

Exploring the Application of ISSM and TTF Theories: A Literature Review

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Abstract—The Information System Success Model (ISSM) and Task-Technology Fit (TTF) theories provide valuable frameworks for assessing how effectively technology supports tasks within a system. These models are widely recognized and have been applied separately in numerous studies. However, there has been limited effort in the existing literature to integrate ISSM and TTF into a cohesive framework. This study aims to (1) review the relevant literature applying ISSM and TTF in higher education settings, (2) determine which model is more frequently utilized, and (3) evaluate studies that have integrated both models, with a particular focus on digital libraries. The results indicate that most research has centered on theory development or practical real-world applications, especially in public universities. The integration of ISSM and TTF in digital library contexts remains relatively rare despite their potential to complement one another. ISSM assesses system success through dimensions like service quality, user satisfaction, and net benefits, while TTF focuses on how well the technology fits the tasks it is intended to support, making it highly relevant for evaluating digital services. This study contributes to a deeper understanding of how ISSM and TTF are applied, offering valuable insights for future research. It highlights the untapped potential of combining these models to enhance technology adoption, user satisfaction, and overall system performance in digital libraries and other educational settings. By identifying research gaps, this paper lays the groundwork for further exploration and refinement of these theoretical frameworks to improve technology implementation in education.

Keywords—System success; digital libraries; IT effectiveness; user satisfaction; technology adoption.

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I. INTRODUCTION

Technology has become an essential and integral part of our civilization, deeply ingrained in our daily lives. Various technologies continue to influence and be influenced by altering how individuals and organizations operate and perceive [1]. Universities often use digital libraries to add value by improving and supporting individual and collaborative work. Nevertheless, this requires a substantial investment of resources for acquiring, implementing, and utilizing various technologies [2]. Therefore, an often-raised inquiry is the magnitude of the value that digital libraries generate for universities. Evaluating the worth of technology in a system is difficult because of the numerous interconnections among its elements, such as technology, individuals, systems, activities, and processes [3]. Due to this, various alternative methods have been proposed to assess the impact generated by technology. For example, the Information

Systems (IS) Success Model and the Task-Technology Fit (TTF) Theory are two ideas that are generally recognized in the field of Information System (IS) research [4].

There is widespread consensus that the Task-Technology Fit (TTF) theory represents a substantial step forward in the field of information systems [5]. Through the use of TTF, businesses can evaluate how effectively their technology is serving their needs [6]. The "notable increase in the use of TTF theory" was pointed out by [7]. The study addresses how this tendency has maintained over the years, resulting in increased annual document production and a greater spectrum of environments applying the principle.

According to the Task-Technology Fit Theory, the degree to which the functions of technology match the jobs it is meant to perform determines how effective technology is in companies [8]. The theory says users are more effective and satisfied when technology is well-matched with their jobs [9]. The IS Success Model, created by [10], on the other hand,

gives a structured way to judge how well information systems work across six interconnected areas: service quality, information quality, system quality, utilization, user happiness, and net benefits [11]. This model is commonly used to assess how IT affects business outcomes and customer satisfaction.

This comprehensive analysis examines the practical implementation of the Information Systems (IS) Success Model and the Task-Technology Fit (TTF) Theory, providing a detailed investigation into how these frameworks contribute to the comprehension, assessment, and improvement of technology applications in higher education environments. This introduction concisely summarizes such an evaluation's significance, objectives, and expected outcomes. The primary objectives of this review were (1) to identify and analyze relevant literature that applies the TTF and ISSM models within the context of higher education, (2) to determine which of these theories is the most frequently utilized, and (3) evaluate studies that have integrated both ISSM and TTF in the context of digital libraries.

By examining the combination of the IS Success Model and the Task-Technology Fit (TTF) Theory, a more precise insight will be gained into how these different frameworks work together to assess the impact of technology on the performance of universities. The evaluation yielded valuable insights that can equip practitioners with knowledge about optimal strategies for implementing and overseeing technology. This ensures that expenditures in technology align with the organization's aims and meet the needs of its users. The discovery of uncharted ground through the cataloging of research gaps has the potential to inspire the development of novel theoretical frameworks or refine existing ones.

II. MATERIALS AND METHOD

This study employed a narrative analysis of relevant literature. Narrative analysis is often motivated by a scarcity of relevant literature or the author's deep emotional connection to a specific literary piece [12]. Google Scholar databases were searched to ensure that the study had comprehensive coverage. The selection process involved assessing titles, abstracts, and full texts to include research utilizing these models. This review incorporated the IS Success Model, TTF Theory, and their applications. It also explored the combined models of the IS success model, task-technology fit theory, framework, and digital library. In the initial phase of the investigation, a total of 2,750 records were retrieved.

In the next phase, we removed any irrelevant items. Only scholarly articles written in English and subjected to peer review from 2019 to 2024 were included in the study. Before reading the complete material, a thorough review was conducted of the titles and abstracts of the articles obtained from the databases. The articles deemed ineligible were those that lacked relevance to the educational context. Eligible articles were limited to those that pertained to using the IS success model or task technology fit theory in academic settings. Through a thorough screening process that considered specific criteria for inclusion and exclusion, it was discovered that several publications were linked to using either both theories as a combined framework or applying one in an educational context. Table 1 thoroughly compiles the papers assessed for inclusion in this study.

TABLE I
ANALYSIS PROCESS OF RELATED LITERATURE

No	References	objectives	Theories/ model	Dependent variables	Independent variables	Method	outcomes	Limitation	Future studies
1.	[13]	To examine the behavior of Internet banking users about their continued usage of Internet banking services. It specifically focuses on the integration of two widely recognized information system theories,	Task technology fit (TTF) and technology continuance theory (TCT).	Continuance Intention to use Internet banking services	Task Characteristics, Perceived Ease of Use, Task Technology Fit, Technology Characteristics, Confirmation (CON), Perceived Usefulness, Satisfaction, Attitude	Survey	The results show that to increase the potential for Internet banking users to continue using the service, managers and policymakers should prioritize user satisfaction, perceived utility, and expectation confirmation.	There is a need to investigate real use of banking services	Including motivational elements like self-efficacy, intrinsic motivation, and extrinsic motivation in the current research model is better.
2.	[14]	To propose content characteristics as a novel factor influencing fit.	Task technology fit (TTF)	Fit and performance	Content characteristics Task Characteristics Technology Characteristics	Survey	The findings corroborate that including content features significantly enhances the ability to explain the task technology fit.	Although this study used content characteristics as a new determinant, it does not give a complete understanding of how fit determinants interact with each dimension of fit.	Therefore, it would be highly beneficial to conduct research in the future to analyze the connections between the three factors that influence compatibility and the three aspects.

No	References	objectives	Theories/ model	Dependent variables	Independent variables	Method	outcomes	Limitation	Future studies
3.	[15]	To evaluate the cause-and-effect relationship between five constructs: Task Technology Fit, social norms, utilization, satisfaction, and performance impacts.	Technology Utilization, satisfaction, and performance model (tuspem)	Performance Outcome	Social Norms, Satisfaction, Utilization, Task Technology Fit	Survey	To demonstrate robust evidence of a positive correlation between TTF (Time to Task Fulfilment) and satisfaction. Specifically, the association between "post-usage satisfaction" and performance was more robust than the relationship between TTF and performance.	Users' satisfaction in information systems studies is influenced by their usage rather than the traditional concept of satisfaction stimulating usage before it.	Additional research should investigate the impact of social norms
4.	[16]	To analyze the impact of task-technology fit (TTF) on the utilization of information systems and its influence on user performance and satisfaction.	Task technology fit (TTF)	User Satisfaction	Task-Technology Fit, Usage, User Performance.	Survey	As the utilization of information systems increases, so do its users. Conversely, as the user's performance improves, so does the utilization of information systems.	This study only looks at the front desk staff of five-star hotels.	It is still necessary to develop additional examples, such as complete variables and indicators on TTF, individual characteristics, information quality, and system quality.
5.	[17]	To evaluate the impact of E-CRM on employees.	Information System (IS) success model and Task Technology Fit (TTF) framework.	Employee performance	Task characteristics, technology characteristics Task-Technology Fit, Use, satisfaction, system quality, information quality, service quality	Survey	Utilization of resources and user satisfaction are important factors that can predict individual success. Additionally, the study highlights the significant impact of TTF (Time to Task Failure) on employee performance.	Since user satisfaction supports usage, the studies demonstrated that E-CRM system quality does not affect usage.	More studies are needed on user performance when using technology.
6.	[18]	To examine the efficacy of academic digital libraries in meeting students' needs by establishing a correlation between their satisfaction.	TAM [19] and Information Systems Success Model [20]	User satisfaction	Usefulness, ease of use, service quality, system quality, information quality, and Digital Library Collection	Survey	All proposed factors have strong and statistically significant positive associations with students' satisfaction.	However, as most predictors are associated, a significant multicollinearity problem is anticipated during the modeling phase.	There is a need for more research about satisfaction in the context of digital libraries.
7.	[21]	To explore the relationship between user satisfaction and the quality of digital resources, usability, and PI in the Higher Education Commission digital library of Pakistan	Information Systems Success Model [20], TAM [19], and Unified Theory of Acceptance and Use of Technology [22]	User satisfaction	Quality of digital resources, personal innovativeness, generic useability of digital library	Survey	User satisfaction positively correlates with PI, digital resource quality, and generic DL usability. This study found personal factors to be key determinants of DL adoption.	Effective adoption is influenced by users' satisfaction, quality image, and experience.	should consider individual traits and resource quality to ensure effective adoption of DL.

No	References	objectives	Theories/ model	Dependent variables	Independent variables	Method	outcomes	Limitation	Future studies
8.	[2]	To analyze user contentment on MSU Digital Library using ISSM and TTF models and identify factors influencing satisfaction and user intention to continue using the library.	Information System (IS) success model and Task Technology Fit (TTF) framework	User satisfaction	System Quality, information quality, task technology fit	Survey	This study confirmed prior findings in the sector, using ISSM and TTF to assess Digital Libraries.	The study mentioned that e-book subscriptions positively impact digital library usage; however, the other factors' impacts were not realized.	More studies are needed to apply another suitable theory.
9.	[23]	To examine how task-technology fit affects college students' views using the mobile library app Line@Library towards ubiquitous library-supported learning.	Task-technology fit (TTF) and TAM [19]	Using the mobile library app	Ease of use, usefulness, and affection of AML.	Survey	The findings highlight the significance of task-technology fit in shaping students' perspectives on mobile learning. When students tried to utilize the app to finish assignments or answer issues, the "technology characteristics" factor was considered.	The study emphasizes the task technology fit.	Future studies can focus on other factors, such as self-efficacy and user privacy as independent variables.
10.	[24]	To assess the attitude of Information Technology (IT) managers towards their intention to utilize Educational Management Information Systems (EMIS).	Delone Mclean Model (D&M) [20] and Task Technology Fit (TTF)	Intention to use Educational Management Information Systems (EMIS)	Task Characteristics, Technology Characteristics, Information Quality, and Systems Quality,	Survey	The results of this investigation have significant implications for policy analysts, educational leaders, decision-makers, and IT managers.	The study emphasized the general quality of the educational management system only.	There is a need for more studies on other aspects of the educational management system

Table 1 presents the papers in the order they were published, arranged chronologically. A total of 10 articles were published: three in 2019, one in 2020, four in 2021, one in 2022, and one in 2023. All these articles are related. However, even though 2024 is included, there was a decline in the use of TTF and ISSM studies compared to 2021. The evaluation method in this study started by reviewing previous research and identifying the components used in models to assess user intention to use and satisfaction. [13] examine the behavior of Internet banking users regarding their continued usage of Internet banking services. It explicitly integrates two widely recognized information system theories, task technology fit (TTF) and technology continuance theory (TCT). The dependent variable is Continuance Intention to use Internet banking services

The independent variables were Task Characteristics, Perceived Ease of Use, Task Technology Fit, Technology Characteristics, Confirmation (CON), Perceived Usefulness, Satisfaction, and Attitude. The main instrument used to collect data was a survey. The results show that to increase Internet banking users' potential to continue using the service,

managers and policymakers should prioritize user satisfaction, perceived utility, and expectation confirmation.

The study recommended investigating the real use of banking services. Additionally, it is better to include motivational elements like self-efficacy, intrinsic motivation, and extrinsic motivation in the current research model. Another study by [14] proposed content characteristics as a novel factor influencing fit. The study variables are task technology fit (TTF)Fit and performance Content characteristics Task Characteristics, Technology, and Characteristics. A survey was distributed to collect data. The findings corroborated that including content features significantly enhances the ability to explain the task technology fit. Although this study used content characteristics as a new determinant, it does not give a complete understanding of how fit determinants interact with each dimension of fit. Therefore, doing research in the future to analyze the connections between the three factors that influence compatibility, and the three aspects would be highly beneficial.

A study by [15] was carried out to evaluate the cause-and-effect relationship between five constructs: Task Technology

Fit, social norms, utilization, satisfaction, and performance impacts. technology utilization, satisfaction, and performance model (TUSPEM). Task Technology Fit theory was implemented as a theoretical base. A survey was utilized to collect data. The outcomes showed robust evidence of a positive correlation between TTF (Time to Task Fulfilment) and satisfaction. Specifically, the association between "post-usage satisfaction" and performance was more robust than the relationship between TTF and performance. Users' satisfaction in information systems studies is influenced by their usage rather than the traditional concept of satisfaction stimulating usage before it. Additional research should investigate the impact of social norms. A study by [16] analyzed the impact of task-technology fit (TTF) on the utilization of information systems and its influence on user performance and satisfaction.

Task Technology Fit (TTF) was employed to evaluate user satisfaction. A survey was the primary tool used to gather data. As the utilization of information systems increases, so do its users. Conversely, as the user's performance improves, so does the utilization of information systems. The study was limited since it only looked at the front desk staff of five-star hotels. Thus, it is still necessary to develop additional examples, such as complete variables and indicators on TTF, individual characteristics, information quality, and system quality.

A study by [16] evaluated the impact of E-CRM on employees. The utilization of resources and the satisfaction of users are essential factors that can predict individual success. Additionally, the study highlighted the significant impact of TTF (Time to Task Failure) on employee performance. Since user satisfaction supports usage, the studies demonstrated that E-CRM system quality does not affect usage. More studies are needed on user performance when using technology. A study by [18] examined the efficacy of academic digital libraries in meeting students' needs by establishing a correlation between their satisfaction. Two main theories were combined and made the study framework, which is TAM [19] and Information Systems Success Model [20]. The study assessed user satisfaction through usefulness, ease of use, service quality, system quality, information quality, and Digital Library Collection. A survey was conducted to collect data. The results indicated that all the proposed factors have strong and statistically significant positive associations with students' satisfaction. However, it was anticipated that a significant multicollinearity problem would occur during the modeling phase, as most predictors are associated. There is a need for more research into satisfaction in the context of digital libraries.

A study by [21] explored the relationship between user satisfaction and the quality of digital resources, usability, and PI in the Higher Education Commission digital library of Pakistan Information Systems Success Model [20], TAM [19], and Unified Theory of Acceptance and Use of Technology [22]. The study assessed user satisfaction with the quality of digital resources by personal innovativeness and generic useability of digital libraries. A survey was utilized to gather data. The results showed that user satisfaction positively correlates with PI, digital resource quality, and generic DL usability. This study found personal factors to be critical determinants of DL adoption. Effective adoption is influenced

by users' satisfaction, quality image, and experience. The study recommended that individual traits and resource quality be considered to ensure effective adoption of DL. A study by [2] analyzed user contentment on MSU Digital Library use using ISSM and TTF models and identified factors influencing satisfaction and user intention to continue using the library. The information system (IS) success model and Task Technology Fit (TTF) framework were combined to form the study's theoretical basis. The dependent variable was user satisfaction, while System Quality, information quality, and task technology fit were the study's independent variables. A questionnaire was utilized as the main instrument to collect data. This study confirmed prior findings in the sector, using ISSM and TTF to assess Digital Libraries. The study mentioned that e-book subscriptions positively impact digital library usage; however, the impact of other factors was not realized.

However, there is a need to conduct more studies while applying other suitable theories. A study by [23] examined how task-technology fit affects college students' views using the mobile library app Line@Library toward ubiquitous library-supported learning. Task-technology fit (TTF) and TAM were combined to create a theoretical framework for the study to assess the usage of the mobile library app. Various variables were utilized in the study model. For example, ease of use, usefulness, and affection of AML. The data were collected by using a survey. The findings highlighted the significance of task-technology fit in shaping students' perspectives on mobile learning. When students tried to utilize the app to finish assignments or answer issues, the "technology characteristics" factor was considered. The study emphasizes the task technology fit. Future studies can focus on other factors, such as self-efficacy and user privacy, as independent variables. A study by [24] assessed the attitude of Information Technology (IT) managers towards their intention to utilize Educational Management Information Systems (EMIS). Delone Mclean Model (D&M) and Task Technology Fit (TTF). The intention to use Educational Management Information Systems (EMIS) was the dependent variable, while Task Characteristics, Technology Characteristics, Information Quality, and Systems Quality were the critical independent variables. A survey was utilized to collect data. The results of this investigation have significant implications for policy analysts, educational leaders, decision-makers, and IT managers. The study emphasized the general quality of the educational management system only. Thus, there is a need for more studies in other aspects of the academic management system.

III. RESULTS AND DISCUSSION

The review suggested that a significant number of the articles submitted for consideration center around task technology and the information systems success model in the context of digital libraries. The primary emphasis of the digital library is on addressing users' needs and facilitating access to information across various fields of knowledge. From this viewpoint, expediting, improving, and simplifying education and training processes by incorporating a high-quality digital library is essential. Most studies in this field primarily examine the usage intentions of digital libraries and educational resources in public universities [25], while private

universities receive comparatively less attention. For instance, [2], [18], [15], and [20]. All focus on the user's intention to use the digital library in public universities, while the same issues have been overlooked in private universities.

On the other hand, two inspiring studies have been carried out in educational management system setting [24], [14]. The study combined the TTF theory with the IS model to evaluate the educational managers' attitudes regarding using the educational management information system EMIS. The EMIS system enables the ongoing assessment of the educational system's performance. This involves monitoring student outcomes, evaluating teacher performance, and assessing the impact of different programs and policies. This process aids in identifying areas that require improvement and evaluating interventions' effectiveness. Park's study indicated that new constructs with content characteristics can examine web-based learning management systems. This study proposed content characteristics as a novel factor influencing fit and conducted an empirical examination alongside the two established determinants: task and technology characteristics. The study involves 105 users of a web-based learning management system.

Another setting for applying TTF theory is in the bank setting. A study by [13] integrated two main theories. They are task technology fit and technology continuance theory (TCT). Data was collected from 360 Internet banking users of commercial banks across Pakistan. Another study by [16] in the hotel setting. Conversely, this study determined that information systems and user performance do not significantly influence user satisfaction. Another interesting study by [15] was conducted to assess the Open educational resources (OER).

By acquiring a deep understanding of user intent, behavior, and satisfaction, these institutions have the potential to completely transform user experiences, rendering them more effortless, efficient, and, ultimately, more gratifying. This review aims to determine digital libraries' predominant models and theories. According to the review's findings, the task-technology fit (TTF) model was utilized the most frequently in the prior studies mentioned above.

While the Information System (IS) success model comes in the second rank of application in the past studies of this review [2], [17], [18], [21]. The Communication Theory, Technology Acceptance Model (TAM), and Unified Theory of Acceptance and Use of Technology (UTAUT) are ranked last. In the context of digital libraries, the third purpose of this review is to analyze the research that merged TTF and ISSM models. While there is only one study that combined these two theories, this review will evaluate the studies that combined them [2]. TTF and ISSM models enable an effective and interactive evaluation of user behavior and satisfaction, so academics from various subjects are motivated to adopt them as data collection tools.

It is crucial to acknowledge and not underestimate the difficulties associated with innovation and change, whether for students or teachers. Current users are considered digital natives and extensively employ various forms of technology in their everyday lives. The data presented here suggested that digital library settings are not often places where TTF and ISSM are implemented [26]. Future researchers may focus on expanding the data-gathering models to include more

variables. Due to their ever-evolving optional features, such as enhancing the user interface, digital libraries require periodic evaluations.

IV. CONCLUSION

It is clear from studying how digital libraries and other settings have applied the Information Systems Success Model and Task-Technology Fit Theory that these models are priceless for evaluating and improving the efficacy of digital services. By concentrating on system quality, content quality, and service quality, the ISSM has laid a solid framework for assessing user contentment and the total effectiveness of digital library systems [27]. These criteria are crucial for ensuring that digital libraries adequately fulfill the requirements of their users and successfully attain their intended objectives. The Task-Technology Fit Theory is essential for ensuring that the technology used in digital libraries is well-suited to the tasks they are meant to facilitate [28]. Ensuring proper alignment is essential for optimizing user efficiency and satisfaction, directly affecting their ability to utilize the provided resources effectively. Despite some limitations, this study has made a commendable effort to provide a comprehensive conclusion. The utilization of the ISSM model was found to be less effective compared to the TTF theory in the digital library, consistent with [29]. Previous studies failed to consider the various factors that could influence user satisfaction in digital libraries. Further research is necessary to explore user satisfaction in the context of digital libraries, as these libraries have evolved and require examination. Hence, it is imperative for upcoming studies to prioritize integrating novel factors that impact user satisfaction, such as privacy, computer self-efficacy, word of mouth, and the perceived reputation of the university [30]. This strategy will significantly improve the pertinence of future studies. The first search for relevant articles was confined to a solitary database, hence restricting the search for pertinent articles to that specific database. This study dramatically contributes to the existing understanding of the use of TTF and ISSM in digital libraries. Despite some limitations, the study's findings hold value and contribute meaningfully to the ongoing research on using TTF and ISSM. When examining the practical applications of these two theories. The scarcity of scholarly articles in peer-reviewed journals and the neglect of reports, grey literature, and online sources have hindered research progress. Further research can be conducted on the studies that utilize TTF to identify patterns in the approaches used across different application categories, contexts, and technologies.

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