**
  - Service Quality (SQ) – Responsiveness, Tangibles, reliability, assurance, empathy
  - System Quality (ST) – Usability, Stability, Speed
  - Information Quality (IN) – Relevance, Presentation, Accuracy
  - Security Quality (SC) – User Awareness, Data Protection, Authentication Measures, Government Security Measures, Security Indicators, Threats Management
- **Dependent Variables (DV):**
  - User Satisfaction (US) – Service Functionality, Communication Effectiveness
- **Moderating Variable (MV):**
  - Sistem Sumber Manusia (SSM) Website – Convenience, Website Organization, Overall Experience.

Figure 1: Proposed Conceptual Framework of ISS Model Extension



3.1 Research Propositions

As this paper focuses on conceptual exploration instead of empirical studies, testable propositions are suggested instead of empirical hypothesis. The proposed statements will function as a theoretical basis which enables upcoming empirical investigations.

3.1.1 Direct Relationships

P1: Higher service quality is positively associated with greater user satisfaction in SSM Website
P2: Higher system quality is positively associated with greater user satisfaction in SSM Website
P3: Higher information quality is positively associated with greater user satisfaction in SSM Website
P4: Higher security quality is positively associated with greater user satisfaction in SSM Website

3.1.2 Moderating Role of SSM Website

P5: The SSM website moderates the relationship between service quality and user satisfaction.
P6: The SSM website moderates the relationship between system quality and user satisfaction.
P7: The SSM website moderates the relationship between information quality and user satisfaction.

P8: The SSM website moderates the relationship between security quality and user satisfaction.
These propositions reflect a comprehensive framework for examining the quality determinants of user satisfaction while accounting for the interface through which users experience the system.

4. Discussion and Implications

The suggested conceptual model delivers valuable theoretical knowledge along with useful practical benefits for public sector digital platform development to academic scholars and professional staff involved in policy making. This section evaluates the extended applicability of merging Security Quality together with SSM Website moderation within the ISS framework.

4.1 Theoretical Contributions

The presented research adds Security Quality to the Information System Success model as a standalone construct with direct measurement effects on user satisfaction. The ISS framework issued previous versions without devoting enough attention to security despite recognizing reliability and service responsiveness. The research utilizes concepts from Protection Motivation Theory and Trust Theory to present an improved framework that specifically benefits e-government systems where perception of threats and trust levels determine success.
The implementation of the SSM Website for this study represents an improvement in ISS research because it allows exploration of how system context and user interface shapes user satisfaction perceptions. The framework demonstrate that system success extends beyond technical capabilities and information delivery because it depends on the user experience with digital interfaces designed for institutional and centralized systems.
The proposed model moves ISS research forward by supporting the literature's recommendations to upgrade one-dimensional static models with behavioural factors which include institutional trust and platform legitimacy together with user empowerment. Empirical research about moderation effects in e-HRM systems will find a starting point in the proposed model while focusing on public administration contexts from emerging economies.

4.2 Practical and Policy Implications

Public sector organizations need to integrate visible security features with user-based authentication systems and HTTPS connections under system design for their SSM Website platforms. Using perception-based security as a driving force for user satisfaction becomes essential for government IT managers to handle.
System accessibility together with interface design and institutional legitimacy act as moderators which strengthen or weaken the impact of quality attributes on the SSM Website. Permanent assessments of SSM Website interface usability together with visual aspects remain crucial to support user engagement levels and achievement of satisfaction goals.
The model enables policy makers to create digital transformation programmes that fulfil the requirements of Brunei Vision 2035 as well as the Digital Economy Masterplan 2025 standards. Policy makers now have explicit guidance for making e-HRM platform cybersecurity improvements while maintaining their development process through user feedback and secure design guidelines. The Brunei government must adopt a strategic approach to SSM beyond its technical function to strengthen public digital platforms through better trust alignment with citizens and institution legitimacy improvement.

4.3 Research Implications

The research model presented in this paper creates multiple opportunities for empirical studies to advance.

The proposed model can be verified through structure equation modelling using data from public servants currently working within the SSM platform. A moderation analysis of the SSM Website platform usage should be performed across different ministries to verify if user responses change according to departmental culture or task requirements. This research could determine whether e-HRM systems of other countries including Malaysia's HRMIS and Singapore's HRConnect demonstrate similar or distinct patterns regarding quality measures and user satisfaction standards.

5. Conclusion

User satisfaction together with trust and system success require deeper investigation in public sector organizations due to their growing dependence on digital platforms. This paper demonstrates two significant theoretical differences between current research and the Information System Success (ISS) Model which consists of security quality being an independent construct and digital HR platforms, such as Sistem Sumber Manusia (SSM), not being recognized as modulating factors in public service provision. A research model integrated user satisfaction predictors from service quality, system quality, information quality and security quality while showing SSM to affect user perceptions and evaluations of these quality dimensions. The theoretical framework uses Protection Motivation Theory and Trust Theory to establish a strong model that addresses both application functionality and human behaviours patterns of users in digital government interfaces.

The proposed conceptual model expands ISS research by presenting an innovative security-conscious approach to system achievement evaluation within developing economic regions that adopt digital governance transformations. The research design offers useful recommendations to both system developers and policy maker whose goals are to improve e-HRM system in terms of trust a usability and effectiveness.

The presented propositions require future empirical research to validate them while testing platform design moderators across different e-government settings along with expanding our knowledge of digital service satisfaction dynamics. The model lays the necessary groundwork for future empirical examinations that will support the deployment of user-focused public sector IS frameworks.

Upcoming empirical studies should use demographic variables including age, gender, division and employment status to strengthen the reliability of their results because this model currently focuses on theoretical quality and user satisfaction relationships.

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