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THE EFFECT OF OVERALL QUALITY AND SELF-EFFICACY ON LEARNERS' FLOW AND SATISFACTION IN POST-PANDEMIC DISTANCE LEARNING

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ABSTRACT

The objective of this study is to determine the effect of overall quality and self-efficacy on the flow and satisfaction of distance learning learners in the post-pandemic period in public sector organizations. Research data were collected through an online survey of distance learning participants in public sector organizations. A total of 701 data were analyzed. The data analysis method used was CB-SEM using Lisrel 8.80. This study found that system quality, information quality, and flow significantly and positively affected the satisfaction of distance learning participants. Self-efficacy, information quality, and service quality also have a positive and significant effect on the satisfaction of distance learning participants through the mediation of flow. Many previous studies have explored the effect of overall quality on online learning satisfaction in school or universities. However, this study is different in that it focuses on the context of public sector organizations by adding self-efficacy variables as internal factors of learners and including flow variables as mediators, considering that learners and instructors are not in the same location during distance learning. According to the findings from the conducted research, this study recommends that education and training organizers in the public sector can pay attention to factors that affect learner satisfaction in distance learning which include self-efficacy, overall learning quality, and flow in learning.

KEYWORDS *Distance Learning, Flow, Overall Quality, Satisfaction, Self-Efficacy.*

INTRODUCTION

The covid-19 pandemic has brought significant ramifications on business, society, and education around the world (Jung & Shin, 2021). Many educational institutions have closed due to social distance policies so that all activities related to learning are carried out without face-to-face meetings (Kim & Park, 2021). Most universities around the world are changing distance learning models to limit physical human interaction to handle the spread of the coronavirus (Hongsuchon et al., 2022). Distance learning is defined as learning conducted by uploading materials

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onto a learning platform and utilizing technology like Zoom and other applications, so that teachers and students can connect virtually for live teaching sessions (Hettiarachchi et al., 2021).

Distance learning provides several benefits such as reduced transportation costs, better use of time, and can also reduce carbon emissions as there is no need to drive to the learning location (Jung & Shin, 2021). The flexibility and benefits of online learning make it likely that online learning methods will continue even after the pandemic ends (Hongsuchon et al., 2022). This also applies to public sector organizations in Indonesia. One of public sector organization in Indonesia that provides training is still conducting distance learning after the pandemic ended. The number of distance learning courses organized by this public sector organization in 2023 is greater than the number of classical courses.

However, besides the perceived benefits of distance learning, there are also perceived disadvantages. In distance learning, learners are in a different place from the instructor so there is a possibility that learners cannot concentrate in class on online learning (Jung & Shin, 2021). There are several factors that cause dissatisfaction in distance learning, namely distraction (72%), poor interaction (62%), and psychological problems such as anxiety, boredom (60%) (Maqableh & Alia, 2021). The main orientation of public sector organizations is to deliver services to the community or its users, so that service user satisfaction becomes the main thing. Learner satisfaction is crucial for the effectiveness of distance learning (Xiao & Li, 2021).

Several theories have emerged to elucidate user behavior concerning information technology, including the technology acceptance model (TAM), the information system success model (ISSM), and the integrated theory of technology acceptance and use (Aldholay et al., 2018). Islam (2013) elucidates that ISSM offers advantages in assessing information technology usage (Aldholay et al., 2018). The ISSM, devised by DeLone and McLean, incorporates system quality, information quality, and service quality variables as determinants influencing user satisfaction (Petter & McLean, 2009).

There are many previous studies that explored the impact of overall learning quality on user satisfaction (Aldholay et al., 2018; Jung & Shin, 2021; Pham et al., 2019). Some of these studies have indicated a significant positive correlation between overall learning quality and user satisfaction (Aldholay et al., 2018; Jung & Shin, 2021; Pham et al., 2019). However, findings from Shim & Jo (2020) suggest that system quality does not exert a significant effect on user satisfaction, while Salam & Farooq (2020) argue that information quality similarly lacks a significant impact on user satisfaction. The majority of these studies primarily focus on higher education contexts (Aldholay et al., 2018; Jung & Shin, 2021; Pham et al., 2019), with only a limited number exploring the public sector (Salam & Farooq, 2020; Shim & Jo, 2020). This study introduces the variable of self-efficacy as an internal learner factor influencing user satisfaction. Individuals with high self-efficacy levels are inclined to strategize, seek assistance, and self-motivate, leading to enhanced learning focus and potentially increased satisfaction (Xiao & Li, 2021). Given that distance learners are physically separated from instructors and that participation in this study's distance learning program is mandatory, the flow experience is also examined as a variable affecting learner satisfaction. Flow theory has been employed

to address issues related to student motivation, engagement, satisfaction, and performance in e-learning and virtual learning environments (Goh & Yang, 2021).

The purpose of this study is to examine the effect of overall learning quality and self-efficacy on the flow and satisfaction of distance learning participants in the post-pandemic era in public sector organizations. Using a quantitative approach, this study surveyed distance learning participants at a public sector institution in Indonesia. This research provides theoretical and practical contributions. The theoretical aspect is to provide new insights and knowledge related to how system quality, information quality, service quality, self-efficacy, and flow affect the level of satisfaction of distance learning students. From the practical side, this research aims to provide input for distance learning provider organizations in formulating human resource management policies that pay attention to factors that affect student satisfaction in distance learning.

The subsequent section comprises a literature review, delving into the theoretical underpinnings, prior research findings, and hypotheses pertinent to this study. Following that, the research methodology will be delineated, followed by data analysis. The final section will provide a conclusion that addresses the objectives of this research.

Distance learning is defined as learning conducted by uploading materials onto a learning platform and utilizing technology like Zoom and other applications, so that teachers and students can connect virtually for live teaching sessions (Hettiarachchi et al., 2021). According to Alla et al. (2013), distance learning systems provide online teaching-learning environments both synchronously and asynchronously that can facilitate teacher-student interaction and can share materials with each other (Su & Guo, 2021). Distance learning is categorized into real-time and non-real-time classes (Jung & Shin, 2021). The distance learning methods applied in this study also include synchronous and asynchronous methods. Synchronous learning method is conducted by using video conference media (such as zoom, team) and group chat. While asynchronous learning method is implemented by using Learning Management System (LMS) and/or Google website.

Delone & McLean (1992) described the information system success model and conducted an analysis related to the influence between system quality, information quality, level of use, user satisfaction, individual performance, and organizational performance. Along with the development of the environment, service quality variables were added (Petter & McLean, 2009). Aldholay et al. (2018) explained that overall quality includes system quality, information quality, and service quality. Their findings indicated a positive relationship between overall quality and both satisfaction and actual use.

System quality is the system used by learning providers to manage distance learning services (Jung & Shin, 2021). System quality pertains to the functionality of a system, encompassing its flexibility, reliability, sophistication, and responsiveness (X. Huang & Zhi, 2023). This aligns with Petter & McLean's (2009) definition, which describes system quality as the user's perception of the system's ease of use, ease of learning, ease of connection, and enjoyment in use. Cheng et al. (2013) state that system quality is a major antecedent to technology use and user satisfaction (Aldholay et al., 2018).

Information quality is a basic element that supports the success of learning and can affect user satisfaction (Jung & Shin, 2021). In the context of online learning, information quality refers to users' perception of academic information available through the system as being accurate, adequate, reliable, relevant, up to date and comprehensive (Aldholay et al., 2018). Martins et al. (2019) emphasize that learning providers must ensure all information shared on their platforms is accurate, reliable, and well-organized. The goal of information quality is to deliver relevant and accurate information to users (Shahzad et al., 2021).

According to Shim & Jo (2020), service quality pertains to the overall support given to users, including responsiveness and reliability. Shahzad et al. (2021) reinforce this by defining service quality as the efficiency which providers address user queries. Effective management of service quality necessitates professional staff, stable infrastructure, and robust administrative support, as it encompasses the comprehensive operations management support offered by service providers (Jung & Shin, 2021).

Kreitner & Kinicki (2013) define self-efficacy as an individual's belief in their ability to successfully complete tasks. In the context of distance learning, self-efficacy refers to a person's confidence in their ability to accomplish learning tasks using online learning technology (Xiao & Li, 2021). Self-efficacy is crucial because individuals with high self-efficacy tend to plan, seek assistance, and motivate themselves to concentrate on learning, positively influencing their flow experience and potentially enhancing their learning satisfaction (Xiao & Li, 2021).

Csikszentmihalyi first introduced the concept of flow in 1975, describing it as a state where individuals are fully engaged and committed to an activity (Cheng, 2020). In the context of learning, flow is a psychological mechanism that enhances learners' participation and concentration, potentially leading to higher academic achievement (Jung & Shin, 2021). Dos Santos et al. (2018) noted that flow theory has been applied to address issues related to student motivation, engagement, satisfaction, and performance in e-learning and virtual learning environments (Goh & Yang, 2021).

Student satisfaction is a subjective assessment of students who state whether they are happy or not with the services provided (Pham et al., 2019). Learner satisfaction reflects the users' perception of the success and outcomes achieved by meeting their needs (Jung & Shin, 2021). Distance learning satisfaction is the cumulative individual experience that interacts with the entire learning process over time, leading to an overall assessment of the distance learning services (Xiao & Li, 2021).

Cheng (2014) conducted a study to investigate the intention to use continuous blended e-learning among nurses in Taiwan. The findings indicated that system quality positively and significantly influenced perceived benefits, confirmation, and flow. Similarly, Xiao & Li (2021) explored the impact of platform quality, teacher expertise, social interaction, and self-efficacy on distance learning satisfaction, with flow acting as a mediating variable moderated by context use. Their results demonstrated that platform quality positively and significantly affects flow in online learning. Jung & Shin (2021) studied the relationship between the quality of online distance learning and both flow and learner satisfaction in South Korea. Their findings

confirmed a positive and significant effect of system quality on flow. Consequently, the first hypothesis in this study is:

H1: System quality has a positive effect on the flow of distance learning participants.

Information quality significantly impacts flow (Cheng, 2014). Jung & Shin (2021), who investigated the effect of distance learning quality on student flow and satisfaction at universities in South Korea, found similar results. Their research demonstrated a positive and significant relationship between information quality and flow. Therefore, the second hypothesis in this research is:

H2: Information quality has a positive effect on the flow of distance learning participants.

Cheng's (2014) research related to exploring the intention to use continuous blended e-learning in nurses in Taiwan shows the results that service quality contributes significantly to flow. Jung & Shin (2021) provides further evidence, indicating that the effectiveness of distance learning services significantly impacts students' learning experience. As a result, the third hypothesis of this investigation can be formulated as follows:

H3: Service quality has a positive effect on the flow of distance learning participants.

Joo et al. (2012) investigated the interconnections among self-efficacy, intrinsic value, test anxiety, and e-learning usability in relation to learning flow and achievement. Their findings indicate that self-efficacy has a crucial role in fostering learning flow. This is supported by Alqurashi (2016) who states that self-efficacy determines and controls a person's thoughts and ways of acting. Similarly, Wang et al. (2023) stated that having high academic self-efficacy allows students to have higher flow. Consistently, Xiao & Li (2021) underscored the positive and significant impact of self-efficacy on learning flow. Consequently, the fourth hypothesis posited in this research is as follows:

H4: Self-Efficacy has a positive effect on the flow of distance learning participants.

Pham et al. (2019) investigated the correlation between the overall quality of e-learning services, satisfaction levels, and student loyalty. Their findings revealed that the quality system of e-learning platform had a favorable and noteworthy impact on student satisfaction. In a similar vein, Salam & Farooq (2020) explored the impact of information quality, service quality, system quality, and social interaction quality on the adoption of web-based collaborative learning systems and user satisfaction in Malaysia. Their results highlighted the significant influence of system quality on user satisfaction. Likewise, Zhao et al. (2020) conducted research focusing on the determinants of successful implementation of information technology in online education. Their findings indicated that system quality serves as a significant precursor to student satisfaction. Similarly, Jung & Shin (2021) and Aldholay et al. (2018) yielded congruent outcomes, affirming that system quality positively and significantly affects learner satisfaction. Hence, the fifth hypothesis posited in this study is:

H5: System quality has a positive effect on learners' satisfaction of distance learning.

Martins et al. (2019) found in their research that information quality integrated into EMIS is a determining factor for student satisfaction. Similarly, Pham et al. (2019) concluded that the excellence of subject matter exerts a positive and substantial impact on student satisfaction. Shim & Jo (2020) delved into the impact

of information quality, service quality, and system quality of healthcare information platforms on perceived benefits and user satisfaction in South Korea. Their findings underscored the positive and significant influence of information quality on user satisfaction. This observation aligns with the findings of Zhao et al. (2020), who posited that information quality serves as a positive and significant precursor to student satisfaction. Furthermore, Jung & Shin (2021) and Aldholay et al. (2018) also arrived at analogous conclusions regarding the impact of information quality on student satisfaction. Consequently, the sixth hypothesis postulated in this research is outlined as follows:

H6: Information quality has a positive effect on learners' satisfaction of distance learning.

The service quality inherent in EMIS determines student satisfaction (Martins et al., 2019). Research conducted by Pham et al. (2019) reveals that the quaity of administrative support and services significantly impacts student satisfaction in a positive manner. Similarly, findings from Shim & Jo (2020) indicate that service quality positively and significantly influences user satisfaction. Moreover, Salam & Farooq's investigation (2020) corroborates these results, highlighting the positive and significant effect of service quality on user satisfaction. Zhao et al. (2020) also contribute to this body of knowledge, asserting that service quality serves as a positive and significant determinant of student satisfaction. Furthermore, Jung & Shin (2021) and Aldholay et al. (2018) present congruent findings concerning the influence of service quality on student satisfaction. Consequently, the seventh hypothesis posited in this research is as follows:

H7: Service quality has a positive effect on learners' satisfaction of distance learning.

Tas (2016), in his study concerning the correlation between the learning environment, motivation, and student engagement, uncovered that students exhibiting higher levels of self-efficacy tended to demonstrate increased engagement and reported higher satisfaction with their learning experiences. This finding finds support in the work of Aldholay et al. (2019), who extended the information system success model to encompass the concept of self-efficacy as a precursor to both user satisfaction and actual usage, aiming to forecast student performance in Yemen. Their findings assert that self-efficacy exerts a positive and significant influence on user satisfaction. Additionally, Alyoussef & Omer (2023) corroborated these findings, indicating a positive and significant relationship between self-efficacy and student satisfaction in the adoption of technology-enhanced learning (TEL). Therefore, the eighth hypothesis proposed in this study is:

H8: Self-Efficacy has a positive effect on learners' satisfaction of distance learning.

In terms of the impact of flow on user satisfaction, Shin's (2006) research findings indicate a significant positive correlation between flow and satisfaction in online shopping (L.-C. Huang et al., 2017). Lu et al. (2019) similarly demonstrated that usability, interest, and flow contribute to enhancing user satisfaction with massive open online courses (MOOCs). Moreover, Cheng (2021) asserted that flow, confirmation, and perceived usefulness significantly influence satisfaction. Additionally, Xiao & Li (2021) elaborated on the positive and significant relationship between flow and user satisfaction. Consistently, Jung & Shin (2021) affirmed that

flow significantly impacts user satisfaction. Consequently, the ninth hypothesis proposed in this study is:
H9: Flow has a positive effect on learners' satisfaction of distance learning.
The following is a picture of this research model.

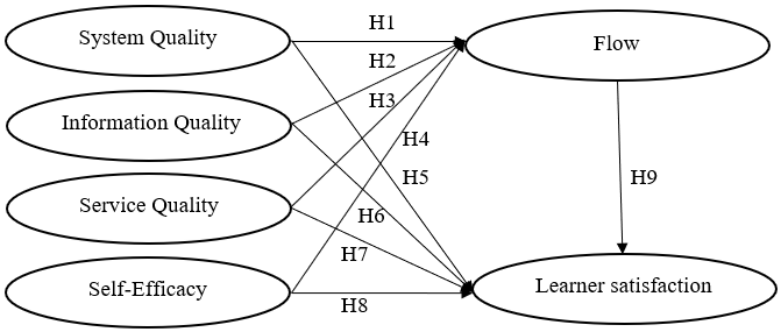

Figure I. Research model

RESEARCH METHOD

Design and Sample

The methodology employed in this study is quantitative in nature. The study population comprises employees from a Public Sector Organization in Indonesia who participated in distance learning programs during the year 2023. This study uses cluster sampling with regional sampling consisting of 6 major regions of Indonesia, namely Bali-Nusa Tenggara, Java, Kalimantan, Maluku-Papua, Sumatra, and Sulawesi. Sample data collection was conducted using an online survey from March to April 2024. The survey contained a research questionnaire that consisted of four sections: consent questions, screening questions, core questions (60 selected question items and 2 open-ended question items), and questions related to the respondent's profile. According to Hair (2014), the minimum sample size should be five times the number of questionnaire items. Hence, the minimum sample size required for this study is 300 respondents.

Measurements

The questionnaire utilized in this study employs a 7-point Likert scale, ranging from 1 (indicating strong disagreement) to 7 (indicating strong agreement). The study incorporates six variables: learner satisfaction as the dependent variable, flow as the mediating variable, and system quality, information quality, service quality, and self-efficacy as independent variables. The indicators employed to gauge system quality are adapted from the study conducted by Prasetyo et al. (2021). Meanwhile, indicators for information quality and service quality are derived from the research of Balaban et al. (2013). Self-efficacy indicators in this study encompass three dimensions of Online Learning Self-Efficacy (OLSE), namely learning in the online environment, time management, and technology use, adapted from Zimmerman & Kulikowich (2016). Flow indicators are measured using four dimensions adapted from M.-H. Huang (2003), comprising control, focus of attention, curiosity, and intrinsic interest. To measure learner satisfaction, researchers utilized indicators

developed by Balaban et al. (2013). Examples of measurement items for each research variable are outlined in Table 1.

Table I. Examples of Indicator

Variables	Indicator	Source
System Quality	• I find the distance learning system platform (video conference, group chat, LMS, and/or google site) easy to use	Prasetyo et al. (2021)
	• I feel flexible to communicate using the distance learning system platform (video conference, group chat, LMS)	
	• I feel comfortable using the service function of the distance learning system platform (video conference, group chat, LMS, and/or google site)	
Information Quality	• Information in the form of teaching materials provided in the distance learning is clear, readable, and well formatted	Balaban et al. (2013)
	• The information in the form of material provided in the distance learning is easy to understand	
	• The information in the form of material provided in the distance learning is available in a form that is easy to use	
Service Quality	• Teachers and staff assist in the use of the distance learning system platform	Balaban et al. (2013)
	• Distance learning teachers and staff are competent in answering questions	
	• Distance learning staff are always willing to help	
Self-efficacy	• I can learn to use the new technology required for distance learning efficiently	Zimmerman & Kulikowich (2016)
	• I can communicate using asynchronous technology (discussion forum, email, etc)	
	• I am able to communicate well with technical support staff via email or online chat.	
	• I am able to complete all tasks on time	
	• I can meet deadlines for completion of training tasks with little/no reminders from others	
	• I am able to develop and follow a plan to complete all tasks on time	
	• I am able to navigate the distance learning materials efficiently	
	• I am able to communicate with the instructor through email or online chat effectively	
	• I can submit assignments using online storage media (such as google drive, OneDrive)	
Flow	• When participating in distance learning, I feel that I can control my behavior to maximize learning	M.-H. Huang (2003)
	• This distance learning allows me to have control in using online learning platforms (such as LMS, google sites)	

Variables	Indicator	Source
	• When participating in the distance learning, I do not think about anything other than the learning	
	• When participating in distance learning, I am completely engrossed in my learning	
	• The distance learning system arouses my curiosity	
	• Interacting in this distance learning makes me curious	
	• Participating in distance learning is basically interesting	
	• The distance learning platform is fun for me to use	
Learner Satisfaction	• I like learning with the distance learning system	Balaban et al. (2013)
	• Using the distance learning system is a good idea	
	• I think the distance learning system is useful in learning	

Data Analyses

The methodology for data analysis in this study employs the Structural Equation Model (SEM), which comprises two models: the measurement model and the structural model. The measurement model illustrates how the observed variables collectively define the construct, while the structural model elucidates the relationships between constructs (Hair, 2014). This study employs a covariance-based SEM model (CBSEM). Confirmatory Factor Analysis (CFA) is utilized to assess the validity of the measurement model, employing the Standardized Loading Factor (SLF) as a measurement indicator. The reliability of the measurement model is assessed using Construct Reliability (CR) and Average Variance Extracted (AVE) values. The structural model is evaluated using the Goodness of Fit (GOF) indicator value.

RESULT AND DISCUSSION

During the pretest phase, researchers employed IBM SPSS 27 software to assess the validity and reliability of the instrument. Subsequently, for the analysis of the measurement and structural models, Lisrel 8.80 software was utilized. The study participants consisted of employees from a Public Sector Organization in Indonesia who had undergone distance learning in 2023. A total of 701 responses were gathered and subjected to further analysis. This sample size satisfies the minimum sample size criteria recommended by Hair (2014), which suggests that the sample size should be at least five times the number of items in the questionnaire.

The demographic characteristics of respondents in this study are as shown in table 2. Where respondents are dominated by men (67.62%), most of them are 25 to 35 years old (32.52%), and 55.78% of respondents work in offices located on the island of Java.

Table 2. Respondent Profile

Respondent Group	Respondent Category	Total Frequency	Percentage
Gender	Female	227	32.38%
	Male	474	67.62%

Age	<25	71	10.13%
	25 s.d. <35	228	32.52%
	35 s.d. <45	226	32.24%
	45 s.d. <55	157	22.40%
	55 or more	19	2.71%
Working location	Bali-Nusa Tenggara	42	5.99%
	Java	391	55.78%
	Kalimantan	49	6.99%
	Maluku-Papua	33	4.71%
	Sumatera	115	16.41%
	Sulawesi	71	10.31%

Measurement Model

The evaluation of the measurement model entails assessing its validity and reliability. CFA is employed by researchers to gauge the validity of the measurement model, with the standardized loading factor (SLF) serving as the CFA measurement indicator. According to Hair (2014), a model is deemed valid if the SLF value exceeds 0.30, particularly with a sample size of 350 or more. On the other hand, researchers utilize the construct reliability (CR) value and the average variance extracted (AVE) value to measure the reliability of the measurement model. As per Hair (2014), the measuring instrument is considered reliable if the CR value surpasses 0.7 and the AVE value is above 0.5. If the AVE value falls below 0.5, it is still acceptable if the CR coefficient value is equal to or greater than 0.6, as indicated by Fornell & Larcker (1981).

Structural Model

The structural model, characterized as a path model, illustrates the connections between the independent variables and the dependent variable (Hair, 2014). The examination of the structural model aims to determine whether the overall structure of the model aligns with the sample under investigation. Goodness of Fit (GOF) serves as a measure for this assessment. Derived from the outcomes of the structural examination, the GFI value is 0.78, the RMSEA value is 0.061, SRMR value is 0.055, NFI and RFI both are 0.98, TLI and CFI both are 0.99 and PNFI is 0.93. The majority of the absolute, incremental, and parsimony indices fall within the category of good fit, indicating that the model can be considered "fit".

Table 3. Standardized Loading Factor (SLF), Construct Reliability (CR), and Average Variance Extracted (AVE)

Variable	Indicator	*SLF*	*CR*	*AVE*	*Description*
System Quality	SYS1	0.82	0.897	0.636	Valid and reliable
	SYS2	0.85			
	SYS3	0.72			
	SYS4	0.82			
	SYS5	0.77			
Information Quality	INF1	0.76	0.905	0.580	Valid and reliable
	INF2	0.73			
	INF3	0.74			
	INF4	0.54			
	INF5	0.83			
	INF6	0.85			
	INF7	0.84			
Service Quality	SRV1	0.80	0.947	0.690	Valid and reliable
	SRV2	0.77			
	SRV3	0.88			
	SRV4	0.87			
	SRV5	0.86			
	SRV6	0.88			
	SRV7	0.86			
	SRV8	0.71			
Self-efficacy	SLI1	0.58	0.920	0.539	Valid and reliable
	SLI2	0.79			
	SLI3	0.70			
	SLI4	0.73			
	SLI5	0.80			
	SLI6	0.76			
	SLI7	0.78			
	SLI8	0.83			
	SLI9	0.62			
	SLI10	0.71			
	STM1	0.77	0.912	0.676	Valid and reliable
	STM2	0.86			
	STM3	0.82			
	STM4	0.74			
	STM5	0.91			
	STU1	0.80	0.890	0.542	Valid and reliable
	STU2	0.77			
	STU3	0.82			
	STU4	0.85			
	STU5	0.73			
	STU6	0.50			
	STU7	0.61			
Self-efficacy 2nd order			0.952	0.870	Valid and reliable
SLI *2nd order*		0.94			
STM *2nd order*		0.86			

Variable	Indicator	*SLF*	*CR*	*AVE*	*Description*
STU *2nd order*		0.99			
Flow	FLK1	0.82	0.684	0.524	Valid and reliable
	FLK3	0.62			
	FLA1	0.69	0.783	0.550	Valid and reliable
	FLA2	0.67			
	FLA3	0.85			
	FLC1	0.92	0.932	0.821	Valid and reliable
	FLC2	0.96			
	FLC3	0.84			
	FL11	0.31	0.757	0.545	Valid and reliable
	FL12	0.87			
	FL13	0.88			
Flow 2nd order			0.893	0.679	Valid and reliable
FLK *2nd order*		0.82			
FLA *2nd order*		0.66			
FLC *2nd order*		0.91			
FLI *2nd order*		0.88			
Learner	LES1	0.79	0.908	0.623	Valid and reliable
Satisfaction	LES2	0.78			
	LES3	0.86			
	LES4	0.80			
	LES5	0.74			
	LES6	0.76			

The findings of this study reveal that flow exerts a positive and significant impact on user satisfaction in distance learning. Compared to other variables, the flow variable demonstrates the strongest direct influence on the satisfaction of participants engaged in distance learning. This finding is consistent with numerous previous studies indicating that flow contributes positively and significantly to user satisfaction in online learning contexts (Shin, 2006; Lu, Wang & Lu, 2019; Cheng, 2021; Xiao & Li, 2021; and Jung & Shin, 2021). The concept of flow, initially introduced by Csikszentmihalyi in 1975, suggests that individuals experience flow when they are fully engaged and immersed in an activity (Cheng, 2020). Flow in learning makes the concentration and participation of learners increase and leads to good academic results (Jung & Shin, 2021). This study provides findings that with higher flow, learners feel more satisfied with their distance learning. As explained by Dos Santos et al. (2018) that flow theory has been used in addressing student satisfaction issues in e-learning and virtual learning environments (Goh & Yang, 2021). The dimensions that have a large contribution to the flow variable in this study are curiosity and intrinsic interest. Therefore, it is important for organizations to be able to increase curiosity and intrinsic interest of learning participants. If learning flow can be improved, learning participants' satisfaction will increase.

To be able to achieve flow in online learning process is a challenge because this learning process is different from traditional or classical learning (Joo, Joung, & Kim, 2013). Learning flow can be shaped by various factors including system quality, information quality, and service quality (Jung & Shin, 2021). Moreover, according to the findings of Xiao & Li (2021), self-efficacy has been demonstrated

to impact flow in online learning. This study confirms that information quality, service quality, and self-efficacy exert a positive and significant influence on flow. Therefore, enhancing the self-efficacy of learners and improving the quality of information and services provided to participants in distance learning are essential steps to achieve high levels of flow during the learning process.

In this research, it was found that information quality has a positive and significant impact on the flow experienced by participants in distance learning. This finding aligns with the conclusions drawn in studies by Cheng (2014) and Jung & Shin (2021), which suggest that information quality plays a positive and significant role in fostering flow in online learning environments. These results indicate that the higher the quality of information provided by organizers of distance learning programs, the more conducive the learning flow becomes. Among the indicators contributing most significantly to the information quality variable in this study is the clarity and comprehensibility of the information provided in distance training materials. Enhancing the quality of this information could lead to an increase in learning flow. Furthermore, information quality also exhibits a significant and positive direct influence on the satisfaction levels of participants in distance training. This underscores the notion that improving the quality of information provided in distance training programs leads to heightened user satisfaction. These findings are consistent with those of previous studies by Aldholay et al. (2018), Pham et al. (2019), Martin et al. (2019), Shim & Jo (2020), Zhao et al. (2020), and Jung & Shin (2021), all of which suggest that information quality serves as a positive and significant determinant of learner satisfaction.

This study demonstrates that service quality has a notable and positive impact on the flow experienced in distance learning. This aligns with the findings of Cheng (2014) and Jung & Shin (2021), which suggest that service quality plays a crucial role in enhancing flow within online learning contexts. Consequently, it suggests that higher-quality services offered by learning organizers can lead to an increase in learning flow. And the indicators that have a large contribution to the service quality variable in this study are related to the willingness to help, competence, speed of response, and attention from the organizing committee. Therefore, it is important for organizations to prioritize the responsiveness of the committee to be able to always be dexterous in responding and helping training participants in need.

The effect of self-efficacy on the flow of distance learning participants, as observed in this study, exhibits a positive and significant effect. This finding is consistent with the outcomes of previous research conducted by Joo, Lim, & Kim (2012), Wang, Manta, & Zhang (2023), and Xiao & Li (2021) which state that self-efficacy contributes positively and significantly to flow in online learning. This is because self-efficacy determines and controls a person's thoughts and ways of acting (Alqurashi, 2016). By having high self-efficacy, students will have higher flow. The dimension that has the greatest contribution to the self-efficacy variable in this study is technology use. Hence, it is crucial for organizations to enhance users' technological proficiency.

The findings of this study suggest that the system quality does not significantly impact flow, which contrasts with the results of Jung & Shin's (2021) study indicating a positive and significant relationship between system quality and flow.

Despite advancements in learning management systems, it does not necessarily guarantee a positive learning experience for online learners (Xiao & Li). Nonetheless, while system quality does not directly influence flow significantly in this study, it does have a significant and positive effect on the satisfaction of distance training participants. This underscores the importance of enhancing the quality of distance learning systems to improve user satisfaction. These findings align with prior research conducted by Aldholay et al. (2018), Pham et al. (2019), Salam & Farooq (2020), Zhao et al. (2020), and Jung & Shin (2021). Indicators that have a large contribution to the system quality variable in this study include aspects related to communication flexibility and user-friendliness of the distance learning platform.

In contrast, service quality in this study is found not to have a direct impact on user satisfaction but exerts an indirect influence through flow mediation. This observation aligns with the findings of Shahzad, Hassan, Aremu, Hussain, & Lodhi's (2021) research. Shahzad, Hassan, Aremu, Hussain, & Lodhi (2021) comparing e-learning usage between genders, where they found that service quality does not significantly affect male learners' satisfaction, unlike female learners. Examining the characteristics of respondents in this study, it's noteworthy that male respondents dominate, comprising 68% of the sample.

Similarly, self-efficacy in this study is observed not to directly impact user satisfaction but has an indirect effect through flow mediation. This finding aligns with Eom's (2012) study, which explored the impact of self-efficacy on student satisfaction in online learning at a large university in the US Midwest. Conversely, the influence of self-efficacy on user satisfaction through flow mediation is consistent with Xiao & Li's (2021) research. They suggest that learners with high self-efficacy tend to experience better flow, significantly enhancing satisfaction with online learning. This is in accordance with Alqurashi's (2016) assertion that self-efficacy plays a crucial role in shaping individuals' thoughts and behaviors. Individuals with high self-efficacy are more likely to approach online learning activities confidently, plan effectively, seek assistance, and remain motivated, thereby positively impacting flow and potentially increasing satisfaction with their learning experience (Xiao & Li, 2021).

Table 4. Hypotheses Testing Result

Hypothesis	Path	t-value	Coefficient	Result
H1	System Quality - Flow	-1.37	-0.08	Not supported
H2	Information Quality - Flow	5.31	0.34	Supported
H3	Service Quality - Flow	1.83	0.08	Supported
H4	Self-efficacy - Flow	8.24	0.52	Supported
H5	System Quality – Learner Satisfaction	2.72	0.14	Supported
H6	Information Quality - Learner Satisfaction	2.28	0.13	Supported
H7	Service Quality – Learner Satisfaction	0.04	0.00	Not supported
H8	Self-efficacy – Learner Satisfaction	0.17	0.01	Not supported
H9	Flow - Learner Satisfaction	11.96	0.69	Supported

So, we can conclude that in order to increase learner satisfaction of distance learning in the post-pandemic era, it is important to improve learning flow as well as the quality of distance learning systems and information quality. And to be able to improve learning flow, improving information quality, service quality, and self-efficacy of learning participants is equally important.

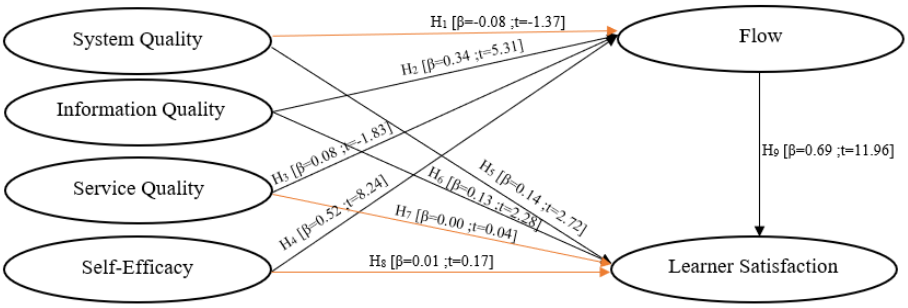

Figure 2. Model Results

CONCLUSION

The findings of this study indicate that information quality, service quality, and self-efficacy exert a positive and significant effect on flow. Additionally, system quality, information quality, and flow are found to have a positive and significant direct effect on the satisfaction of participants in distance learning programs. Thus, it can be concluded that flow serves as a mediator in the relationship between information quality, service quality, and self-efficacy on the satisfaction of distance learning participants. Thus, it is important for distance learning organizations to be able to increase intrinsic interest by creating interesting learning designs. Then, training organizations also need to improve the ability to use technology for their users, for example by holding workshops that focus on the use of the latest technology in learning (the use of collaboration tools and distance learning platforms). Providing information that is easily understood by learners is also important. This can be done for example by providing an overview of the material or creating more concise training materials to help make it easier for trainees to understand the material. Organizations also need to encourage the responsiveness of the committee to be able to always be nimble in responding and helping learners and need to consider improving reliable network infrastructure.

The subject of this study is limited to one public sector organization so that it cannot be generalized to all public sector organizations. The variables in this study are also limited to system quality, information quality, service quality, self-efficacy, and flow as factors that influence the satisfaction of distance learning participants. There are still other factors that have the potential to be determinants of flow and satisfaction of distance learning participants that are not examined in this study. Future research can add other variables as factors that can affect the flow and satisfaction of distance learning participants, such as leadership, sociability quality and facilitating conditions. The addition of mediating variables other than flow also

needs to be considered to add depth to the research and be more comprehensive in explaining distance learning satisfaction.

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