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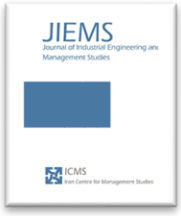

Modelling the Effect of Information System Sustainment Factors

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Abstract

Using information systems (IS) infrequently and ineffectively after initial adoption may result in unnecessary costs or waste of effort. Most continuous models for information systems are concerned with how users accept and use IS. In the original marketing research and modeling of consumer repurchase behavior, these models were developed to assess loyalty and continuity within individual levels of system usage or in the individual acceptance of systems. They were developed for marketing research and to model repurchase behavior. To study the continuation of systems, effective factors of continuation for organizational users are not taken into account. To identify factors that influence the continuation of information systems, we reviewed the literature and conducted semi structured interviews to identify the main factors. Independent variables include governors, managers, leadership styles, technology change, strategies, users, customer expectations, culture, law, and transparency, Using Atlas T/I software in the last step, the final model of research is customized in the system of communication and information technology by adding mediator variables like switching costs and positive and negative switching costs.

Keywords: Information systems, Continuance, Switching Cost, Usability, E-Loyalty.

Paper Type: Original Research

1. Introduction

In recent years, the critical role of information systems (IS) in achieving organizational efficiency and competitive advantage has gained widespread recognition. With advancements in technology, organizations across various sectors are increasingly adopting IS to streamline operations, enhance decision-making, and improve service delivery. However, ensuring the long-term sustainment and effectiveness of these systems presents significant challenges, particularly as organizational needs evolve and systems require ongoing updates, integration, and user engagement. Understanding the factors that influence the sustained use of information systems is essential for organizations aiming to maximize their investments in these technologies. Existing literature on information system sustainment has often focused on technological factors, such as system quality, ease of use, and compatibility (Bhattacherjee, 2001). More recent studies have broadened this scope, examining the role of organizational, cultural, and human factors, including leadership, user engagement, and organizational culture, which collectively shape the environment in which IS functions and are critical to continued usage. Moreover, factors such as switching costs, user satisfaction, and the alignment of IS with organizational goals have been shown to significantly affect the decision to continue or discontinue the use of a particular system. This study seeks to contribute to this body of research by examining both qualitative and quantitative factors influencing IS sustainment, particularly within Iranian organizations. By exploring a range of factors—from legal compliance and system maturity to user satisfaction and organizational maturity—this study aims to provide a comprehensive understanding of the elements that encourage sustained IS use. Today, information systems are one of the most important infrastructures that play a vital role in the success of today's organizations, and their use will lead to the reduction of costs and the shortening of the organization's operations. Vatanasombut et al.)2008) surveyed different aspects of information systems. As stated by Chen et al.)2012), software producing companies have found the necessary motivation to compete in this market, and the result has been an increase in options and the transfer of information systems users from one product or service to another is inevitable. But the discontinuous and inefficient use of information technology after its initial acceptance as stated by Kim et al.)2007) leads to incurring unwanted costs or wasted efforts for the development of information technology. Also, Zhou)2013) has complete survey in this issue too. Bhattacherjee)2001) and Liu)2018) studied the field of the continuity of information systems based on the

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theory of diffusion of innovation and technological acceptance models and the adaptation of expectations and the theory of planned behavior, in the pursuit of testing variables to determine how the information system is accepted, are new and used. Lutfi (2022) stated the importance of continuing to use the new system in exchange for the adoptio555n of the new system for the producers of information systems is that acquiring a new customer costs five times as much as keeping the current customer. These models, which were originally developed for marketing research and repurchase behavior modeling, seek to evaluate loyalty and continuity at an individual level for the use of the system and claim that user satisfaction is the most important information factor in the use of the system contrary to the existing models that consider the issue of continuity at the individual level, based on the theory of favoring the status quo, it can be explained why organizations are inclined to continue working with the current options mentioned in Cheng (2020). There are three main reasons for explaining the theory in favor of the status quo as mentioned in Ding (2019): mistaken perception, psychological commitment, and rational decision making. Psychological commitment may be caused by irreversible costs. Companies use numerous tangible and intangible resources to invest in information systems, which lead to irreversible costs when companies decide to transfer to a new system. These non-returnable costs are nothing but switching costs, while in the relevant literature, factors influencing user behavior change in the form of switching costs have been studied in broad theoretical perspectives, and empirical studies have provided evidence about the cost. Kaewkitipong et al. (2016) discussed that They have presented displacement in the information technology market, but they have not provided a direct assessment of displacement costs. Since most of the present studies with a negative view have been investigating organizations that have the problem of non-continuity of use of information systems, and in these studies such as Basak, & Calisir (2015), the factors influencing the non-continuity of use of information systems have not been investigated and identified. In the pursuit of this, organizations continue to use information systems under the influence of what factors. Therefore, based on the institutional theory such as Po-An Hsieh & Wang (2007) that considers the organization's environment as having a special effect on the organization's point of view, there should be effective factors in this environment such as stakeholders, organization's goals, new technologies, organization's regulations, industry rules, coercion, government norms, social norms. The developed norms, the demands of the customers, are used to examine the factors shaping the organizational continuity. In general, the current research is focused on the continuity of the use of the organizational information systems and that the performance and success of the system, the effect of expectations is not useful for predicting performance, and on this basis, it is necessary to answer the following questions: What is the model of factors affecting the continued use of information systems?

- What are the factors influencing the continued use of information systems?
- How are the relationships between factors affecting the continued use of information systems?
- What is the situation of the System of Communications and Information Technology based on the designed model?

To answer these questions, first the research literature was reviewed and the factors extracted from the subject literature will be used as the basis for interviewing experts and designing a model, and then, the situation of the " System of Communications and Information Technology" will be analyzed based on this model.

2. Theoretical foundations and research background

The studies that describe the behavior of information systems users in the space based on network and services can be classified into two groups: studies based on the expectation confirmation model, and studies based on other theories and models such as Venkatesh et al. (2011) and specially Lin et al. (2017). For example, the ECM model has been developed to include the relationship between fun and satisfaction, and pre-acceptance beliefs have developed the ECM model to expand the application of the model beyond its instrumentally focused boundaries, and thus the model "to take into account the habits of information systems for the purpose of development and have added a new factor of loyalty to the model. Also, research done by Al-Samarraie et al. (2018) have combined the deterministic model with the proposed theory about perceived pleasure. Other studies like Zhou (2016) have tried to integrate theories or models for the use of information systems. In research, they have combined the commitment-trust theory with the ECM model and technology acceptance in order to obtain a model for continued use and have shown that the relationship between commitment and trust is a stronger predictor for the intention to continue, or the adoption model Based on the theory of disconfirmation of expectations, they have been analyzed. Another part of the studies carried out in previous research have tried to adapt the models and theories of acceptance and deployment of technology to apply these theories and models in the field of post-deployment

behavior. Cheng (2020) studies on the factors that shape user behavior for continued use and to explain the factors that determine users' participation in the virtual community, two factors that shape the intention in a conscious and unconscious way have been identified by Karba in the online community. The future behavior will be (intention to continue) surveyed in Sasongko et al. (2022) and Tan et al. (2018). In addition to the expectation matching model, the basic model in discussing the acceptance and sustainability of information systems, the technology acceptance model is based on the variables of simplicity and usefulness perceived by the user, and other models proposed in the literature are consistent with this mentioned in Lin et al. (2017). Among them are the studies such as Lin et al. (2017) and Al-Samarraie et al. (2018) conducted based on this model in the field of continuity of information systems, which seek to explain the importance of cognitive judgments in the application of information systems from the point of view of emotions. Due to the importance of quality in the issue of continuity of information systems, "Delon and McLean" in the success model of information systems have come out in the investigation of the role of system quality and information quality. that the intention of continuity in the mobile social service network based on the success model of "Delon and McLean" information systems has been investigated in Zhou (2016). Looking at a collection of the latest articles published in the field of continuity of information systems, it is evident that the focus of recent studies in this field has been on issues such as the concept of continuity in cyberspace, electronic library, and electronic banking; Like a study that was done using the theory of institutional trust in the nascent economy of the country "Ghana", which examined the intention of continuing the use of Internet banking. In the study of another, there is a story that has been the case of mobile users in the country through the composition of expectations, admission to technology, and the perception values of the scholars, In a study indicated by Bawack & Ahmad (2021), subsidiaries and the testing of the Sunnah for the use of this technology, the results of the collection were collected by the clergy at the same time as the factor in the field of information Based on the perceived commercial value, the agent facilitates the continued use of this system directly and indirectly. In a study done by Wang (2010) they explain the continuation of users' use of tools for sharing links in social media, the researchers determined the role of emotional and cognitive structures such as satisfaction, tendency and habit in the intention of continued use. And satisfaction has a direct effect on the intention to continue using, and habits play a role as a mediating variable in this relationship. Muqtadiroh et al. (2019) studied a case using the theory of transitional leadership and the continuity model of information systems, a theoretical model has been conceptualized and a distinction has been made between the influence mechanisms of leadership behaviors in the success of information systems. Based on the findings of this research and also Lee et al. (2020), the transition leadership behavior affects the evaluation of the users in the satisfaction and the perceived value of the system, and the interactive leadership behavior affects the intention of the users of the company's information systems to continue by moderating the effects of the satisfaction of the manager and the partner. In the studies to test the intention to continue using the government's "Facebook" pages, the theories of matching expectations and the success of information systems were used by Lee (2011) and also Lai & Zhao (2019). A sample of 362 Iranian students was used, and based on the findings of this study, the continuity of information systems and satisfaction with government Facebook pages have a contingent relationship with the quality of information on these pages. Another study in this field has studied the factors of the intention to continue using smart phones under the influence of cultural values in the two countries of China and America. Or, in a study, prominent factors affecting the intention to continue using smart sports products have been investigated. Among the issues that have been noticed in recent researches regarding the continuity of information systems is the examination of the role of social media. For example, research has proposed that despite the number of information systems, little attention has been paid to the mediating role of perceived scores in the publication of selfie photos in these media. Despite the fact that there have been extensive studies in the field of technology acceptance in organizations and higher education, the lack of research on the acceptance of electronic learning technologies in schools is felt. In this regard, a two-stage proposed model, which is derived from the models of confirmation of expectations and acceptance of technology, has been used to predict the continued use of learning management systems by students, and the result is that the ease of understanding the intentions of teachers is related to management systems do not have learning in the first stage, but the relationship between perceived ease with the intention to use these systems and user satisfaction becomes stronger in the second stage done by Chen & Li (2017). Today, one of the applications of technology is that it provides better possibilities for learning all over the world and reduces the distance and time problems that were related to traditional learning. Despite the mentioned benefits, keeping students in online platforms is a very challenging task. Complexes in his research by examining the position of stance on the factors affecting the accepted factors, the use of technology, and the outflow of learning, which was a composition of learning. mouth According to the background of the research, it is evident that the concept of continuity affected by environmental factors and costs has not been taken into account somewhere in the organizational context, and researches have taken the concept of continuity of information systems in the organization from a similar point of view done by Bölen, & Özen, (2020). Previous research shows that selecting an appropriate theory or model has always remained

a critical task for IS researchers. There are few papers that review and compare the acceptance theories and models at the individual level. Hence, Tarhini et al. (2015) aims to overcome this problem by providing a critical review of eight of the most influential theories that have been used to predict and explain human behavior towards adoption of various technologies at the individual level. Iriarte and Bayona (2020) surveyed Information Technology (IT) projects are enablers of organizational transformation and business growth. Despite the contribution of methodologies and frameworks for project management, the ratio of failed IT projects remains high; then, studying critical success factors of IT projects persist as an essential issue for researches and practitioners. This paper presents a systematic literature review focused on compiling and synthesizing project success factors in IT projects. Mishra et al. (2023) studied extends the post-acceptance model of information systems (IS) continuance, which is widely used to explain users' satisfaction and IS continuance intentions. The extended model includes additional variables such as perceived ease of use (PEOU), attitude, trust, and enjoyment. The proposed model was tested using meta-analytic structural equation modeling (MASEM). the findings indicate that PEOU directly influences perceived usefulness, satisfaction, and attitude. Trust and enjoyment both have a positive impact on users' satisfaction and IS continuance, wherein the effect of enjoyment was higher than trust. post-consumption satisfaction resulted in a favorable attitude toward technology, which further affected IS continuance.

3. Research method

In the first stage of this study, the researcher aims to identify the factors affecting the continuation of use. It has benefited from the information systems and the analysis and survey of the studied society based on the research model of the qualitative/quantitative research method. Therefore, it can be stated that the first part of this research is based on the interpretative paradigm and the second part is based on the positivist paradigm. An Iranian company in the context of examining information system sustainment factors. The company operates in a sector that has adopted information systems to support organizational goals, streamline processes, and improve decision-making efficiency. This company, like many in Iran, faces unique challenges, including alignment with local regulations, navigating resource constraints, and addressing human and organizational factors that influence the system's continued use. To understand the factors that lead to sustained use of their information systems, the study focuses on aspects such as system maturity, organizational culture, and management's role. The company prioritizes strategies to ensure the information system's compatibility with both internal processes and regulatory standards, as these are essential for long-term investment returns. Additionally, leaders within the organization must emphasize user satisfaction, manage change effectively, and balance costs associated with potential system upgrades or replacements. This case reflects broader themes in IS research and highlights how organizations, particularly those operating in regulated or resource-constrained environments, must carefully consider both technical and cultural factors to sustain effective IS use. In the first part, for the analysis of literary analysis. in the second part, the quantitative survey research method is used.

Table1. Cross table of raters one and two, (Source: Author).

			Rater two	Disagreement	Sum
Rater one	Disagreement	Expected count	15	6	21
			1.3	19.7	21.0
	agreement	Expected count	5	300	305
			18.7	286.3	305.0
Sum	Expected count		20	306	326
			20.0	306.0	326.0

Table 2. The result of calculating the Kappa agreement coefficient (symmetric measures), (Source: Author).

	VALUE Asymptotic	VALUE Asymptotic	VALUE Asymptotic	VALUE Asymptotic
Measure of agreement	0.714	0.082	12.891	0.000
kappa	326	-	-	-
N of valid cases	-	-	-	--

Switching costs play a significant role in the decision to continue using an information system (IS) because they create barriers to moving away from a current system. Switching costs are the financial, time-based, psychological, and operational expenses incurred when transitioning from one IS to another. High switching costs often reinforce an organization's commitment to its existing IS, even if there are newer or potentially more efficient options available. Here's a closer look at how different types of switching costs influence IS continuance decisions:

1.Financial Switching Costs

• Direct Costs: These are the immediate financial expenses associated with switching systems, such as purchasing a new system, acquiring new licenses, and paying for the implementation of the new IS.
• Indirect Costs: These include costs related to disruption in productivity or additional expenses for customization and integration with existing infrastructure.
When financial costs are high, organizations are more likely to opt for incremental improvements or upgrades to their current system rather than switching, ensuring they extract maximum value from their investment.

2. Time and Effort Costs

• Implementation and Learning Curve: Switching to a new IS involves significant time for planning, implementation, and training. Employees may face a learning curve with the new system, which can temporarily reduce productivity.
• Disruption to Routine Operations: Transitioning to a new IS can disrupt established workflows, interrupt daily operations, and require additional resources for troubleshooting and adaptation.
Time and effort costs contribute to the psychological resistance to change within the organization, making it easier to justify the decision to continue using the existing IS.

3. Psychological and Relational Costs

• User Resistance to Change: Users often become comfortable and proficient with a familiar IS, and a change can lead to frustration, anxiety, and decreased morale.
• Loss of Established Relationships: If an organization has built close relationships with a vendor or service provider for its current IS, this relationship may be difficult to replicate with a new provider.
Psychological and relational costs often increase the perceived risk of switching, especially if employees or managers are skeptical about the benefits of a new system.

4. Operational and Process-Specific Costs

• Data Migration and Compatibility Issues: Transferring data from one IS to another can be complex, particularly if there are compatibility issues or if the data is sensitive.
• Integration with Existing Systems: Organizations often use multiple systems that are integrated to support various functions (e.g., CRM, ERP, and HR systems)
Operational costs are particularly high in organizations that rely on multiple, interdependent systems, as switching one may necessitate changes or upgrades to others.

5. Legal and Regulatory Costs

• Compliance Requirements: If an IS has been tailored to meet specific regulatory requirements, switching systems may require additional audits, updates, or reconfigurations to meet compliance standards.
• Intellectual Property and Licensing Issues: If there are proprietary technologies or specific licensing agreements involved in the current IS, switching to a new system might involve negotiating new contracts, which could add legal costs.
These regulatory and contractual switching costs often create legal obligations that make it more convenient and cost-effective to continue using the current IS.

6. Opportunity Costs

• Lost Opportunities for Innovation: While sticking with an older IS may save on switching costs, there are opportunity costs associated with forgoing potential advantages of a new system. A newer IS may offer enhanced features, greater efficiency, or new capabilities that can provide a competitive advantage. However, if the organization chooses not to switch, it may miss out on these benefits.
In some cases, organizations weigh opportunity costs against direct switching costs, choosing to continue with an existing IS when the incremental benefits of a new system don't justify the overall costs.

7. Strategic and Long-Term Costs

• Dependency on Legacy Systems: Over time, organizations can become dependent on legacy systems that form the backbone of their operations.
• Sunk Costs: Investments already made in the current IS, including money, time, and effort, create a "sunk cost" effect.
The strategic and long-term costs underscore the importance of continuity, where organizations weigh their commitment to an established IS against the anticipated return on investment of a potential new system.

Certain leadership styles are particularly effective at fostering the sustained use of information systems (IS) within an organization, as they align with creating an environment that supports IS adoption, engagement, and long-term use. Here are the key leadership styles identified as most conducive to sustained IS use:

• Transformational Leadership contains vision and inspiration in which leaders articulate a clear and compelling vision of how IS can enhance organizational goals, inspiring employees to see the technology as an essential part of their work. Transformational leadership is especially beneficial for IS continuance as it emphasizes the motivation, commitment, and active engagement of employees, all of which are crucial for maintaining system usage.
• Transactional Leadership contains clear goals and rewards; in which transactional leaders establish clear expectations and performance goals related to IS use. They use rewards and incentives to encourage consistent use, which can build a strong foundation of IS engagement over time. Transactional leadership is effective in reinforcing regular IS use through well-defined goals and feedback, making it ideal for organizations seeking structure and consistency in IS engagement.
• Servant Leadership contains focus on user needs. Servant leaders prioritize the needs of employees, providing support, resources, and training to ensure that users feel comfortable and empowered when using the IS. Servant leadership is valuable for sustained IS use because it emphasizes employee empowerment, support, and satisfaction—key factors that encourage users to continue using the system effectively.
• Participative (Democratic) Leadership contains involvement in decision-making. Participative leaders involve employees in IS-related decisions, such as system selection, customization, and process alignment. This inclusive approach makes employees feel more connected to the IS, fostering a sense of ownership. Participative leadership is highly conducive to sustained IS use, as it fosters buy-in, collaboration, and shared responsibility, making employees more likely to adopt and continue using the system.
• Adaptive Leadership contains flexibility and responsiveness. Adaptive leaders are flexible and responsive to changing organizational needs and technological advancements. They encourage employees to explore and adapt to new IS features or tools as the system evolves. Adaptive leadership is particularly beneficial in dynamic environments where technology and processes evolve quickly, as it prepares users to embrace change and remain engaged with the IS over time.

In summary, the most effective leadership styles for sustaining IS use share common traits, such as fostering engagement, providing support and resources, encouraging feedback, and adapting to change. Leadership styles like transformational, servant, and adaptive are particularly effective because they focus on empowering users, facilitating ongoing learning, and building a culture that values IS as an integral tool for achieving organizational goals.Organizational culture plays a significant role in shaping the adoption and sustained use of information systems (IS). The beliefs, values, and norms within an organization can either support or hinder the continuation of IS usage. Here's how specific cultural factors impact IS continuance:

-Attitude Toward Change and Innovation

Organizations with a culture that values innovation and is open to technological advancements tend to encourage the continued use of IS. Employees in such cultures are more likely to embrace changes brought by new systems or upgrades, viewing them as opportunities for improvement. In contrast, a culture that is resistant to change can hinder IS continuance. Employees in such environments may be hesitant to adopt new systems or adapt to updates, viewing them as disruptions rather than benefits.

-Collaboration and Knowledge Sharing

A culture that emphasizes teamwork and collaboration can enhance IS adoption and continuance. When employees are encouraged to share knowledge and best practices, they become more comfortable with the system, learn from each other, and collectively solve issues, which reinforces sustained use. In a culture with rigid departmental boundaries, employees may not share IS knowledge, which can limit the system's utility and hinder its integration across functions. Without collaborative support, employees may struggle to maximize the IS's potential, which can decrease its perceived value over time.

-Leadership Style and Support for IS

In cultures where leaders actively advocate for and participate in IS usage, employees are more likely to adopt and continue using the system. Leadership support signals that IS is a priority, which increases buy-in and encourages sustained engagement. If leadership does not emphasize the importance of IS or is indifferent, employees may lack motivation to use the system consistently. A lack of support can also make it difficult to secure necessary resources for IS maintenance and training, leading to decreased usage over time.

-Risk Tolerance and Experimentation

Cultures that encourage experimentation allow employees to explore the IS, discover new functionalities, and test solutions to improve workflows. This trial-and-error approach makes users more likely to integrate the IS into their

routines and keep using it. Conversely, in risk-averse cultures, employees may be reluctant to explore the full capabilities of the IS due to fear of making mistakes or being held accountable for errors. This can limit the system's effective use and decrease the likelihood of sustained engagement.

-Focus on Employee Development and Training

Organizations that prioritize employee development often have structured IS training programs, which enable employees to build confidence and proficiency with the system. This investment in skills development helps ensure that users continue to engage with the IS long-term. If training is insufficient or sporadic, employees may feel frustrated with the system and fail to use it effectively. This lack of confidence and competence can lead to underutilization or even abandonment of the IS.

-User-Centric and Supportive Culture

In user-centric cultures that prioritize employee support, organizations actively address employee concerns and provide resources, such as help desks or IT support, to assist with IS-related issues. This support helps resolve frustrations, fostering a positive user experience that encourages continued use. In cultures where user concerns are not addressed, employees may grow frustrated by unresolved issues or lack of resources to improve their IS experience. This lack of support can lead to decreased engagement or resistance to future system updates.

-Performance Orientation

In performance-oriented cultures, employees understand the connection between IS and achieving organizational goals, such as efficiency, accuracy, and productivity. This understanding motivates them to use the IS consistently to meet performance expectations. If IS usage is not clearly tied to performance goals, employees may see it as optional rather than essential. Without this connection, they may lack motivation to engage with the system on a sustained basis. 8. Adaptability to External Influences Organizations that adapt readily to external changes, such as industry shifts or regulatory updates, are more likely to see IS as a tool to stay competitive. This adaptability reinforces the value of IS and encourages its ongoing use. Organizations with a rigid culture may find it challenging to adapt their IS to changing needs or market demands. This inflexibility can make the system obsolete, leading to decreased usage and potential discontinuance.

Conclusion To foster sustained IS use, organizations can cultivate a supportive culture that values change, encourages collaboration, and prioritizes training and user support. By aligning the IS with both organizational goals and employee needs, a culture can develop that views the system not only as a tool but as an essential element of the organization's long-term strategy.

Measuring the effectiveness of information system (IS) usage over time within an organization involves evaluating a mix of quantitative and qualitative factors to determine whether the IS aligns with organizational goals, supports productivity, and fosters long-term engagement. Here are several key approaches to measure IS effectiveness over time:

System Usage Metrics

• Frequency and Duration of Use: Track how often and how long users engage with the system. Higher, consistent usage often indicates value, while low or decreasing use may suggest inefficiencies or lack of usefulness.

• Feature Utilization: Assess the extent to which various features of the IS are used. High utilization of critical features suggests the system meets users' needs, whereas underused features may indicate redundant or confusing design.

• User Access Logs and Activity Data: Monitor data from access logs to see which departments or user groups interact most or least with the system.

User Satisfaction and Feedback

• Surveys and Questionnaires: Conduct periodic surveys to gauge user satisfaction, focusing on ease of use, relevance, and perceived value. The Expectation-Confirmation Model (ECM) is often used to assess user satisfaction based on initial expectations and experiences.

• Focus Groups and Interviews: Gather detailed insights from select user groups to understand specific needs, frustrations, or suggestions for improvement.

• Net Promoter Score (NPS): Measure how likely users are to recommend the system, which reflects their satisfaction and willingness to continue using it.

Continuance Intention

• Intention to Use: Evaluate users' intention to continue using the system based on their experiences, often assessed through surveys or questionnaires.

• Behavioral Indicators: Track long-term adoption trends and patterns, such as login frequency and depth of interaction. Continuous, consistent use indicates that the IS remains relevant and valuable to users over time.

By regularly measuring these factors, organizations can obtain a well-rounded view of IS effectiveness, address any issues early on, and ensure that the system continues to meet user needs and organizational goals over time.

The content analysis process for coding and drawing the model is presented in the form of six steps in Table 3, and in it, the process of identifying the codes is a round trip. In this sense, firstly, by reviewing the subject literature, the basic and general concepts of the continuity of information systems were extracted. Then, after the interviews were conducted and new and more detailed concepts were presented, the literature was once again referred to in order to find the equivalent of the discussions raised in the interviews in the literature as well.

The results obtained from the coding carried out regarding independent and mediating concepts are presented in the format of Table 4.

Table 3. The step-by-step process of theme analysis, (Source: Author)

The level	Step	Action
Analysis and description of the text	Getting to know the text	Writing the text of the interviews and re-reading the texts and determining the quotation Promises in the text
	Creating initial coding codes	Determining the primary codes based on the total of specific quotations of the Atlas T/I software
	Searching and understanding topics	Classification of primary codes in the form of independent and mediating main themes
Explanation and interpretation of the text	Drawing the network of topics	Drawing the relationship between all the themes
	Content network analysis	Definition of each of the factors of the model and related concepts in the format of Table 4
Composition and integration of text	Writing a report	Preparation of reports in the form of applications and innovations

Table 4. Main and secondary topics, (Source: Author).

Agents	Agents
The role of the system	The riskiness of changing the information system due to its sensitive position in the processes
	Organization (JS1)
	The sensitivity of the role of the information system in the critical factors of success (JS2)
	The sensitivity of the role of the information system in achieving goals (JS3)
	A high number of users and users of information systems (JS4)
The rulers	The willingness of the board of directors and shareholders of the organization to continue the activity of the organization's information systems due to the existence of relocation costs for changing the system (H1)
	Non-acceptance of system changes by the rulers of the organization due to lack of guarantee of profitability (H2)
	The continuation of the activity of information systems due to greater alignment with the macro policies of the organization's rulers (H3)
Culture	Employees' habit to the status quo (F1)
	Weakness of cooperation culture in the organization (F2)
	The spirit of resistance to change (F3)
	Risk aversion (F4)
	Lack of knowledge about the role of information systems (F5)
	Not believing in the necessity of transformation in information systems (F6)
Users	Unwillingness to accept the consequences of change (K1)
	Inconsistency between the individual goals of the employees to maintain the status quo and the collective goals of the organization to create changes in information systems (K2)
	Lack of motivation and curiosity among users (K3)
Technology change	Continuity of information systems activity in case of high relocation costs for technological change (TT1)
	The activity of information systems in the case of large size and age of information systems due to high relocation costs for technological changes (TT2)
Law	The cost of non-continuity of information systems in case of taking the intellectual property of information systems (GH1)
	Continuity of the information systems due to the laws applied by the governing bodies to unify the information in the organization (GH2)
Waiting for the customer	Customers' habit to information systems (EM1)
	Unconscious use of information systems due to customers' previous learning (EM2)
Method of leadership	Continued use of information systems due to the leadership style of maintaining the status quo (SR1)

	Continued use of information systems due to the harmony of the organization's leadership style with the structure and capabilities of the employees to maintain the current situation (SR2)
Managers	The willingness of the organization's managers to continue using information systems in the case of high switching costs (M1.)
	The tendency of the managers of the organization to continue using information systems due to the short life of their appointment (M2)
	Not believing and not understanding the role of information systems and the necessity of transformation in order to improve performance (M3)
Maturity of the organization	Continuity of using information systems because the organization is at the maturity point of its life cycle (BS1)
	Continued use of information systems due to information systems being at the maturity point of their life cycle (BS2)
Strategy	Continuing to use information systems due to alignment with the organization's strategies (S1)
	Continued use of information systems due to high costs of change
Transparency	Continued use of information systems due to the loss of bargaining power in the organization caused by the decrease in the expertise of individuals due to the change of the system (SH1)
	Continued use of information systems due to the desire to help and lack of desire to serve as a result of system change (SH2)
	The continuation of using information systems is not pleasant because of the better circulation of information in the organization due to the change of the system (SH3)
	Continuation of using information systems in order to avoid the revelation of performance weaknesses due to the change of the system (SH4)
Positive Displacement Costs	Efficiency/effectiveness of the system in accomplishing missions with the lowest possible cost (KS)
	Ease of use of the system from the point of view of organization users (SK)

According to the concepts extracted for the model based on the six steps indicated in Table 3, regarding the preparation of the questionnaire to conduct the survey in the " System of Communication and Technology". Considering that the questions of the questionnaire were compiled on the basis of the model obtained from the interview with the experts and were examined and corrected in several stages by the interviewees and also by three expert professors, they were included in the subject of the project. The authenticity of the content is necessary. To measure the reliability of the questionnaire, an initial sample with 16 questionnaires for pre-test was selected from among the experts in the fields of information technology in the research center of " System of Communications and Information Technology". While analyzing the data obtained with SPSS25 software, based on the acceptable level for Cronbach's alpha, the reliability coefficient (dissertation) of the old thesis was 0.428. In the next step, the questionnaire was distributed based on purposive sampling, and in the end, among the 40 distributed questionnaires, 31 questionnaires were completed following the results. Regarding the adequacy of the response level to the questionnaire, based on the results and figures of previous studies in the field of information systems, it can be claimed that the level of acceptance of the questionnaire is from the field of the system. "Baruch" has claimed by examining researches based on the survey approach that the average rate of answering and returning the questionnaire in such studies is 23 percent. "King and He" also evaluated the top three publications in the field of information systems from 1999 to 2004 and estimated the response and return rate of the questionnaire in some studies between 3-4. are This is while the lowest response rate in the mentioned period in the studies published in these three publications was between 7.8 and 15.1 percent. between 1998 and 2002, between 22 and 59.4 percent have declared. In the first step, to determine the method of data analysis and according to the volume of 31 samples collected by performing the "Kolmgrove-Seminirov"1 test and the confidence level of 95. In the continuation, with the aim of identifying the effective use of information in the organization of information. " System of Communications and Information Technology" from the point of view of the experts of this ministry, I am pleased to inform you. The conceptual data whose significance number is equal to or greater than 0.05 have been assigned to themselves by the experts as an effective concept for the continuity of the window. Based on the listed results, it is clear that out of the total of 46 concepts tested, 5 concepts have not been approved based on the opinion of the experts. To classify the concepts of the model based on the "McFarlan" matrix, the questionnaires were divided into four groups: strategic, key operations, support, and potential, and there are 31 questionnaires., has come.

Table 5. Questionnaires collected in each of the floors, (Source: Author)

The number of collected questionnaires	McFarlane matrix classification
8	strategic
7	key operations
9	support
7	potential

Based on the results of the "Friedman" test at the 95% confidence level, the concepts in all four categories of the "McFarlan" matrix do not have the same importance. The analysis carried out in this section, in the first step, leads to the classification of transportation costs with content analysis. It was discussed in the literature that, based on the issues presented in the literature, mediating factors can play the role of influencing the continuation of use. In the second step, considering the content analysis method that relies on a theoretical background, Institutional theories and support theory were extracted from the existing situation by analyzing in-depth interviews conducted

with the help of AtlasT/I software, and by relying on the "Holsti" formula and the Kappa coefficient, the reliability of the analysis was obtained in this field. Then, the factors of the extraction model were localized in the form of a questionnaire in the society under study, and the concepts that were not confirmed for the society under study were specified and the concepts that were confirmed were categorized in the form of the "McFarlan" matrix. The interpretation of the results obtained from the quantitative and qualitative analysis is presented below.

4. Discussion and Conclusion

According to the analysis, the results can be divided into qualitative and quantitative parts. In the quality of the high -profile coefficients of the promises of each of the interpreters of the Mituan, the result of the factors of the twelve agents of the higher importance of the Iranians, for the beneficiaries of the Iranians, in the field. They are important in the opinion of experts. This shows that in order to continue using information systems, Iranian organizations should pay special attention to the human variables within the organization, and in addition, before choosing information systems that are compatible with the laws, they should also be able to have an opinion on the quality of the document. The investment made in this field should be taken advantage of. In the next order, from the point of view of abundance and repetition of strategies, the role of the system and the maturity of the organization have a higher priority, and this means that the organizations are choosing and designing strategies based on the maturity of their own organization and choosing information systems. can witness more use of these systems, and in addition to this topic, there is a lot about the role of information systems, which means that the more the system plays a prominent role in the processes of the organization, the more the organization should pay attention to its continuity and convenience. don't leave in the analysis of the results of the quantitative section and considering the concepts that have not been approved by the " System of Communications and Information Technology", it can be concluded that:

• The non-confirmation of "inconsistency between individual goals and organizational goals" in the factor "users" means that in the statistical research community, the goals of users are aligned with the goals of the organization for change and transformation in the system, and therefore cannot be considered as a factor.

• The non-confirmation of the "fear of revealing performance weaknesses" in the "transparency" factor means that in the research statistics community, avoiding the identification of performance weaknesses due to the creation of greater transparency resulting from system change cannot continue this organization. Driving information systems.

• The non-confirmation of the "role of transfer costs" in the factor of "rulers" means that in the statistical community of research, as a government organization, transfer costs will not play a role in making continuity decisions by the rulers.

• Failure to confirm "the role of the information system in the vital factors of success" in the "role of the system" factor

This means that in the research statistics community, the use of the system in the vital factors of success cannot lead to continued use.

• Non-approval of "creating intellectual property rules for information systems" in the "law" factor means that the rules of intellectual property in this organization cannot lead the organization to continue using the system.

In addition, according to the ranking of concepts based on the four groups of the "McFarlan" matrix in the " System of Communications and Information Technology", the following results were obtained:

• In the strategic category, "the sensitivity of the information systems to achieve the organization's goals" has a higher importance for successive decisions, and this means that the organization should decide on the sensitivity of the operating system in this category of activities before making decisions. pay attention

• In the category of key operations, "the large size and age of the system for change in the case of technological change" has a higher importance, and this means that if the organization is faced with technological change in its main operation, the size and age of the system will change. In different parts of the organization, for making decisions in this regard, it should be fashionable.

• In the support group, "managers' lack of understanding of the role of information systems" has been recognized as a higher priority, and this means that managers in the support activities group do not believe in the role of information systems. Therefore, before any kind of decision in this field, a correct understanding of information

systems should be created in the managers of this category so that with the targeted continuation of the system, the managers can achieve the goals of the organization through the information system.

• In the potential category, "lack of motivation and sense of curiosity in employees" has been recognized as having a higher importance in the intention to continue. And this means that in the set of research and development activities, the lack of motivation and the lack of support of the workers will be an obstacle for change and the continuation of the status quo.

Based on this, the organizations that provide information systems should consider the needs of each of these four categories in the design and development of marketing systems and strategies and the regulation of contracts, and the system officials should also consider the strategies, strategies and designers of the project. The employment of information systems and the regulation of contracts based on the different stages of the life cycle of information systems, and the degree of maturity of the organization's processes, should pay attention to the role of each of these concepts. The practical results of this study for designers and companies providing information systems, managers and practitioners in the field of information systems in organizations are described below:

Managers should have a correct understanding of the necessity of information systems in the pursuit of achieving goals based on the feeling of need and avoid indifference and lack of understanding of the necessity of the system;

• Part of the intention of continuity in organizations can be considered as a result of the short life of managers. Because the managers in the short period of time of their management may be willing to continue the system due to the high costs of the information system instead of the information system and the related difficulties.

Considering the role specified for the organization's maturity, the maturity of processes and strategies in the formation of successive decisions, it is necessary that organizations pay attention to the organization's maturity and its current processes in the formulation of strategies for the organization's goals, and its information systems. Select the neck.

• Organizations should choose their information systems in line with the laws, so that in the long term, the system will benefit from their investments in this field;

In order to protect the market of their products in the long term, the organizations that provide these systems pay attention to the user's needs, including the maturity of the organization and its processes, and pay attention to the role of moving costs in the user's request for long-term use. In fact, the obtained results should give the information system providers and designers the opportunity to start redesigning their strategies by looking at the product from the user's point of view.

The obstacle to the change of their information on the products of the competing products. The corporations are due to the determination and the order of the changes and the specific priorities of the users, which should be used to do so. Competing products. In the end, it is worth mentioning that the current research is innovative in the following fields compared to the previous researches: contrary to the existing trend in the researches related to the field of information systems that individual, emotional and short-term theory factors are studied in the market field. Failure to accept information from the theoretical techs of technology and the process of processing in the field of information on the information of the information reviewed, the research is now in charge of the use of the Cells, the Cells and the Corporate Costs.

• Based on the institutional theory and contrary to the existing researches, macro-influential factors in the concept of continuity of information systems have been examined and considered in the extraction model;

• According to the theory of favoring the status quo, a part of the tendency to preserve the status quo can be considered as irreversible costs, and the current research based on this theory with a comprehensive analysis on the cost of relocation as irreversible costs has paid;

As mentioned in the previous paragraph, by analyzing the content of relocation costs while presenting a general classification of relocation costs, these costs are divided into two categories of positive and negative relocation costs. This classification has not been discussed in the subject literature so far;

• According to what was presented in Table 4, the factors of the role of the system, rulers, technological change, law, organizational maturity and transparency have been identified as those influential factors in the concept of continuity, which are discussed in the researches presented in this field.

In conclusion, the findings of this study highlight both qualitative and quantitative factors critical to the sustained use of information systems within Iranian organizations. Qualitatively, high-priority elements, such as human-centered variables, are emphasized by experts, underscoring the importance of organizational maturity, legal compatibility, and the user's perceived quality of the systems. This suggests that to ensure continued use, organizations should prioritize user experience, system compatibility with organizational goals, and internal alignment with relevant legal standards. Furthermore, organizations should tailor information systems strategies to their maturity level, organizational processes, and goals. The quantitative analysis reveals nuanced insights, such as the lack of significant influence of factors like "inconsistency between individual and organizational goals," indicating alignment between user and organizational intentions. Additionally, transparency and the organization's maturity level were found to influence information system continuity significantly. In particular, the system's maturity is critical in shaping how effectively organizations leverage information systems to drive organizational success. Notably, the study aligns with McFarlan's matrix in categorizing factors affecting information system sustainment, highlighting the sensitivity of strategic operations, system size and age, managerial understanding, and employee motivation as key elements. This segmentation provides actionable insights for system designers and suppliers, encouraging them to align system features and contracts with organizational maturity and user priorities. This research advances prior studies by incorporating institutional theory and exploring macro-influential factors, particularly the cost of change as it relates to the status quo. The study's insights on relocation costs, especially the novel classification of positive and negative costs, provide a fresh perspective on sustaining information systems. The practical implications emphasize that managers must understand the long-term benefits of information systems, recognize the role of organizational maturity, and align with legal frameworks to optimize continued usage.

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