

The Continuance Usage Intention of Web 2.0 for Fostering Collaborative Learning in Higher Education Institutions: The Moderating Role of Self-Efficacy

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Abstract

Web 2.0 has been widely adopted to share learning resources among learners of higher learning institutions. Despite its initial adoption, persistent utilisation has been less researched in Tanzania. Addressing this gap, the study examines the intention to continue using Web 2.0 to share learning resources in higher learning institutions in Tanzania. The study developed a theoretical framework by integrating the Expectation-Confirmation Model for Information Systems (ECM-IS) and Social Cognitive Theory (SCT). The snowball sampling technique was employed to collect 210 valid and complete responses from users of Web 2.0 in Tanzania's higher learning institutions. Structural Equation Modelling (SEM) was employed for data analysis using SmartPLS. The results indicate that community identification, satisfaction, trust, collaboration norms, self-efficacy, confirmation, knowledge sharing, and perceived usefulness have a significant impact on the intention to continue using Web 2.0. Nevertheless, contrary to IS literature, the study found that self-efficacy does not moderate the relationship between predictors and continuance usage intentions. The study offers valuable implications and future directions based on its findings.

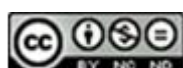
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Introduction

The application of information and communication technology (ICT) has increased massively in higher learning institutions (HLIs) globally. ICT has become an indispensable tool in higher learning settings, as it alleviates challenges related to time and space, and enables students and instructors to access and share learning materials ubiquitously (Aljawarneh, 2020; Caputo et al., 2018). Consequently, it is recognised as a potent tool driving educational change and reform. Among the technological platforms that facilitate the sharing of learning materials is

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Web 2.0 (Levy, 2009). Like other HLIs globally, several HLIs in Tanzania have implemented various Web 2.0 technologies to support learning, teaching, library usage, and knowledge management. For instance, Kazoka and Mwantimwa (2019) investigated the perceived usefulness and perceived ease of use of Web 2.0 tools in teaching and learning in universities, whereas Mwantimwa and Nkhoma-Wamunza (2016) examined the adoption of Web 2.0 in academic libraries.

Furthermore, Mosha et al. (2019) examined the use of Web 2.0 for knowledge management in academic libraries, while Mosha et al. (2019) investigated the integration of Web 2.0 tools for teaching and learning. Generally, studies on Web 2.0 in Tanzania have focused on the initial adoption of Web 2.0 in academic settings, as mentioned earlier. However, the success and sustainability of Web 2.0 technology, similar to other information systems, depend on the continued usage behaviour of users (Bhattacharjee, 2001b). The aspect, to the best of the researchers' knowledge, that has not been reflected in past studies conducted in Tanzania. Additionally, the social cognitive aspects which promote collaborative and self-regulated learning have been less investigated in the Tanzanian context (Wang & Lin, 2007a; Zimmerman, 1990). Therefore, there is a need to examine the intention to continue using Web 2.0 to share learning resources in HLIs.

Web 2.0 enables users to create and share content while collaborating with peers. For these reasons, the users should be self-efficacious (i.e., have the ability and confidence) to create meaningful and compelling content for sharing. Moreover, self-efficacy moderates an individual's interaction with Web 2.0 by boosting an individual's confidence in using skills when creating content and sustaining online interactions (Bao & Shang, 2021). Furthermore, as Web 2.0 requires individuals to perform specific activities such as creating, sharing, collaborating, and communicating (Singh et al., 2016). Understanding how self-efficacy might moderate the relationship between factors that directly influence the continuance of Web 2.0 is essential. Since less has been done to examine the moderating role of self-efficacy on the relationship between dependent and independent variables, there is a need to explore this role in the present study.

Based on the foregoing premises, the current study investigates the factors that influence the continued usage of Web 2.0 in sharing learning resources in HLI. Furthermore, the study examines the moderating effects of self-efficacy on the relationship between satisfaction, knowledge sharing, perceived usefulness, and continuance intention to use Web 2.0. To achieve the objectives, the study employs the Expectation Confirmation Model for Information Systems (ECM-IS) and Social Cognitive Theory (SCT) as its theoretical framework. The ECM-IS addresses the technology continuance aspect, while the SCT addresses the social cognitive aspects. Understanding the factors that contribute to the continued use of Web 2.0 will help HLIs provide more effective and sustainable Web 2.0 services for sharing learning resources. Overall, the study intends to answer the following research questions:

- i) Do social cognitive perspectives directly influence user satisfaction, perceived usefulness, and intention to continue using Web 2.0?
- ii) Do collaborative norms directly influence user self-efficacy of Web 2.0?
- iii) Does confirmation of user expectations directly influence user satisfaction and the perceived usefulness of Web 2.0?

- iv) Does user-perceived usefulness influence user satisfaction and continuance usage intention of Web 2.0?
- v) Does self-efficacy moderate the relationship between knowledge sharing, perceived usefulness, satisfaction and continuance usage intention of Web 2.0?

The rest of the paper is structured as follows: the literature review is presented in the next section, followed by the theoretical framework and hypothesis formulation, the research methodology, data analysis and findings, a discussion of the results, a conclusion, and finally, limitations and future research directions are provided.

Literature Review

This section reviews Web 2.0 and learning, explores the collaborative learning environment and outlines the theoretical framework underpinning this study.

Web 2.0 and Learning

Web 2.0 refers to the stage of web development where users are considered content generators rather than consumers. The existence of numerous Web 2.0 applications such as blogs, wikis, and social networks has revolutionised how content is created and shared among users (Singh et al., 2016). Web 2.0 features enable web users to engage in social interaction and collaboration on a much larger scale than the conventional web (McAfee, 2009). Due to the flexibility of various Web 2.0 tools, online learning content has also increased the accessibility and simplification of accessing different learning materials virtually (Chu et al., 2009a). The built-in capacities of Web 2.0 encourage learners to share learning materials among group members and online communities. Consequently, group members take pride in sharing learning resources and helping others learn (Chu et al., 2009b). This practice has propagated in HLIs, whereby different online academic communities are created to share resources.

Collaborative Learning Environment

Collaborative learning is a learning approach in which learners work together to solve issues, seeking understanding and creating something together (Cheng et al., 2021). Collaborative learning promotes critical thinking and increases the students' interest in participating in learning activities (Cheng et al., 2021). Further studies confirm that students who collaborate tend to perform better than those who study alone (Hertz-Lazarowitz et al., 2013). Also, studies show that collaborative learning reinforces satisfaction with the learning process (Hertz-Lazarowitz et al., 2013). This means that to enhance learning habits among learners, collaboration is more critical. With the development of technologies such as Web 2.0 platforms, collaboration among learners has improved due to knowledge sharing (Kam & Katerattanakul, 2010). With Web 2.0, learners are expected to collaborate in various aspects, such as sharing learning materials, peer-to-peer assessment, and sharing learning experiences.

Expectation-Confirmation Model for IS (ECM-IS) and Social Cognitive Theory (SCT)

Previous studies have adopted theories to examine continuance usage intention behaviours (Aydınliyurt et al., 2021; Chauhan et al., 2022; Kumar & Natarajan, 2020a). The concept of continuance usage intention behaviour has been traditionally investigated through the Expectation-Confirmation Model (ECM). ECM assumes that consumers purchase products

or services despite not having any prior expectations (Hossain & Quaddus, 2012). This premise is unlikely to be true in Information Systems (IS) since IS users have varied expectations for utilising various IS, making it impossible for the ECM to help analyse the continuance intention behaviour of IS users (Hossain & Quaddus, 2012). Furthermore, the ECM places much emphasis on consumer characteristics and perceptions, which may not fully consider IS characteristics (Hossain & Quaddus, 2012). To examine IS users' continuous usage intention behaviour, Bhattacharjee (2001b) expanded the conventional ECM to the ECM-IS model. According to ECM-IS, user satisfaction and expectations significantly influence the decision to continue using IS services (Bhattacharjee, 2001a).

Nevertheless, previous studies have emphasised the need to include other factors in examining the continuance usage behaviour to increase predictive power (Kumar & Natarajan, 2020b). In line with Kumar and Natarajan's (2020) The proposition and focus of this study are that ECM-IS was integrated with social cognitive theory (SCT). SCT is the most widely used theory for human behaviour (Kim & Han, 2021). The theory is instrumental in understanding the dynamics of human behaviour (Kim & Han, 2021; Zhou, 2018). In addition, SCT has been widely used in learning contexts (Lin, 2010; Wang & Lin, 2007b), and therefore, it fits well within the current study's Context. According to SCT, people learn by observing and imitating the behaviour of others in their social environment or perspective (Kim & Han, 2021). They also use cognitive processes to evaluate and interpret the information they receive from their environment. In addition, SCT emphasises the importance of self-efficacy (i.e., one's belief in one's ability to perform a particular behaviour) in determining whether one will engage in that behaviour (Carillo, 2010). In this study, social environmental factors encompass social perspectives, including collaboration norms, community identification, and community trust. A sharing attitude represents the cognitive factor, and the behavioural factor is represented by self-efficacy.

Theoretical Framework and Hypotheses

The study developed a theoretical framework to depict the hypothetical relationships between the study constructs, as shown in Figure 1. The theoretical framework comprises sixteen hypotheses and provides a comprehensive and holistic understanding of the interplay between study constructs. Users of Web 2.0 applications tend to create groups for sharing information, such as personal information, posting videos and pictures and commenting on other members' posts (Shen & Chiou, 2009a). Such engagement has enabled Web 2.0 users to expand their social networks for interacting and sharing information (Shen & Chiou, 2009b). In learning environments, Web 2.0 has enabled the creation of diverse groups and the sharing of learning resources through online applications. Learners tend to identify themselves in their profiles, increasing their social connections with other group members. Group members tend to feel like family members, increasing their commitment to accomplishing group objectives (Shen & Chiou, 2009b). Similarly, when learners feel like family members, their participation in virtual learning increases voluntarily. According to Chow and Chan (2008). Community members tend to have a strong attitude towards knowledge sharing in solid social network communities.

Furthermore, prior studies have shown that community identification extends users' intention to use web-based applications (Lin et al., 2017). This means community identification could

influence continuous usage intention of sharing learning resources among learners connected through Web 2.0 applications. Thus, this study hypothesises:

- H1: Community identification positively and significantly affects the satisfaction of using Web 2.0 to share learning resources in HLIs.*
- H2: Community Identification positively and significantly affects continuance usage intention to use Web 2.0 for sharing learning resources in HLIs.*

Trust is the willingness of an individual to rely on and be confident in the services and products provided by a business partner (Mandira et al., 2018). Trust is only considered to exist if an individual believes that the exchange partner is reliable and has integrity in their business dealings. Studies have shown that trust is developed if an individual believes that exchanging will bring more benefits (Mandira et al., 2018). Other studies have shown that when service providers ensure the availability of trust in business transactions, customers tend to be satisfied. A long-term relationship is established between service providers and consumers (Vuuren et al., 2013). Scholars have also demonstrated that trust has a positive and statistically significant effect on satisfaction (Vuuren et al., 2013). Similarly, due to existing trust, there is a tendency for transacting parties to establish long-term relationships, ensuring a continuous intention to use services or technologies (Rico et al., 2019). In this context, when users perceive that using Web 2.0 is secure for sharing learning resources in higher education institutions, they become satisfied with the services, increasing their likelihood of forming a continuous usage intention. Based on previous explanations, this study provides two hypotheses as follows:

- H3: Trust has a positive and significant impact on the satisfaction of using Web 2.0 for sharing learning resources in HLIs.*
- H4: Trust has a positive and significant effect on continuance usage intention to use Web 2.0 for sharing learning resources in HLIs.*

Collaboration norms refer to the degree to which individuals collaborate, cooperate and work in a team within a society (Kügler et al., 2013). Collaboration norms are crucial for sharing community knowledge (Kügler et al., 2015a). When learners collaborate, the likelihood of sharing learning resources tends to be very high (Kankanhalli et al., 2005). Several studies have demonstrated that collaboration norms have a positive influence on the continuous intention to use technology (Kankanhalli et al., 2005; Kügler et al., 2015b). Likewise, learners with collaborative behaviours using Web 2.0 applications will likely share learning resources among their communities. Therefore, this study postulates:

- H5: Collaboration norms positively and significantly affect the satisfaction of using Web 2.0 for sharing learning resources in HLIs.*
- H6: Collaboration norms positively and significantly affect continuance intention to use Web 2.0 for sharing learning resources in HLIs.*
- H7: Collaboration norms positively and significantly affect self-efficacy in using Web 2.0 to share learning resources in HLIs.*

Self-efficacy refers to an individual's ability to utilise a particular technology or information system (Bandura, 1977). Research has shown that confidence and skills are crucial for motivating individuals when introduced to new technology (Igbaria & Iivari, 1995; Rosli & Saleh, 2022). As most technologies and information systems are perceived to be complex, users' confidence in their ability to use such technologies or information systems is crucial (Kulviwat et al., 2014). In recognition of its importance in technology adoption, it was introduced as a determinant of perceived ease of use in the Technology Acceptance Model (Binyamin et al., 2018; Endang et al., 2018). Further, it has been shown to influence perceived ease of use and usefulness (Binyamin et al., 2018). Additionally, previous studies indicate that a self-efficacious user will likely continue using information systems (Mandari & Koloseni, 2023; Rekha et al., 2023). Hence, the hypotheses:

H8: Self-efficacy has a positive and significant effect on the perceived usefulness of using Web 2.0 for sharing learning resources in HLIs.

H9: Self-efficacy has a positive and significant effect on continuance intention to use Web 2.0 for sharing learning resources in HLIs.

Knowledge-sharing occurs when individuals, groups, families, or communities come together. Technological advancements have enhanced knowledge sharing, with Web 2.0 platforms used by online communities to do so (Singh et al., 2016). Some online users view knowledge sharing as an enjoyable activity that produces positive sensations. Thus, they continue sharing information to maximise enjoyment (Singh et al., 2016). Therefore, the likelihood of users continuing to utilise Web 2.0 will rise as long as the sharing of knowledge results in positive feelings among users. In light of this, this study hypothesises:

H10: Knowledge sharing has a positive and significant impact on the intention to continue using Web 2.0 for sharing learning resources in HLIs.

Confirmation is crucial to the perceived usefulness and satisfaction of information system products or services (Bhattacharjee, 2001b). Studies have shown that users may feel cognitive dissonance when their initial expectations are not confirmed during actual usage (Chiu et al., 2020). As a result, they may not keep using such products or services because their attitude toward them has changed (Festinger, 1962). Moreover, Wang et al. (2021a) Have explained that users with limited experience using IT services or products may not accurately perceive the expected usefulness. This is because the experience of using products or services gradually confirms the perceived benefits. Prior studies have empirically demonstrated that confirmation positively and statistically significantly impacts perceived usefulness and satisfaction (Bhattacharjee, 2001b; Wang et al., 2021b). Similarly, in the context of this study, if users of Web 2.0 confirm the expected perceived benefits during actual usage, they will have a higher level of satisfaction. Based on this, the current study provides the following hypotheses:

H11: The degree of confirmation positively and significantly affects the satisfaction of using Web 2.0 for sharing learning resources in HLIs.

H12: The degree of confirmation positively and significantly affects the perceived usefulness of using Web 2.0 to share learning resources in HLIs.

Perceived usefulness refers to a user's belief that using a specific system will enhance their job performance. Bhattacharjee (2001b) explained that perceived usefulness significantly affects users' satisfaction and intention to continue. Several past studies have confirmed a positive and statistically significant relationship between perceived usefulness and satisfaction, as well as between perceived usefulness and continuance intention, in the context of Web 2.0. Similarly, when users realise the benefits of using Web 2.0 in sharing learning resources, their satisfaction increases, and ultimately, their intention to continue using Web 2.0 is very high (Ferreira et al., 2021). Based on this, the following hypotheses are established:

H13: Perceived Usefulness has a positive and significant effect on the satisfaction of using Web 2.0 for sharing learning resources in HLIs.

H14: Perceived Usefulness has a positive and significant effect on continuance intention to use Web 2.0 for sharing learning resources in HLIs.

Satisfaction is the measurement that determines how services or products meet customers' expectations. Satisfaction is a crucial indicator for determining consumers' behaviour (Chiu et al., 2020). In the ECM-IS model, satisfaction has been considered the key determinant in defining post-adoption behaviours of IS services or products (Igbaria & Iivari, 1995). Consumers who are highly satisfied with products or services are more likely to use them than those who are less satisfied. Prior studies have confirmed that satisfaction positively and significantly influences continuance intention (Igbaria & Iivari, 1995). In the context of the current study, when users are satisfied with Web 2.0, their likelihood of continuing to use it will increase. In line with previous studies, this study postulates:

H15: Satisfaction has a positive and significant effect on continuance intention to use Web 2.0 for sharing learning resources in HLIs.

Self-efficacy has been demonstrated as a moderating agent for perceived usefulness in continuance technology use (Huang & Ren, 2020). When individuals feel confident in their technological use, they are more likely to approach it in a positive manner, leading to increased satisfaction. This implies that a self-efficacious individual is expected to be more satisfied while using technology, such as Web 2.0, compared to a non-self-efficacious individual. It has also been demonstrated that a sense of competence and confidence can increase an individual's desire to share knowledge (Lin, 2007). Similarly, when individuals are confident in using Web 2.0, they are more likely to engage in knowledge-sharing behaviours, such as contributing to online forums or collaborating on digital platforms, which can ultimately enhance their perception regarding using Web 2.0. Therefore, interventions that enhance an individual's self-efficacy, such as training programs, can increase their confidence in technology and ultimately lead to more positive perceptions of its usefulness, satisfaction, and attitudes towards knowledge sharing when using Web 2.0. As such, the following hypotheses are developed:

H16a: Self-efficacy moderates the relationship between knowledge sharing and continuance intention to use Web 2.0 for sharing learning resources in HLIs.

H16b: Self-efficacy moderates the relationship between perceived usefulness and continuance intention to use Web 2.0 for sharing learning resources in HLIs.

H16c: Self-efficacy moderates the relationship between satisfaction and continuance intention to use Web 2.0 for sharing learning resources in HLIs.

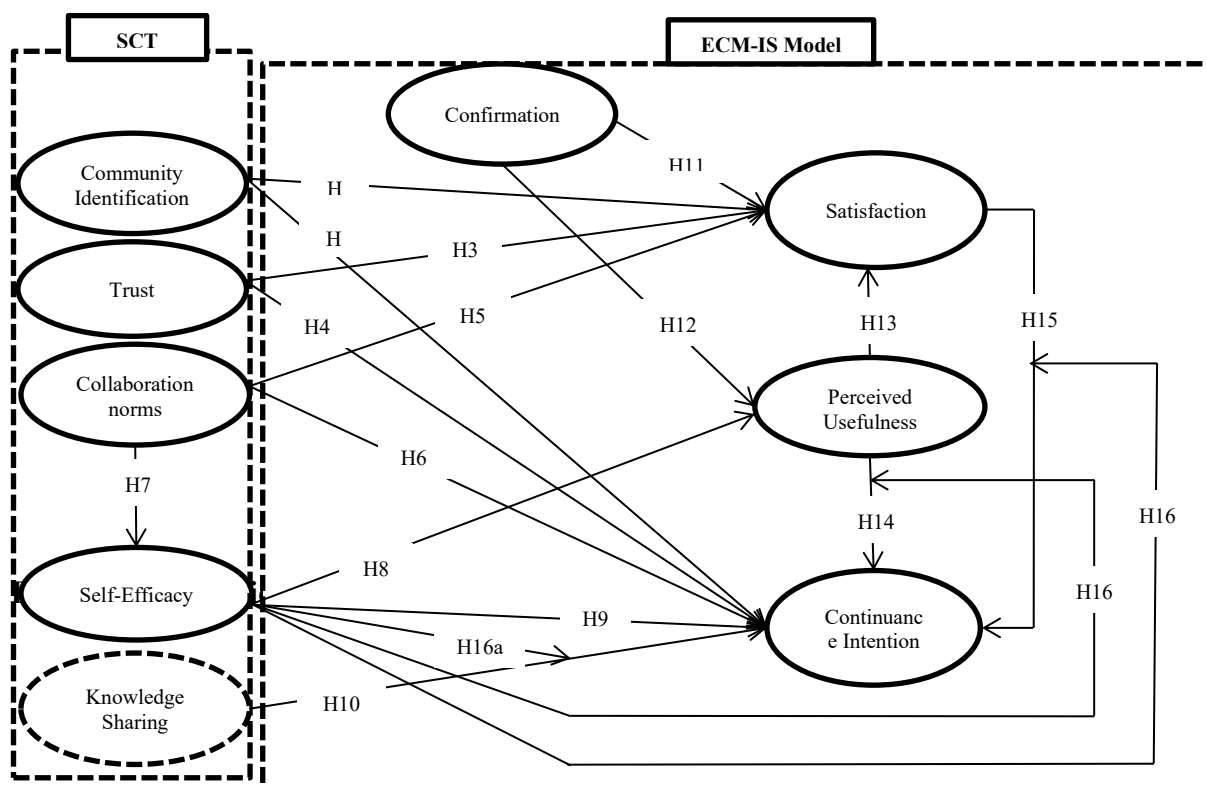


Figure 1: Theoretical Framework of the Study

Methodology

Research Instrument Development

A structured questionnaire was used to collect data for analysis of the predicted relationships. The questionnaire consisted of three main sections: an introduction section, which provided respondents with an overview of the research area and addressed issues related to anonymity and confidentiality; a demographic section, which collected information on respondents' characteristics; and a measurement items section, which included respondents' perceptions. Three (3) items for community identification were adopted from Lin et al. (2017) and Kügler et al. (2015). Four (4) items for the trust were adapted from Chiu et al. (2020) and Bock et al. (2005). Four (4) items for collaboration norms were adopted from Bock et al. (2005) to measure self-efficacy, seven (7) measurement items were adopted from Mhina et al. (2019) and Van Den Hooff and De Ridder (2004), to measure knowledge sharing, four (4) items were adopted from Van Den Hooff and De Ridder (2004) and four (4) items for measuring confirmation were adopted from Rana and Dwivedi (2015). Six items (6) for measuring

perceived usefulness were adopted from Mhina et al. (2019), and six items (6) for measuring satisfaction were adopted from Kurt (2019). Four (4) measurement items for measuring continuance intention were adopted from Bhattacharjee (2001) and Mandari and Koloseni (2022). All forty-two (42) items were measured using a 5-point Likert scale ranging from strongly disagree to agree.

Five experts, including academics and practitioners, joined the panel to review a designed questionnaire, with a particular focus on the validity of its contents. Further improvements were made based on their recommendations. The developed questionnaire was further pre-tested to examine whether the expected respondents could easily understand and respond to the questionnaire items. Perneger et al (2015) suggested that for pre-testing, a sample of 30 respondents is adequate to uncover everyday problems; therefore, snowball sampling was used to select thirty (30) students from five (5) higher learning institutions selected purposively from the University of Dar es Salaam, Institute of Finance Management, College of Business Education, Dar es Salaam Institute of Technology and Ardhi University in the Dar es Salaam region. Respondents were required to identify all unclear and ambiguous content in the questionnaire (Chen & Lin, 2019). Further adjustments were made to accommodate all issues observed during pre-testing. A pilot study was further conducted to examine the internal consistency and stability of the questionnaire. Fifty (50) students who use Web 2.0 to share learning resources were sampled from higher learning institutions using snowball sampling. IBM-SPSS software version 22.0 was used to analyse the loading factors of the data. Three (3) measurement items with a Cronbach's alpha value of less than 0.7 were dropped, as suggested by Chen and Lin (2019) and Nunnally and Bernstein (1994). Thirty-nine (39) items were identified as having a Cronbach's alpha value of 0.7 or greater, indicating that they are reliable for measuring the respective constructs and were therefore considered for the primary survey (see Appendix A).

Sample Size and Sampling

The targeted population of this study consisted of students who utilise Web 2.0 to share learning resources. Myers et al. (2011) and Hatcher and O'Rourke (2013) suggested that the sample size ratio to the number of observed variables should be at least 5:1. Given that the current study had 39 observed variables, the sample size required is approximately 195. The data required in this study were collected using an online survey. An online survey was selected because it is the quickest and most effective method for collecting data in the context of this study (Franque et al., 2021). Because the study population which uses Web 2.0 in HLIs in Tanzania is unknown, and access to the people in HLIs would be costly and time-consuming due to geographical dispersion, the snowball technique was used to identify the respondents in various HLIs. The specified respondents participated in the study via an online platform by completing the questionnaire. Given that the objective of this study was to examine the continuance intention to use Web 2.0 for sharing learning resources, the targeted respondents were required to have experience in using Web 2.0 for this purpose. To ensure that data was collected from existing users, a filter question was used to eliminate non-users of Web 2.0 for sharing learning resources (Ferreira et al., 2021; Teng & Bao, 2022). Several follow-ups were made by communicating with the identified respondents.

Data Analysis

Structural Equation Modelling (SEM) using SmartPLS 3.2.8 was employed to evaluate the quality of the measurement items and test the hypothesised relationships. Meanwhile, the IBM SPSS version 26 was used to analyse descriptive statistics. A two-stage approach to structural equation modelling recommended by Fornell and Larcker (1981) was adopted. The approach requires assessing the quality of the measurement model, followed by the structural model. For measurement model assessment, the model should meet the acceptable threshold values for reliability, validity and multicollinearity. Meanwhile, explanatory power (R^2), predictive relevancy (Q^2), and significance and relevance of path coefficients should be assessed during the structural modelling (Hair et al., 2019).

Results and Findings

After ten (10) weeks, three hundred and twenty-five (325) responses were received. Sixty-eight (68) respondents indicated they had never used Web 2.0 to share learning resources. As a result, they were excluded from the collected responses. The remaining 257 respondents reported using Web 2.0 to share learning resources. Twenty-eight responses were dropped due to suspicious random patterns to reduce potential sampling bias.

Furthermore, the data was examined for missing values; nineteen (19) responses were found to have missing values, with more than 10 per cent in the main variables of the study. Accordingly, all nineteen (19) responses were removed from the dataset (Dong & Peng, 2013). Other responses with less than 10 per cent missing values were analysed to check if the missing values had a significant effect. The analysis employed the MCAR test in conjunction with the Expectation Maximisation (EM) algorithm. The results showed that the impact of the remaining missing values was not statistically significant ($\chi^2 = 66.477$, $df = 63$, $p = 0.358$). Therefore, the missing values were replaced, and finally, two hundred and ten (210) responses were considered complete and valid for further analysis.

Based on such justification, the 210 retained responses were deemed sufficient for model evaluation. Overall, respondents' ages ranged from 18 to 54 years. A total of 64.8 per cent of respondents were male. This is justified by the small number of females enrolled in Tanzania's higher learning institutions (UNESCO, 2022). Correspondingly, 8.4 per cent were certificate holders, 10.7 per cent were diploma holders, 56.6 per cent had an undergraduate degree, 17.5 per cent were master's holders, and 6.8 per cent had a Ph.D. The distribution of occupations for students, librarians, and instructors was 63.3 per cent, 8.1 per cent, and 28.6 per cent, respectively, as shown in Table 1:

Table 1: Respondents' Demographic Details

<i>Category</i>	<i>Group</i>	<i>Frequency</i>	<i>Percentage (%)</i>
Gender	Male	136	64.8
	Female	74	35.2
Age	18 - 24	58	27.6
	25 - 34	84	40.0
	35 - 44	49	23.3
	45 - 54	19	9.1
	Basic Certificate	18	8.4
Education	Ordinary Diploma	22	10.7
	Bachelor's Degree	119	56.6
	Master's Degree	37	17.5
	PhD	14	6.8
Occupation	Students	133	63.3
	Librarian	17	8.1
	Instructor	60	28.6

Evaluation of the Measurement Model

Reliability, discriminant validity, and convergent validity are vital aspects when evaluating the quality of the measurement model (Cheung et al., 2023). Cronbach's Alpha, Dijkstra–Henseler's rho and composite reliability were used as benchmarking criteria to assess the reliability of the measurement model. Item factor loadings and Average Variance Extracted (AVE) were used to evaluate the convergent validity. Fornell-Larcker and Heterotrait-Mono Trait (HTMT) were used to evaluate the discriminant validity. Table 2 indicates that the values for reliability are within the acceptable range, that is, greater than or equal to 0.70 for Cronbach's Alpha and composite reliability (Cronbach, 1951). Moreover, the Dijkstra–Henseler's rho values were above 0.70, confirming the measurement model's reliability (Dijkstra & Henseler, 2015).

Table 2. Measurement Model Reliability Assessment

Construct	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Collaboration Norms (CN)	0.896	0.918	0.95	0.905
Community Identification (CI)	0.945	0.953	0.965	0.901
Confirmation of Expectance (CE)	0.876	0.915	0.922	0.797
Continuance Intention (CIN)	0.955	0.955	0.967	0.880
Knowledge Sharing (KS)	0.922	0.932	0.945	0.811
Perceived Usefulness (PU)	0.959	0.959	0.973	0.924

Construct	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
User Satisfaction (US)	0.968	0.969	0.975	0.887
Self-Efficacy (SE)	0.955	0.957	0.963	0.787
Trust (TR)	0.830	0.846	0.898	0.747

Fornell-Larcker and the HTMT criterion were used to assess discriminant validity. In contrast, convergent validity was evaluated using factor loadings, with shared discrepancies between the measurement items and the constructs gauged through AVE. For convergent validity, the AVE values reported in Table 2 and item factor loadings reported in Table 3 were above 0.5, suggesting that convergent validity had been achieved.

Table 3: Outer Loading Values

Construct	Measurement Item	Outer Loadings
Continuance Intention (CIN)	CIN1	0.939
	CIN2	0.956
	CIN3	0.932
	CIN4	0.926
Knowledge Sharing (KS)	KS1	0.916
	KS2	0.926
	KS3	0.917
	KS4	0.842
Confirmation of Expectance (CE)	CE1	0.887
	CE2	0.911
	CE3	0.880
Community Identification (CI)	CI1	0.963
	CI2	0.937
	CI3	0.948
Collaboration Norms (CN)	CN2	0.960
	CN3	0.943
Trust (TR)	TR1	0.894
	TR2	0.889
	TR3	0.807
Perceived Usefulness (PU)	PU4	0.962
	PU5	0.967
	PU6	0.954
User Satisfaction (US)	US2	0.940
	US3	0.943
	US4	0.958
Self-Efficacy (SE)	US5	0.949
	US6	0.919
	SE1	0.862

Construct	Measurement Item	Outer Loadings
	SE2	0.905
	SE3	0.917
	SE4	0.835
	SE5	0.901
	SE6	0.912
	SE7	0.875

The Fornell-Larcker and HTMT criterion was used to assess the measurement model's discriminant validity. The square root of AVE values was larger than the corresponding correlation coefficients, and the HTMT values were less than or equal to 0.90 (Fornell & Larcker, 1981; Henseler et al., 2015). The measurement model validity evaluation results are indicated in Table 4(a) for convergent validity and Table 4(b) for discriminant validity:

Table 4(a): Discriminant validity Assessment: Fornell–Larcker Criterion

Construct	CN	CI	CE	CIN	KS	PU	US	SE	TR
CN	0.952								
CI	0.729	0.949							
CE	0.009	0.050	0.893						
CIN	0.748	0.708	0.055	0.938					
KS	0.637	0.662	0.179	0.807	0.901				
PU	0.668	0.504	0.016	0.752	0.705	0.961			
US	0.668	0.560	0.112	0.742	0.810	0.860	0.942		
SE	0.644	0.579	0.097	0.784	0.801	0.874	0.918	0.887	
TR	0.134	0.012	0.032	0.001	0.074	0.083	0.151	0.065	0.864

Evaluation of the Structural Model

The structural model was evaluated using the Value Inflated Factor (VIF) for multicollinearity, explanatory power (R^2), out-of-sample predictive power (Q^2), and effect size (f^2). VIF is a measure of multicollinearity, such that a VIF value above 5 indicates the presence of a collinearity issue (Joe F Hair et al., 2011). The results suggest that the VIF for each independent variable in the structural model ranges from 4.724 to 1.104, indicating that collinearity is not a concern in this study. The next step was to evaluate the R^2 for the endogenous constructs. The R^2 values for all endogenous constructs ranged from 0.415 to 0.793, as shown in Table 5. Collaboration norms account for approximately 41.5% of the variation in self-efficacy, and 79.3% of the variation in continuance intention can be jointly explained by perceived usefulness, satisfaction, community identification, trust, collaboration norms, self-efficacy, and knowledge sharing.

Table 4(b): Discriminant validity Assessment: Heterotrait-Monotrait Ratio (HTMT)

Construct	CN	CI	CE	CIN	KS	PU	US	SE
CN	0.798							
CI	0.047	0.082						
CE	0.807	0.743	0.070					
CIN	0.695	0.700	0.188	0.853				
KS	0.713	0.526	0.038	0.786	0.747			
PU	0.708	0.58	0.115	0.771	0.859	0.891		
US	0.687	0.604	0.105	0.819	0.852	0.809	0.753	
SE	0.150	0.072	0.079	0.046	0.107	0.089	0.165	0.079

Furthermore, 76.9 per cent of perceived usefulness variations can be explained by self-efficacy and confirmation, and 77.7 per cent of variations in satisfaction can be jointly defined by community identification, trust, and collaboration norms. As a general rule of thumb, R^2 values of 0.75, 0.50, and 0.25 indicate that the models possess robust, moderate, and weak explanatory power, respectively. (Hair et al., 2011). Therefore, the R^2 values for self-efficacy suggest weak explanatory power, while the R^2 values for continuance intention, perceived usefulness, and satisfaction suggest solid explanatory power. Furthermore, the structural model's out-of-sample predictive power was evaluated using the Partial Least Squares (PLS) prediction procedure. If the model could anticipate that the data deployed in the model was estimated accurately, the model had predictive relevance (Daoud et al., 2023). According to Hair et al. (2011), the Q^2 values greater than zero signify model predictive relevance for a given endogenous construct. The results of Q^2 , as reported in Table 5, unequivocally indicate that the model has acceptable predictive relevance.

Table 5: Coefficients of Determination

Constructs	R^2	Q^2
CIN	0.793	0.681
PU	0.769	0.349
US	0.777	0.566
SE	0.415	0.323

The effect size (f^2) assessment is essential as it complements the null hypothesis (Selya et al., 2012). Therefore, this study examined the effect sizes. According to Cohen (1988), the effect sizes are tremendous or equal to 0.02, 0.15, and 0.35, epitomising small, medium, and large effect sizes of exogenous constructs on the endogenous constructs, respectively. Table 6 presents the effect sizes of exogenous constructs and their corresponding magnitudes on the endogenous constructs:

Table 6: Effect sizes

Endogenous Constructs		CE	CIN	PU	US	SE
Exogenous Constructs	CN		0.108		0.006	0.714
	CI		0.038		0.042	
	CE				0.003	
	KS		0.183			
	PU	0.030	0.039		1.360	
	US		0.033			
	SE		0.044	3.301		
	TR		0.017		0.023	

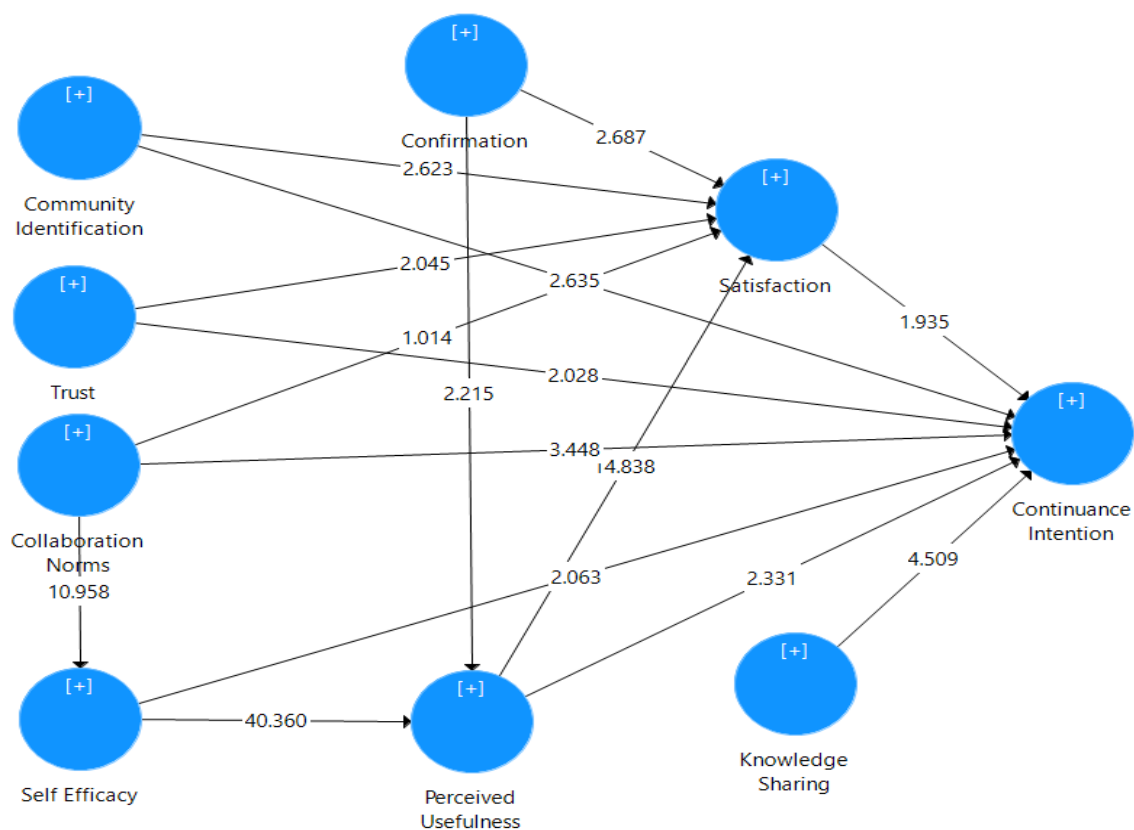


Figure 2: Structural Model Results

Hypothesis Testing

Path analysis was employed to test the study's hypotheses about the research questions. Findings of the hypothesis testing are indicated in Table 7, while the *t*-values are shown in Figure 2. The study found that out of sixteen (16) hypotheses, only three (3) were not supported. In particular, the study found that the relationships between community

identification and satisfaction, as well as community identification and continuance intention, as predicted by H1 and H2, were significant and positive. This finding confirms a linkage between community identification and satisfaction, as well as community identification and continuance intention in using Web 2.0 for sharing learning resources. Similarly, the relationships between trust and continuance intention, as well as trust and satisfaction, were significant and positive; hence, *H3* and *H4* were supported. In contrast, community trust influenced both satisfaction and intention to continue using Web 2.0 for sharing learning resources. This finding unequivocally concludes that community trust has a significant influence on satisfaction and intention to continue using Web 2.0 to share learning resources among individuals in higher education institutions. Unexpectedly, the relationship between collaboration and satisfaction, as represented by *H5*, was not found to be significant. Additionally, collaboration norms were found to influence continuance intention to use Web 2.0 for sharing learning resources; hence, *H6* was supported.

Furthermore, the study also found that the influence of collaboration on self-efficacy was positive and significant; thus, hypothesis *H7* was confirmed, indicating that collaboration norms have a positive influence on self-efficacy in using Web 2.0 for sharing learning resources. The study demonstrated that self-efficacy has a positive and significant effect on perceived usefulness and intention to continue using Web 2.0 for sharing learning resources. Therefore, hypotheses *H8* and *H9* were confirmed. Findings also show that knowledge sharing has a positive and significant influence on continuance intention, confirming hypothesis *H10*. This finding suggests that knowledge sharing has a positive influence on the intention to continue using Web 2.0 for sharing learning resources.

Moreover, the influence of confirmation on satisfaction and perceived usefulness was positive and significant. These findings indicate that confirmation influences satisfaction and perceived usefulness in continuing to use Web 2.0 for sharing learning resources, as predicted in hypotheses *H11* and *H12*. The hypothetical relationships between perceived usefulness and satisfaction, as denoted by *H13*, and perceived usefulness and continuance intention, as denoted by *H14*, were positive and significant, respectively. This finding suggests that perceived usefulness influences both satisfaction and intention to continue using Web 2.0 for sharing learning resources. Contrary to expectations, the influence of satisfaction on continuance intention was nonsignificant; therefore, hypothesis *H15* was not confirmed.

Table 7: Results of Hypothesis Testing

<i>Hypotheses and Paths</i>				<i>Path Coefficient</i>	<i>t-Statistics</i>	<i>p- Values</i>	<i>Remarks</i>
<i>H1</i>	CI	→	US	0.051	2.623	0.009	Supported
<i>H2</i>	CI	→	CIN	0.055	2.635	0.007	Supported
<i>H3</i>	TR	→	US	0.037	2.045	0.041	Supported
<i>H4</i>	TR	→	CIN	0.031	2.028	0.043	Supported
<i>H5</i>	CN	→	US	0.062	1.014	0.311	Not Supported
<i>H6</i>	CN	→	CIN	0.071	3.448	0.001	Supported
<i>H7</i>	CN	→	SE	0.059	10.958	0.000	Supported
<i>H8</i>	SE	→	PU	0.022	40.36	0.000	Supported
<i>H9</i>	SE	→	CIN	0.121	2.063	0.039	Supported
<i>H10</i>	KS	→	CIN	0.086	4.509	0.000	Supported
<i>H11</i>	CE	→	US	0.034	2.687	0.007	Supported

<i>Hypotheses and Paths</i>	<i>Path Coefficient</i>	<i>t-Statistics</i>	<i>p- Values</i>	<i>Remarks</i>
H12 CE → PU	0.031	2.215	0.027	Supported
H13 PU → US	0.050	14.838	0.000	Supported
H14 PU → CIN	0.099	2.331	0.020	Supported
H15 US → CIN	0.121	1.935	0.053	Not Supported

Results of Moderation Effects

Moderation effects were estimated using the product indicator method because it has higher prediction accuracy than other methods (Ramayah et al., 2018). Accordingly, the study found that, contrary to expectations, none of the three moderation hypotheses were significant predictors of the intention to continue using Web 2.0 for sharing learning resources, as shown in Table 8. The finding suggests that the interaction between self-efficacy, satisfaction, perceived ease of use, and knowledge-sharing attitude does not significantly impact the intention to continue.

Table 8: Results of Moderation Analysis

<i>Hypotheses and Paths</i>	<i>Path Coefficient</i>	<i>t-Statistics</i>	<i>P Values</i>	<i>Remarks</i>
H16a KS*SE → CIN	-0.100	-0.107	0.469	Not Supported
H16b PU*SE → CIN	0.018	0.034	0.851	Not Supported
H16c US*SE → CIN	0.085	0.116	0.648	Not Supported

Results of Important Performance Matrix Analysis (IPMA)

The importance-performance matrix (IPMA) is a valuable tool for analysing the relative importance of predictors and identifying critical areas for improvement to optimise performance or decision-making processes. The study results in Table 9 suggest that collaboration norms and knowledge-sharing attitudes are essential predictors of continuance intention, having a relatively high total effect compared to other constructs. Therefore, decision-makers and practitioners should prioritise improving collaboration norms and knowledge-sharing attitudes to motivate the usage of Web 2.0 for sharing learning resources.

Table 9: Importance Performance Matrix Analysis

<i>Constructs</i>	<i>Total Effects</i>	<i>Performance (Index Values)</i>
Community Identification	0.112	59.57
Trust	-0.080	73.28
Collaboration Norms	0.425	71.07
Self-Efficacy	0.300	67.66
Perceived Usefulness	0.057	75.92
Knowledge Sharing	0.386	66.50
User Satisfaction	-0.234	69.93

Discussion

The study's research model has confirmed thirteen (13) hypothetical relationships. Specifically, community identification influences user satisfaction (*H1*), community identification has a direct impact on Web 2.0 continuance usage intention (*H2*), trust influences user satisfaction (*H3*), trust (*H4*) and collaboration norms (*H6*), have a direct impact on Web 2.0 continuance usage intention, self-efficacy has a direct influence on user perceived usefulness and Web 2.0 continuance usage intention (*H8*) and (*H9*), respectively. Further, knowledge sharing has a direct influence on Web 2.0 continuance usage intention (*H10*), and confirmation has a direct influence on user satisfaction (*H11*) and user-perceived usefulness (*H12*). Moreover, perceived usefulness directly influences user satisfaction (*H13*) and the intention to continue using Web 2.0 (*H14*).

The positive relationship between community identification and continuance intention is supported by Hsiao and Chen (2022) and Zhou et al. (2019). These studies suggest that a sense of belonging (community identification) to a group or community can significantly impact their intention to continue participating in activities related to that group or community, such as using social networking and microblogging sites. In the context of Web 2.0 platforms for sharing learning resources, community identification can be seen as an essential factor in encouraging ongoing participation and engagement. As observed in previous studies by Hsiao and Chen (2022), community trust has a positive impact on the intention to continue using Web 2.0 for sharing online resources. The findings also confirmed that collaboration norms, self-efficacy, knowledge sharing and perceived usefulness significantly affect continuance intention, which agrees with most previous studies on continuance intention (Jo, 2023; Liao et al., 2013; Popp & Woratschek, 2017; Sharma et al., 2022a). This means the motivation to continue using Web 2.0 for sharing learning resources among students and lecturers in higher learning institutions is driven by high levels of trust, deep-rooted collaboration, confidence and skills in using Web 2.0, knowledge sharing attitude and the perception of the usefulness of the Web.20 for sharing the online resources among users.

The study also found that community identification, trust, confirmation, and perceived usefulness have a direct and positive influence on satisfaction. The significant relationship between community identification and satisfaction confirms previous studies, which found that as community identification increases, satisfaction increases accordingly (Chen & Lin, 2019; Popp & Woratschek, 2017). This is because, as community members relate well, it enables the development of social connections for mutual interests (Wann, 2006), eventually creating a sense of satisfaction in sharing online learning resources using Web 2.0. Concerning the relationship between community trust and satisfaction, the outcome is supported by previous studies (Hwang et al., 2022; Ismail et al., 2019; Venkatakrishnan et al., 2023). These studies have shown that as trust between community members increases, members feel more comfortable sharing online resources and, consequently, become more satisfied with the experience of sharing online learning resources. Conversely, users who do not trust the community are less likely to participate and may feel dissatisfied with their experience. The relationship between trust and satisfaction is crucial for online resource sharing, as satisfaction can, in turn, reinforce trust in the community, ultimately creating a positive feedback loop between trust and satisfaction.

The results reveal that collaboration does not significantly influence satisfaction with using Web 2.0. This result is like the results from Slavin (1983) and Kuo et al. (2014). This finding could be attributed to the fact that Web 2.0 users do not perceive any incentive for sharing learning resources through Web 2.0. Studies have shown that, in collaborative learning, when an individual receives no incentive, the level of satisfaction tends to be very low (Kuo et al., 2014; Slavin, 1983). Consistent with other studies, the results indicate that confirmation of users' expectations in using Web 2.0 for sharing learning resources triggers satisfaction. (Al-Sharafi et al., 2022; Rahi et al., 2022; Yang et al., 2022). These findings suggest that as users' expectations of Web 2.0 are realised, they become satisfied, and vice versa.

Furthermore, the study's results confirmed that users' satisfaction levels also increased as their perception of the usefulness of using Web 2.0 for sharing learning resources improved. This finding collaborates with previous studies (Al-Bashayreh et al., 2022a; Dokhanian et al., 2022). Apart from influencing satisfaction, the study found that collaborative norms can affect an individual's self-efficacy in using Web 2.0 for sharing learning resources.

Self-efficacy enhances users' confidence in ICT systems and increases their perceived usefulness (Al-Bashayreh et al., 2022b). Furthermore, individuals tend to utilise ICT systems and services if they believe they can enhance their skills and find them valuable (Sharma et al., 2022b). These assertions have been confirmed in this study. As an individual's computer self-efficacy increases, the perceived usefulness of using Web 2.0 for sharing e-learning resources also increases. On the other hand, collaboration norms influence computer self-efficacy. As a sense of collaboration is built within the higher learning community, the confidence in using Web 2.0 to share e-learning resources also increases. When collaborative norms are positive and supportive, they can enhance an individual's self-efficacy by offering an avenue for sharing Web 2.0 learning resources. This finding is consistent with previous studies, which found that collaborative norms positively influence teachers' self-efficacy in different contexts (Bahaddin Acat, 2008; De Neve et al., 2015; Devos et al., 2012; Sehgal et al., 2017).

Nevertheless, the study found that satisfaction with using Web 2.0 does not increase the prospect of users continuing to use it to share learning resources. This finding is congruent with Shephard and Färe (1974) but contrary to previous studies (Pierce & Aguinis, 2013a; Shephard & Färe, 1974). Applying the perspectives of the law of diminishing marginal returns (Brue, 1993) and the *too-much-of-a-good-thing effect* (Pierce & Aguinis, 2013b), probably the level of satisfaction in using Web 2.0 for sharing learning resources has already reached its saturation point; therefore, satisfaction is no longer an essential factor to drive users to continue using Web 2.0. Moreover, studies have shown that sometimes users may keep on using the system not because they are satisfied but because they believe using the system will fulfil the purposes (Ding, 2019; S. S. Kim, 2020). Therefore, this could also be the reason for this case. Users are unsatisfied, but they believe that Web 2.0 tools will enable them to share learning resources quickly and easily. In contrast, collaborative norms do not appear to have an impact on satisfaction. The inadequate community collaboration may be why there is no increase in satisfaction with the ongoing use of Web 2.0 platforms for sharing learning resources. As a result, this study does not support the proposed relationship between collaborative norms and satisfaction. Lastly, self-efficacy does not moderate the relationship between perceived usefulness, satisfaction, and knowledge-sharing attitude, contrary to the

expectations of the study's hypotheses. The study population is likely to be self-efficacious in using Web 2.0 for academic purposes. Thus, the relationships between self-efficacy and these factors remain unaffected.

Theoretical Implications

This study provides several theoretical and practical implications. The study presents a unique research framework that merges social cognitive theory (SCT) and the expectation confirmation model (ECM-IS) to examine the continuance usage behaviour of using Web 2.0 to share learning resources. To the researchers' knowledge, this is the first instance where two theories have been combined in this manner to inform policymakers and practitioners of the continuance intention of using Web 2.0 for sharing learning resources. This integration provides a better understanding of examining the continuance behaviour of Web 2.0 users. Additionally, the study investigates how self-efficacy moderates the relationships between satisfaction, knowledge-sharing attitude and perceived usefulness on continuance intention, which has not been previously explored. Thus, this study's findings enrich the body of knowledge by using Web 2.0 for knowledge sharing in the context of Higher learning Institutions.

Practical Implications

The study identified community identification, trust, collaboration norms, self-efficacy, knowledge sharing, and perceived usefulness as predictors of the intention to continue using Web 2.0 for sharing learning resources. To achieve sustainable usage, service providers could provide short videos that demonstrate the platform's functionalities and "how-to" features, enabling users to continue using the platform for sharing resources. Similarly, service providers should focus on perceived usefulness, expectation confirmation, and trust community identification to enhance satisfaction. The service provider should focus more on monitoring the post-adoption behaviour of Web 2.0 users to improve the platform's performance continually. Developers should continually fix bugs and optimise performance parameters to ensure user satisfaction with platform performance. Moreover, investing in enhancing the attitude towards knowledge sharing and the perceived usefulness of Web 2.0 could significantly boost users' continuance intention satisfaction, as the magnitude of influence produced by these factors on continuance intention and satisfaction is substantial. While perceived usefulness plays a significant role in increasing users' satisfaction, it is also boosted in the background by the self-efficacy of users of Web 2.0 platforms. The outcome of the moderation role of self-efficacy on the relationship between satisfaction, knowledge sharing and perceived usefulness, and continuance intention implies that the increase in competence and skills in using Web 2.0 does not heighten the magnitude of the relationships between these variables and the intention to continue using Web 2.0 for sharing learning resources in higher learning institutions. This finding suggests that investing in raising self-efficacy to promote the relationship between these constructs and continuance intention to use Web 2.0 for sharing learning resources is irrelevant.

Conclusion

This study developed a novel model, combining Social Cognitive Theory (SCT) with the Expectation-Confirmation Model of Information Systems (ECM-IS) and knowledge-sharing attitudes, to examine the factors driving Tanzanian higher education students' continued use

of Web 2.0 for sharing learning resources. It also investigated the moderating effect of self-efficacy, offering a unique contribution to understanding Web 2.0 continuance usage in educational contexts. The study found that social cognitive perspectives (community identification, trust, collaborative norms, knowledge sharing, and self-efficacy) do influence user satisfaction, perceived usefulness, and continuance usage intention of Web 2.0, collaborative norms do influence user self-efficacy, confirmation of user expectations directly influence user satisfaction and perceived usefulness of Web 2.0, and perceived usefulness influence user satisfaction and continuance usage intention of Web 2.0. However, the study found that self-efficacy does not moderate the relationship between knowledge sharing, perceived usefulness, satisfaction and continuance usage intention of Web 2.0.

Furthermore, the study concluded that community identification, trust, collaboration norms, self-efficacy, knowledge sharing, and perceived usefulness are significant predictors of the intention to continue using Web 2.0 for sharing learning resources. These predictors, combined, explain 79.3 per cent of the total variation in continuance intention. The study also revealed that self-efficacy does not moderate the relationship between perceived usefulness, satisfaction, and knowledge sharing. The results of the IPMA have indicated that collaboration norms and knowledge-sharing attitudes are important predictors of continuance intention. Thus, practitioners and decision-makers should prioritise these factors to enhance the intention to continue using Web 2.0 for sharing learning resources in higher learning institutions.

Limitations and Future Research

Although our study has meaningful implications, its findings should be cautiously applied due to several limitations. Firstly, the study used snowball sampling, relying on existing participant referrals. This sampling approach may result in a sample that is not representative of the larger population, thereby limiting the generalisability of the results to other contexts or populations. Secondly, the study employed a self-reported questionnaire, which may introduce bias during data collection. However, to reduce bias, the measurement items were borrowed from pre-validated measures with good psychometric properties (i.e. reliability and validity) and pre-tested. A probability sampling approach may be applied in future studies to obtain a representative sample and enhance generalisability. Additionally, complementing the questionnaire with non-self-reported measurement instruments, such as interviews, could help to reduce bias and provide additional insights into the study.

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1 Appendix A: Constructs and Measurement Items

Construct	Code	Measurement Items
Perceived Usefulness	PU1	I find Web 2.0 to be useful in sharing learning resources
	PU2	Using Web 2.0 will enable me to share learning resources more quickly.
	PU3	Using Web 2.0 tools for sharing learning resources will increase my productivity.
	PU4	Using Web 2.0 tools enables me to share learning resources conveniently.
	PU5	Using Web 2.0 tools would enhance my effectiveness in sharing learning.
	PU6	Using Web 2.0 tools saves my time.
Trust	TR1	People at my University/Institute will not take advantage of others, even if the opportunity arises.
	TR2	In general, people can rely on one another at my University/Institute.
	TR3	Overall, the people at my University/Institute are trustworthy.
Collaboration Norms	CN1	There is a norm of collaboration in my University/ Institute
	CN2	Knowledge sharing is highly regarded at my University/Institute.
	CN3	Sharing information is strongly encouraged within the University/Institute.
Community identification	CI1	People at my University/Institute have a sense of togetherness or closeness with one another.
	CI2	People at my University/Institute have a strong sense of being 'one team'.
	CI3	People at my University/Institute maintain close ties with one another.
Self-Efficacy	SE1	I can use the Web 2.0 tools for sharing learning resources if manuals are available.
	SE2	I can utilize Web 2.0 tools for sharing learning resources, even if there is no one around to guide me through their use.
	SE3	I feel confident using Web 2.0 tools for sharing learning resources.
	SE4	I can use the Web 2.0 tools for sharing learning resources without detailed instructions on its use.
	SE5	I would feel comfortable while using the Web 2.0 tools for sharing learning resources on my own
	SE6	Generally, I am proficient in utilizing Web 2.0 tools for sharing learning resources.
Confirmation of Expectation	CE1	Using Web 2.0 tools for sharing learning resources will increase my effectiveness.
	CE2	If I utilize Web 2.0 tools for sharing learning resources, I will enhance the quality of my output.
	CE3	If I use the Web 2.0 tools for sharing learning resources, I will increase the quantity of output for the same amount of effort.
User Satisfaction	US1	I do not have a positive attitude or evaluation about the way the Web 2.0 tools function in sharing learning materials.
	US2	I think the Web 2.0 tools for sharing learning resources are very helpful.
	US3	Overall, I am satisfied with the Web 2.0 tools.
	US4	My experience with using Web 2.0 tools exceeded my expectations.
	US5	The functionalities provided by Web 2.0 tools for sharing learning resources exceeded my expectations.

	US6	Overall, most of my expectations for using Web 2.0 tools to share learning resources were confirmed.
Knowledge Sharing	KS1	When I learn something new, I share it with my classmates.
	KS2	I share learning resources with students in my class.
	KS3	I share my learning resources with my fellow students at my University/Institution.
	KS4	When I learn something new, I share it with students outside of my class.
	KS5	I share learning resources with students outside of my class.
Continuance Intention	CIN1	I intend to continue using Web 2.0 tools for sharing learning resources in the future.
	CIN2	I intend to increase my use of Web 2.0 tools for sharing learning resources in the future.
	CIN3	I would continue to use Web 2.0 tools for sharing learning resources as regularly as I do now.
	CIN4	I will strongly recommend others to use Web 2.0 tools for sharing learning resources.