Does E- Learning Platform Influence Fisheries Students Intent? Evidence From Tamil Nadu

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Abstract

SWAYAM is a technology-mediated learning strategy with significant potential from an academic perspective and has been one of the primary educational technology research over the past few decades. This current study measures the role of the E-learning system and E-Servicescape dimensions on the satisfaction and intention of students to use Swayam in Chennai city. The Descriptive research surveys used judgment sampling to collect the data from 448 Swayam students of fisheries science, aquaculture engineering, fisheries business management and fisheries enterprise management studying at Universities and Colleges in Tamil Nadu. Besides, the relationships between the constructs were examined using the SEM technique, and the hypothesis was statistically tested. The empirical findings reveal that information quality, service quality, system quality, ambient conditions, design aspects, and social aspects significantly influence students' satisfaction, leading to the intention to use the swayam courses. This study will help e-learning system designers comprehend EED and SSD's effects on students and support long-term user relationships. The study's management implications include the necessity for service providers to strive for quality improvement, provide online infrastructure for higher education, and provide excellent service when it is most needed. The pattern of change should consist of KAIZEN (improvement as an improvement), quality benchmarking, and ethical behavior toward society and students.

Keywords: system quality, information quality, service quality, design aspects, social aspects, ambient conditions

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Introduction:

Education is substantial in improving human growth and sustainable development (Becker. G, 2017; Nousheen. A, Zai, S.A.Y, Waseem. M and Khan. S.A, 2020), especially with the current broad focus on how to solve unsustainable societal problems through education (McKeown. R, Hopkins. C.A, Rizi. R and Chrystalbridge. M,2002; Buckler. C and Creech. H,2014; Beynaghi. A, Trencher. G, Moztarzadeh. F, Mozafari. M, Maknoon. R and Filho. W.L, 2016). The traditional approach to teaching is evolving due to the progress of information and communication technologies in education (Chow, Wing S and Si Shi, 2014). As a result, teachers and students have access to a wide range of teaching and learning alternatives supported by sophisticated technology (Sarabadani, Jalal, Hamed Jafarzadeh, and Mahdi ShamiZanjani, 2017), with massive open online courses (Tsai, Chia-Wen, Pei-Di Shen, and Yi-Chun Chiang, 2013; Wu. B, 2016; Alharthi, Ahmed D., Maria Spichkova, and Margaret Hamilton, 2019) receiving increasing attention. In a relatively short period, many users have enrolled in MOOCs, democratizing access to higher education. If e-learning is the new trend in education (Sun, Pei-Chen, Ray J. Tsai, Glenn Finger, Yueh-Yang Chen, and Dowming Yeh, 2008), then MOOCs, which are becoming increasingly prevalent, are seen by some scholars as a disruptive technology that could challenge the traditional role of higher education institutions (Yuan. L & Powell. S, 2013;Riehemann, Jens, Jens H. Hellmann, and Regina Jucks, 2021;Tang, Hengtao, Wanli Xing, and Bo Pei, 2018). Additionally, new online education platforms like massive open online courses (MOOCs) have evolved, making higher education accessible to anybody with an internet connection. In addition, these platforms oversee a wide range of instructional assets, including video lectures, text-based lessons, and interactive quizzes and tests (Khalil, Mohammad,2018). Furthermore, MOOC courses are being delivered by several top-ranked universities via popular global platforms such as Coursera, Udacity, edx, Future Learn, and others. SWAYAM is an Indian platform launched to develop MOOC e-contents(Sahoo, Jyotshna, Basudev Mohanty, Lipsha Ratha, Anupama Meher, and Jayanta Kumar Sahu,2018).However, because SWAYAM is still in its early stages, it lacks a well-designed framework in its discussion forums, which is required to encourage student intention in learning (Kim E, 2020).Also, little research focuses on e-servicescape as a dimension of perceived e-learning systems and their effect on student satisfaction in the swayam portal in the Indian context. Therefore, this paper proposes a research framework that combines the dimensions of e-learning systems (Delone. W.H and McLean. E.R, 1992) and e-servicescapes (Bitner M. J,1990), and how these factors influence the fisheries students to use the platform was studied. Furthermore, the suggested model can be used by e-learning providers to understand better the elements that influence e-learning efficacy among fisheries students. The study also summarizes several e-learning portal characteristics that directly or indirectly affect fisheries students' intentions to use the Swayam platform (Gu, Wei, Ying Xu, and Zeng-Jun Sun, 2021).

Review of Literature:

The DeLone and McLean Information Systems Success Framework identifies system, information, and service quality as the primary determinants of whether users will continue using an IS. In contrast, the quality of the IS influences users' use efficiency and individual results (DeLone, William H and Ephraim R. McLean, 2004).In addition, the model's information quality, service quality, and system quality are used as indications of an e-learning system's success(Chen, Chien-Wen David, and Chiang-Yu John Cheng, 2009;Noudoostbeni, Ali, Kiran Kaur, and Hashem Salarzadeh Jenatabadi , 2018), and it has been widely used to research information systems in a variety of sectors (Albelbisi, Nour Awni, Ahmad Samed Al-Adwan, and Akhmad Habibi, 2021; Petter, Stacie, William DeLone, and Ephraim McLean, 2008).Consequently, (Cidral et al .,2018) confirmed the significance of system, information, and service quality in influencing users' psychological judgments. Furthermore, they revealed that users' intentions to continue using the Swayam platform were positively influenced by its

compliance with their expectations. Therefore, this study concludes that Swayam platforms, like e-learning systems, must have high platform quality to improve users' psychological view of services. Based on the external factors built by the D&M ISS model (such as information quality, service quality, and system quality), this study aims to develop the e-servicescape elements of Swayam platforms, such as ambient conditions, design aspects, and social aspects.

Subsequently, System quality refers to an information system's access speed, simplicity of use, navigation, and web interface design (Zhou. T,2013). In addition, system bugs contribute to a low degree of user satisfaction. Furthermore, (Chiu et al .,2005) discovered a favorable and substantial link between perceived System Quality and continued behavioral intention to use e-learning services. Also, Information quality relates to the main attributes of system outputs, including relevance, correctness, timeliness, completeness, comprehension, and accessibility (Tam. C and T. Oliveira,2016). Furthermore, information quality is considered the system's output and is essential in using e-LMSs (Urbach, Nils, and Benjamin Müller, 2012). Furthermore, according to the findings of (Al-Busaidi, Kamla Ali,2012),information quality has a favorable and significant impact on user happiness. Likewise, Service quality refers to a service provider's responsiveness, convenient operation hours, dependability, and ease of communication (Zeithaml V. A.L, L. Berry, and A. Parasuraman,1996).Moreover, service quality has been crucial in customer satisfaction with information systems such as instant mobile messaging and payment services. In the context of e-LMS, superior service quality of the electronic learning platform system will result in greater customer satisfaction, resulting in the continued use of the e-LMS (Murshitha, Seiyathu Mohammathu, and A. P. Wickramarachchi, 2016).

On the other hand, the term "e-servicescape" (Hopkins et al .,2009) and "virtual Service scape" (Vilnai-Yavetz, Iris, and Anat Rafaeli, 2006; Vilnai-Yavetz, Iris, and Signal Differet, 2009) can be used to describe the service scape in an online context. Additionally, research on service scapes emphasizes the value of social factors, functionality, and design in general (Bitner M. J,1992),in e-learning platforms (Harris. L.C and C. Ezeh,2008),and regarding MOOC's e-contents (Fryer. L.K. and Bovee. H.N,2018).Moreover, a customer's experience with a service scape online is crucial since it can positively influence users and boost positive consumer responses (Dailey. Lynn, 2004).According to (Jeon, Myunghee Mindy, and Miyoung Jeong, 2009),online ambient conditions include photos, animation effects, virtual tours, colors, and sound. In addition, the researchers change the environmental conditions of Jeon and Jeong, such as animation effects, colors, and image quality. Therefore, when it comes to the online environment, the ambient settings of a website provide customers with positive feelings when they utilize the website for information or online learning. Furthermore, service scape design includes general structure, organization, intelligent use of space, and simple navigational features on web pages. Also, service scape design has a web page layout, efficient use of space, hierarchy, and general structure(Lee, Seonjeong, and Miyoung Jeong,2012).Similarly, (Bitner MJ, Booms BH and L.A. Mohr, 1994) argues that the service-consuming process involves communication between the customer and the company's employees. According to (Hoffman, K.D. and L.W. Turley,2002), the presence of other customers during service delivery can significantly impact an individual's perception of the service they receive. Finally, this study identifies e-service scape dimensions for an e-learning site unique to the SWAYAM Platform. The Indian e-learning system, e-service scape, and fisheries students' SWAYAM usage intent have not been studied. Thus, the researchers' study questions are:

- Which key e-learning factor influences fisheries students' perception of using the SWAYAM platform?
- Which decisive e-service scape factors influence fisheries students' intent to use the SWAYAM platform?

Research Methodology

The current study follows a descriptive research design to measure the perceptions & intentions of fisheries students to use Swayam in the sample area. In addition, the primary data related to the constructs of the study, such as information quality, system quality, service quality, design aspects, social aspects, and ambient aspects, were collected using a structured questionnaire. A research data collection instrument is built and tested with the pilot study to collect data from 45 respondents. Furthermore, the respondents were asked to evaluate their agreement with thirty items on the study's construct on a Likert scale, with 5 being the strongest agreement and 1 being the strongest disagreement. The Cronbach Alpha test(α) was used to evaluate the degree of agreement between the multiple estimates of each element (system quality=0.937), (information quality=0.965), (service quality=0.897), (ambient aspects=0.966), (design aspects=0.859), (social aspects=0.890), (students' satisfaction =0.898) and (intention to use =0.855). It was discovered that the overall result of 0.938 was solid compared to the accepted alpha threshold of 0.7. The population selected for this study was restricted to students of fisheries science, aquaculture engineering, fisheries business management and fisheries enterprise management studying at Universities and Colleges in Tamil Nadu. The judgment sampling technique was used to survey 448 respondents who had participated in at least one Swayam MOOC, and Structural Equation Modelling was used to test the data's reliability and validity, as well as the hypothesized relationship.

4. Data Analysis and Results

Table 1: Learners Profile of the Respondents

Demographic sample characteristics (n = 448)		
Attributes	**Distribution**	**Percentage**
Gender	Male (256)	57.14
	Female (192)	42.86
Swayam Course Mode	Regular (310)	69.20
	Self-Paced (138)	30.80
Education Stream	Fisheries science (102)	22.77
	Aquaculture engineering (119)	26.56
	Fisheries Business Management (126)	28.13
	Fisheries Enterprise management (101)	22.54
Nature of Institution	University (87)	19.42
	Government College (119)	26.56
	Aided College (107)	23.88
	Self Finance (135)	30.14

According to the swayam learner's background information, Male respondents (57.14 percent) slightly outnumbered their female counterparts, as shown in Table 1. As indicated by the mode of learning the Swayam course among the learners, it was found that 69.20 percent of the users were regular, and 30.80 percent were self-paced. Besides, it was with regards to the education stream of the learners, (28.13) of the users belong to Fisheries Business Management, followed by other streams. Further, as indicated by the nature of the institution outcome, (30.14 percent) of respondents come under self-finance colleges in the sample area.

Results of Structural Equation Model (SEM)

A structural model was developed to examine the role of the E-learning system and E-Servicescape dimensions as independent variables, satisfaction as a mediating factor, and the combined effect of the independent and mediating variables on the intention of

fisheries students to use towards Swayam in Chennai as shown in Figure 1. The Goodness of fit-values of the model shown in Table 2 demonstrates the model's Goodness of fit and verifies the structural equation. Furthermore, it is observed that all Goodness of fit indices is within acceptable limits. Thus, the relationships between the variables in the model and the structures are verified.

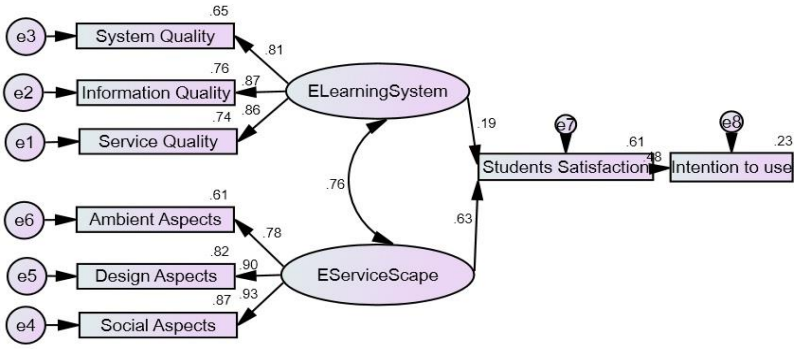

Figure 1: Showing the SEM model summary along with the relationships between constructs

Table 2: Presenting Model Fit Summary and Regression Weights of SEM

Hypothesized path	Standardized coefficients	t value	p-value	Decision
STS_Total <--- ELearningSystem	0.189	3.341	0.000**	Strongly supported
STS_Total <--- EServiceScape	0.628	10.473	0.000**	Strongly supported
SERQ_Total <--- ELearningSystem	0.861	5.869	0.000**	Strongly supported
IQ_Total <--- ELearningSystem	0.872	22.618	0.000**	Strongly supported
SQ_Total <--- ELearningSystem	0.807	20.369	0.000**	Strongly supported
SA_Total <--- EServiceScape	0.933	22.565	0.000**	Strongly supported
DA_Total <--- EServiceScape	0.904	21.792	0.000**	Strongly supported
AA_Total <--- EServiceScape	0.783	6.427	0.000**	Strongly supported
ITU_Total <--- STS_Total	0.476	11.449	0.000**	Strongly supported
Note: P value=0.062; Chi-square value/df =4.171; GFI =0.969; AGFI =0.939; NFI=0.906; CFI= 0.912;RMR= 0.025; RMSEA= 0.017 and ** indicates highly significant at 99 percent level of confidence.				

The path coefficient results of SEM analyses confirmed that Social Aspects (p=0.000, β=0.933), Design Aspects (p=0.000, β=0.904), and Ambient Aspects (p=0.000, β=0.783) are strong and highly significant at one percent level of significance. Further, It represents the considerable high level of the positive effect of e-service scape factors on Social Aspects, Ambient Aspects, and Design Aspects among the users by holding all other variables as constant. In addition, for every unit increase in service scape dimensions, Social Aspects would increase by 0.933, Design Aspects would increase by 0.904, and Ambients Aspects would increase by 0.783. The findings of the evidence study revealed that Social Aspects are the most dominating e-service scape factors that influence the student's intention to use swayam among the sample. Hence the study suggested the service provider enhance Social Aspects dimensions so that the faculty of a modern e-learning system is designed to constantly urge participants to share their ideas and clarify their doubts through such online communication tools. Furthermore, because most learners are fisheries students, it is critical to encourage them to share their perspectives and opinions on the subject with their peers via a discussion forum. The information and ideas contributed by peers and the questions and answers shared by peers and instructors create a great learning resource for other participants.

Similarly, the path coefficient of Information Quality (p=0.000, β=0.872), Service Quality(p=0.000, β=0.861), and System Quality(p=0.000, β=0.807) are positively influenced by e-learning system dimensions at one percent level of significance. The study's findings revealed that users' academic and career goals could be met if a portal is

accessible regarding usage and learning (System quality). It will be found usable in terms of its functions as a learning tool if it is well organized, consistent, and adaptable in approach (Service quality) and if information available on a portal is relevant, understandable, and complete (Information quality). Hence it is necessary to consider its accuracy, completeness, ease of comprehension, timeliness, relevance, and consistency in the quality of the content provided by the service provider to the learners. On the other side, there is a direct positive association(r=0.76) between e-service scape and e-learning systems, as shown by the value of the correlation between the constructs, which leads to fisheries students' satisfaction among the sample. Besides, fisheries students' intention to use would increase by 0.476 for every unit increase in fisheries student satisfaction. Finally, the results confirmed that the e-service scape factor and e-learning systems significantly affected fisheries students' satisfaction and intention to use at $\alpha = 0.05$. Finally, the result indicates the strong relationship between the independent factors and mediating factors taken for the study, and thereby, the role of independent factors on the dependent element, namely the level of satisfaction towards the Swayam platform intention to use, is also proved.

5. Discussion

This study shows that e-learning system and e-service scape attributes are independent factors, satisfaction is a mediating element, and fisheries student intention to use is a dependent component. The evidence analysis found that information quality is the most critical e-learning system aspect for fisheries students using Swayam platform services. Managers should create a system that provides fast, reliable service with a consistent user interface. Thus, a visually beautiful and accessible system should encourage reuse because users experience cognitive absorption.

The study's significant theoretical implication is the link between a comprehensive e-learning system with e-service scape dimensions. The concept of e-service scape is newly defined with ambient conditions, design, and social aspects. Furthermore, many studies employ the DeLone and McLean model of 1992 solely as a standard model when measuring students' responses and, in contrast, emerging technology offerings such as an E-Learning portal. The combined effect of the e-service scape and the e-learning system and mediating variables as satisfaction is extensive and explains many inter and intra-related correlations and associations between the components. As a result, it can aid as a model for any new type of lifestyle service, such as lodging websites, online shopping portals, the hospitality sector, the hotel industry, and the tourism sector.

The study's management implications help policymakers and e-learning providers enhance course design and delivery. Thus, e-learning platform service providers must combine visual, audio, or textual assets like Flash to allow students to explore relevant ideas and concepts and customize their learning content. This research also helps service providers build business reliability, sustainability, and e-learning systems.

This study investigates the role of the E-learning system and E-Servicescape dimensions on the satisfaction and intention of fisheries students to use Swayam in Tamil Nadu. Similar future studies will explain how these factors contribute to various sectors, including banking, insurance, tourism, and hospitality. Besides, this study was restricted to the Tamil Nadu and only analyzed the college students who used the Swayam portal. In addition, the current study heavily relied on quantitative data collection techniques, and it was built on a survey approach in which learners were polled using open-ended questions. As a result, more qualitative data collection methodologies should be used to gain additional insights by designing unstructured questions, resulting in a larger pool of information about learners' emotions in an education industry setting. Finally, this study's 448 learners sample and sampling methodology may limit its generalizability without further testing. Thus, to draw more reliable conclusions and corroborate existing

ones, it will be necessary for future studies to employ more extensive sample strategies.

Acknowledgements
The author have no acknowledgments

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