

DESIGNING A FRAMEWORK FOR ENHANCING THE ONLINE KNOWLEDGE-SHARING BEHAVIOR OF ACADEMIC STAFF

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ABSTRACT

The main objective of this paper is to identify the factors that influence academic staff's digital knowledge-sharing behaviors in Ethiopian higher education. A structural equation model was used to validate the research framework using survey data from 210 respondents. The collected data has been analyzed using Smart PLS software. The results of the study show that trust, self-motivation, and altruism are positively related to attitude. Contrary to our expectations, knowledge technology negatively affects attitude. However, reward systems and empowerment by leaders are significantly associated with knowledge-sharing intentions. Knowledge-sharing intention, in turn, was significantly related to digital knowledge-sharing behavior. The contributions of this study are twofold. The framework may serve as a roadmap for future researchers and managers considering their strategy to enhance digital knowledge sharing in HEI. The findings will benefit academic staff and university administrations. The study will also help academic staff enhance their knowledge-sharing practices.

KEYWORDS

Higher education institution, digital knowledge-sharing behavior, theory of reasoned action, institutional web technologies.

1. INTRODUCTION

There is a growing recognition in modern higher education institutions (HEI) of the importance of knowledge and technology as critical resources for achieving long-term competitive advantage. By maintaining continuous interaction, academic staff can collaborate in real-time in appropriate learning environments [1]. Knowledge, a fundamental asset for higher education, resides with the academic staff and needs to be shared. HEI is a knowledge-based organization, which is a place where knowledge is created and shared. This is because the HEI has more experts or professors, and these professors can share their knowledge, so the overall quality of education will successfully increase [2]. However, if an academic staff member is unwilling, knowledge sharing (KS) may be difficult to implement. Therefore, HEI must stress the academic staff's sharing behavior and the importance of sharing experiences and skills for the overall benefit of the HEI [3]. Proper knowledge handling and allocation can also influence sharing behavior [4]. However, prior research indicates that Ethiopian HEIs are suffering from the loss of academic staff knowledge, which is poorly managed even though it is essential for their survival [5]–[7]. The reason given is that most Ethiopian universities, particularly those located in rural areas, have high employee turnover. Because of this, all the experience and skills of the ex-staff, such as the teaching-learning scheme of the university, knowledge acquired from different pieces of training

and workshops, and the like, will not be university resources. Another factor is academic staff leaving the institution for further education, which will result in the loss of previously stated knowledge. As a result, newly hired and reinstated staff who have returned from a long educational leave may use their method of teaching, which will not be documented. In all of these cases, the researchers discovered that it is necessary to explicitly manage the knowledge of the academic staff on the university knowledge repository (institutional web technology) by detecting factors that hinder the knowledge-sharing behavior (KSB) of academic staff within the HEI.

The role of technology is critical here, as it provides the ability to design and provide modules for leveraging academic staff interaction with various aspects of the knowledge chain [8]. Technology acts as a sustainable knowledge ecosystem by allowing academic staff to create, collaborate, store, and share knowledge [9]. The successful implementation of a variety of technological systems has been a critical focus for the majority of HEI to enable knowledge creation and sharing. According to [10] classified two types of web technologies: public web technologies and institutional web technologies. Public web technologies are hosted in the public domain by commercial providers, and membership is usually open to all. However, the current study does not focus on public web technologies but rather on institutional web technologies and their ability to support intra-organizational knowledge sharing. Many organizations, including universities, are interested in institutional web technologies as a knowledge management system. Universities have been at the forefront of website development, which has subsequently led to the development of institutional web technologies to provide more compressed links to information resources. Because academic staff must access required knowledge online, institutional web technologies are becoming increasingly important. Universities must have a dynamic connection with the academic staff by sharing institutional knowledge via institutional web technologies and helping the staff navigate messy information on the Web. These technologies facilitate access to diverse knowledge of the institution and build social relations necessary for KS [11]. Indeed, many authors emphasized the significance of web technologies in promoting KS. According to [12], academic staff who share their knowledge on an online platform may experience feelings of autonomy, competence, and belonging to their job. When academic staff feels competent while using the platforms, they are more satisfied and share their knowledge more actively online, especially when they believe that these platforms make them more competent while performing their tasks. Through access to a wide range of resources, technology can improve academic performance [13].

There are several types of institutional web technologies with various utilities that benefit academic staff. Institutional web technologies serve as a portal to online network resources accessible via the intranet, extranet, or Internet. In general, institutional web technologies enable academic staff to access knowledge from multiple sources in an integrated manner. Institutional web technologies represent shared spaces of interaction that allow academic staff to get to know one another, better collaborate and coordinate, absorb the information they need, avoid misunderstandings, solve problems, and complete their tasks. This may encourage them to share their knowledge with members of their institution. These institutional web technologies are used by academic staff who are connected to the institutional network or intranet. Institutional web technologies provide academic staff with up-to-date information, such as management system documents, applications, online training, and so on, as well as the ability to communicate via email, messaging, or web meetings. As a result, institutional web technologies have emerged as the technology of choice for intra-institutional communication and a key enabler of knowledge sharing [14].

Literature has also identified and grouped these success issues into three pieces: "individual, organizational, and technological" factors [15]–[17]. However, the majority of KS research has focused on the business sector. Examples include the health sector [17], [18], the banking sector [19], culture, and tourism [20]. Having said that, few studies on factors influencing KS have been

conducted in Ethiopian universities. Similarly [21] describe a study of academics' KSB in Ethiopian public universities that focuses on how specific variables have a positive effect on KS and does not take into account teaching and learning activities other than research publications. Further [7] conducted a study in nine Ethiopian universities, considering individual, infrastructural, organizational, and technical factors. Respondents were selected from IT-related departments and offices using the theory of planned behavior, but it does not consider the other academic staff's behaviors, and this study does not have any framework. According to the literature, there is a lack of studies on identifying factors affecting the digital KSB of academic staff, focusing on an individual, organizational, and technological factors using the theory of reasoned action among academic staff in HEIs, particularly at Ethiopian HEIs. This study also proposes a KS framework. The study expands on the premise and carefully examines the framework to better understand the factors that influence academic staff knowledge sharing behavior on institutional web technologies. In addition, structural equation modeling (SEM) was used to test and validate the proposed framework and hypotheses. Keeping this in mind, the following research questions will be addressed in this study:

RQ1. What factors influence academic staff knowledge-sharing behavior when using institutional web technologies at HEIs?

RQ2. What is the appropriate knowledge-sharing framework for using institutional web technologies in HEIs?

The paper is structured as follows. Including the introduction part presented in section one, the next section highlights the literature review. Research models and hypotheses are discussed in the third section. The research method and data collection are discussed in the fourth section. In the fifth section, the results of the study are presented. Next in section six the discussion of the study is presented. The final section presents the conclusion of the study.

2. LITERATURE REVIEW

Knowledge is the primary asset for organizations and individuals seeking to compete in the knowledge world. There are various definitions of knowledge in the literature. Among these, knowledge is defined as “a collection of information in an organization's or an individual's mind that is useful for making better decisions in the organization”[22]. Similarly, [23] divided knowledge into two broad categories: explicit knowledge and implicit knowledge. Explicit knowledge is codified and available in written documents such as books, journals, and databases. Tacit knowledge exists in the individual's mind and can be gained through experience [24]. Knowledge sharing can also be defined as the transmission, distribution, and exchange of understanding and valuable information among company employees [22]. KS is becoming increasingly important in higher education to support the teaching-learning process and research activities [25]. The goal of KS is to use it in daily activities to encourage teamwork among academic staff and to improve the overall knowledge of academic staff and higher education [25]. However, the academic staff appears unwilling to share knowledge. According to [26], most employees are unwilling to share if the organization does not tolerate their mistakes, lacks trust, and lacks good knowledge.

Furthermore, some literature argues that academic staff's willingness to share their digital resources influences the achievement of company missions and goals [25]. However, motivating academic staff to share their knowledge is a difficult task. The issues of what should be done to motivate academic staff to share their knowledge via the university web technology, how to incentivize them, and what factors influence the success or failure of KS are missing from the literature in HEI, while they have been debated in business sectors from various perspectives [25]. Some literature argues that trust among employees [17], self-motivation [27], altruism [28],

a proper reward system [29], the availability and accessibility of IT infrastructure [30], and empowerment provided by the organization[31] are factors influencing KSB. However, this literature focused on business organizations, which differ from KS cultures in HEIs and lack the behavior of individuals to use institutional web technology for KS purposes. To benefit from HEI knowledge, we must first identify the fundamental factors influencing academic staff KSB within HEIs.

In this study, web technology, institutional web technology, and knowledge repositories are used interchangeably. Similarly, in[32],the terms "web technology" and "research repositories" were used interchangeably. A knowledge repository is a warehouse where knowledge can be used as a strategic source [12]. Then,academic staff will be able to contribute knowledge to the repository [12]. As a result, knowledge can be reused for learning, teaching, and academic research output[12], [33]. However, using the repository for KS requires academic staff to be motivated through a variety of mechanisms (for example, a rewards system and empowerment by leaders). However, research on this topic in HEI is extremely rare. In addition, digital KS and online KS are used interchangeably in this study.

According to[34] and [35], the reason for this is that the concepts of KS have not been as well studied as they have been in the business sectors. However, HEIs, particularly Ethiopian HEIs, are suffering from staff turnover, with academic staff leaving the university even though higher education relies heavily on these academic staff. Given this, HEIs must develop well-structured mechanisms for KS strategies for retaining academic staff knowledge. As a result, identifying factors and encouraging academic staff to share their knowledge and experiences on institutional web technology, which will be accessible to all university members, is a critical issue.However, the researchers discovered a lack of studies discussing the issues influencing academic staff KSB toward digital resource sharing via university web technology, as well as a lack of KS frameworks that serve as a guide for digital KS among academic staff. As a result, the goal of this paper is to provide a conceptual framework for determining and identifying the factors that influence academic staff KS behavior when using university web technology in Ethiopian public universities.

3. RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

To examine and explore the factors that influence academic staff behavior to share knowledge using institutional web technologies, this study proposed a research framework by synthesizing the theory of reasoned action (TRA) [36] with other additional variables (such as trust, self-motivation, altruism, knowledge technology, empowerment by leaders, and an effective reward system) from prior literature. This theory was proposed by[36]. TRA was chosen for its comprehensiveness in accounting for the factors recognized by multiple theories of technology adoption over the years to explain the usage and sharing behavior. Following TRA,[36] observed that the greater the intention to practice, the greater the likelihood of engaging in that specific behavior. It is worth noting that the proposed framework modifies the original theory of reasoned action by removing the "subjective norm" construct and replacing it with literature constructs such as self-motivation, altruism, knowledge of technology, trust, empowerment by leaders, and an effective reward system. For simplicity, these constructs are classified as individual, organizational, and technological factors in this study. Four latent variables influence the mediating variable KS attitude, and two variables influence KS intention toward actual digital KSB (see Figure 1 below).

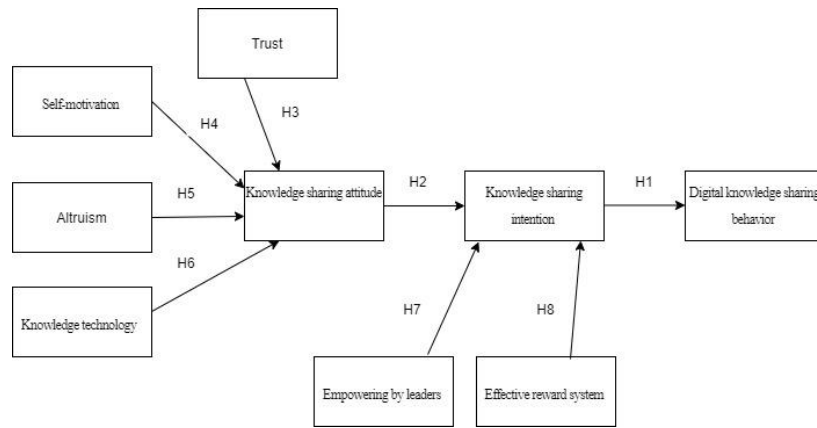


Figure1. The proposed conceptual framework of the study

The following hypothesis has been articulated based on the conceptual framework proposed for this study.

➤ **Digital Knowledge-Sharing Intention**

Behavioural intention (BI), or the intention to use technology, lies in the TRA[36] and explains a significant portion of a user’s technology usage behaviour. The present research aims at evaluating the usage behavior of institutional web technologies for knowledge sharing in HEI settings. Previous research has found a direct relationship between knowledge-sharing intention (KSI) and knowledge-sharing behavior (KSB). Studies supporting this argument are [1], [35], and [36]. According to the argument, the greater the intention to participate in KS, the higher the KSB achieved. Based on this, the following hypothesis is proposed:

H1: Knowledge-sharing intention is directly related to digital knowledge-sharing behavior among academic staff within HEI.

➤ **Attitude to Knowledge Sharing Intention**

Attitude refers to the degree to which academic staff has positive feelings about sharing resources and ideas with those with whom they have developed close relationships [39]. Web technology is a collection of different instructional platforms that enable collaborative instructional approaches [40]. Because academic staff attitudes toward behavior are significant predictors of intention to engage in that behavior. According to the literature, individuals' positive attitudes toward KS have a direct relationship with their intention to share knowledge [2], [37], [38]. As a result, we can anticipate that when academic staff has a positive attitude toward knowledge sharing, their intention to share knowledge will be positive as well. The following hypothesis is established:

H2: Attitude has a direct relationship with the academic staff's intention to share knowledge within HEI.

3.1. Individual Factors

Individual factors that influence knowledge-sharing intention include trust, self-motivation, and altruism, all of which are hypothesized to be investigated in this study.

3.1.1. Trust

Individual relationships promote KSI; however, if individuals do not trust each other or have a low level of trust, their willingness to share is limited. According to [30], trust has a direct relationship with individuals' attitudes toward KSI. According to [41], trust is one of the most important factors in the use of web technology in higher education institutions. Similarly [42] also found that trust in websites influences behavioral intention. The following hypothesis is proposed as a result of this:

H3: Trust in the website has a direct relationship with academic staff attitudes toward knowledge-sharing intentions within HEI.

3.1.2. Self-Motivation

Individual intentions exist in the human mind and lead to ongoing desires and exertions regarding specific behaviors [27]. The degree to which academic staff enjoys online knowledge sharing is referred to as "self-motivation." Academic staff who enjoy sharing knowledge may be motivated by moral obligation, and thus moral obligation will take precedence over the desire to maximize self-interest [43]. According to [30], KS cannot occur when there is a lack of self-motivation to share their understanding. Academic staff who enjoy online knowledge sharing are more likely to contribute. Academic staff who enjoy assisting others may be more motivated to share knowledge because they gain satisfaction and a sense of usefulness from doing so [44]. As a result, the following hypothesis is articulated:

H4: Self-motivation has a direct relationship with academic staff attitudes toward knowledge-sharing intentions within HEI.

3.1.3. Altruism

Altruism is defined as the willingness to help others without expecting benefits in return [28]. In HEIs, altruism is critical for developing academic staff loyalty and commitment [22]. In line with this, [27] demonstrated that altruism is an important factor in interpersonal relationships and is also useful in establishing KS. This demonstrates that altruism increases in behavior when people feel satisfied and pleased by helping others [27]. Similarly [45] proposed that altruism affects the attitude toward sharing knowledge. Based on this argument, the following hypothesis is proposed:

H5: Altruism has a direct relationship with attitudes to share knowledge via institutional web technology.

3.2. Technological Factor

To deal with the technological factors, knowledge technology is hypothesized in this study.

3.2.1. Knowledge Technology

Knowledge technology is defined as the competence of the academic staff in the use of the system for knowledge sharing and compatibility with the new technology. Knowledge technology has an impact on academic staff's intention to share. According to [4], the availability and accessibility of information technology (IT) resources, are critical for expanding the academic staff at KSI. As a result, information and communication technology (ICT) applications aid individuals in communicating and sharing educational materials. According to [15], the

availability of IT infrastructure ensures that a large amount of information is made available to staff. However, having an IT infrastructure alone will not motivate academic staff to share their knowledge unless the academic staff has technical skills or knowledge technology on how to share and access digital sources via these technologies. Therefore, the academic staff's knowledge of how to use the existing web technology is directly related to motivating them to share or gain resources. In this case, the author believes that the degree of technological knowledge has a direct effect on the behavioral intentions of academics. As a result, we propose the following hypotheses:

H6. Knowledge technology has a direct relationship with academic staff attitudes toward knowledge-sharing intentions within HEI.

3.3. Organizational Factor

To deal with an organizational factor, empowerment by leaders and an effective reward system are hypothesized in this study.

3.3.1. Empowerment by Leaders

Empowered by leaders is also identified as an important determinant of online knowledge sharing [46]. Academic staff considers their leader a role model who will guide and direct all processes of online knowledge sharing. Based on previous research, [47] argues that when academic staff receives recognition from their bosses or supervisors, they will be encouraged to share their resources among themselves. The idea is that the more leaders value academic staff commitment, the more resource sharing will occur. HEIs have an awesome chance to get significant benefits from their academic staff, which may have an impact on KSB. In this case, academic staff will be inspired and motivated to engage in online knowledge sharing if their superiors recognize their contribution and empower them [30]. Therefore, being empowered by leaders is proposed as a key determinant of online knowledge sharing in HEI. The following hypotheses are articulated:

H7: Empowerment by the leader has a direct relationship with the knowledge-sharing intentions of academic staff toward digital KSB within HEI.

3.3.2. Effective Reward System

The reward system is an important factor that may affect academic staff's intention to share knowledge within HEI. The incentive comes in a variety of forms and includes both financial and non-financial motivating forces [35]. The HEIs would have the ability to encourage academic staff's intentions towards sharing their resources via a reward system. The following hypotheses were proposed in this argument:

H8: An effective reward system has a direct relationship with the knowledge-sharing intentions of academic staff toward digital KSB within HEI.

4. RESEARCH METHODOLOGY

This study adopted a quantitative approach to test for the hypothesized relationships to achieve the research objective of identifying the factors influencing the usage of institutional web technologies for knowledge sharing. The overarching goal of this study is to investigate the factors that influence academic staff in sharing knowledge via institutional web technologies, specifically textbooks, lecture notes, and PowerPoint presentations. Pre-established and validated scales for the identified constructs were extracted from the relevant literature to formulate a

survey questionnaire for data collection. In this vein, a draft questionnaire was developed and pretested by four academic staff and researchers from both HEI. According to their suggestions, this questionnaire was improved to ensure more clarity and content validity.

The sampling frame was defined to include academic staff from two Ethiopian public HEIs that host functional institutional web technology. The major institutional web technology platforms identified were the learning management system, the digital library initiated by the Ethiopian ministry of education, and the grant management system, among others. Purposive sampling was used to select the college's deans and department heads for data collection, and random sampling was used to select respondents from the academic staff. Different authors make different recommendations for selecting an appropriate sample size.

To conduct quantitative research, 150 or more responses are required [48]. This study follows the recommendation of [49], who state that a sample size of more than 200 is appropriate for various types of statistical analysis. A total of 250 responses were collected over two months, of which 210 were found to be complete and usable from both HEI. A response rate of 84 percent was thus achieved. Table I shows the detailed sample demographics. After the data collection, the data were analyzed for completeness and accuracy.

4.1. Instrument Development

The research instrument was formulated through the identification of pre-established and validated scales for the constituent constructs. The scales were subsequently modified to suit the context of the study. Furthermore, the unit of analysis was determined to be an individual, as the underlying TRA framework mainly relies on individually administered questionnaires and measurements at the individual level to predict intentions and behaviors. The survey questionnaire is divided into two sections. The first segment contains information about the respondent's demographics, such as college name, department name, gender, age, education level, current work experience, and current position. The second segment contains issues that express the individual, organizational, and technological factors that may affect the digital KSB of academic staff at the university. The surveys used to collect data on academic staff KSB were created with TRA and expanded with a variable that can express academic staff attitudes and KSI. To ensure content validity, the instruments were adapted from prior studies and carefully customized to fit the context of this study (see Table 1 below).

Table 1 The initial measurement items and their sources

Factor/Construct	Construct Code	Source
Trust	TR	[30]
Self-Motivation	SM	[27], [30]
Altruism	ALT	[22], [27]
Empowering by Leaders	EML	[30], [50]
Effective Reward system	ERS	[30], [47]
Knowledge Technology	KT	[4], [15]
Attitude	ATT	[2], [38]
Knowledge sharing intention	INT	[2], [38]
Digital Knowledge sharing Behavior (DKS)	DKS	[51]

The eight constructs were used to assess the academic staff's digital KSB via the university's web technology. All the items were measured on a five-point Likert scale, where "1" means "strongly disagrees" and "5" means "strongly agrees." Finally, the collected data were analyzed using a smart PLS statistical package (3.2.7).

5. RESULT OF DATA ANALYSIS

The data in this study were analyzed using the partial least squares structural equation modeling (PLS-SEM) method and the SmartPLS (version 3.2.7) software. The data were analyzed in two steps, with the measurement and structural model being evaluated sequentially [52]. The use of PLS-SEM in this study is attributed to the fact that it provides concurrent analysis for both measurement and structural models, resulting in more accurate estimations [52]. The demographic characteristics of the respondents, as shown in Table 2, revealed that male respondents accounted for 76% of the respondents, while female respondents accounted for approximately 24%. This indicates that a much higher proportion of male respondents took part in this study. The majority of respondents (63%) were between the ages of 30 and 40, with 25% between the ages of 20 and 30, and those under the age of 40 being the least represented (12%). The majority of respondents (78%) are from the college of computing and informatics (CCI), followed by the college of business and economics (CBE) (69%), and the college of natural and computational sciences (CNCS) (63%) bring together both HEI responding surveys.

This shows that the number of respondents by college category is nearly proportional across the three colleges in both HEI. In terms of work experience among the universities, more than half of the respondents (61%) had from 5 to 10 years of working experience in the academic institution, followed by those with less than 5 years of work experience (22%), and those with more than 10 years of work experience (17%). In terms of the highest level of education, more than half (66%) of the academic staff have master's degrees, 20% have PhDs, and 14% are graduate assistants.

Table 2 Demographic Profile

Types of category	Category	Rate	Per hundred (%)
Gender	"Male"	162	76.2
	"Female"	48	23.8
Age	20-30	53	25.2
	30-40	132	62.9
	Above 40	25	11.9
College Name	CCI	78	37.1
	CBE	69	32.9
	CNCS	63	30
Current experience	"Less than 5 years"	47	22.4
	"From 5 up to 10 years"	127	60.5
	"Above 10 Years"	36	17.1
Highest level of Education	Degree	30	14.3
	Masters	139	66.2
	Doctorate	41	19.5
Current Position	Department Head	15	-
	College Dean	3	-

Finally, the researcher used the participant's current positions, which revealed that 15 of the participants are currently working as department heads, and three of them are college deans. In the following section, we will first present the results of the quality assessment. This is followed by a discussion of the structural model's evaluation using the results of the Smart PLS software, which is designed for quantitative analysis.

5.1. Assessment of Measurement Model

Convergent validity, discriminant validity, and composite reliability were used to assess the measurement quality of the constructs[52]. With the consideration of confirming the reliability and convergent validity of individual items from their construct, the measurement result for all items is reliable. The loading and average variance extracted (AVE) of individual measures on their respective constructs have been tested.

The loading factor of the indicator is examined first to determine convergent validity. A prominent scholar[52] recommends that any indicator with a loading factor less than 0.7 be removed. As shown in Figure 2, all indicators were approved because the outcome was greater than 0.7. The next criterion for determining convergent validity was AVE, which should be greater than the acceptable value of 0.50[52]. The AVE ranged from 0.561 to 0.937, as shown in Table 3, and all variables were acceptable because the value was greater than 0.561.

Table 1 Cronbach alpha, Composite reliability, and Average Variance Extracted (AVE)

	Cronbach's alpha	Composite reliability (CR)	The average variance extracted (AVE)
altruism	0.780	0.899	0.817
Attitude	0.925	0.948	0.821
Digital knowledge_sharing behavior	0.791	0.879	0.715
Effective reward_system	0.807	0.864	0.561
Empowerment by_leaders	0.875	0.923	0.800
Intention to share knowledge	0.839	0.902	0.755
Knowledge_Technology	0.933	0.949	0.757
Self_Motivation	0.977	0.983	0.937
Trust	0.941	0.957	0.819

Following that, the validity shifts to discriminant validity by taking into account the value of cross-loading the framework's constructs. Based on this, the AVE value on the diagonal result must be greater than the values off the diagonal. According to the study's findings, all AVE values of diagonal constructs are greater than those of off-diagonal constructs. The study's discriminant validity was accepted, as shown in Table 4.

Table 2 The discriminant validity of the study

	AL	AT	DKS	ERS	EL	ISK	KT	SM	TR
Altruism (AL)	0.904								
Attitude (AT)	0.885	0.906							
Digital knowledge_sharing behavior (DKS)	0.218	0.196	0.846						
Effective reward _system (ERS)	0.716	0.707	0.279	0.749					
Empowerment byleaders (EL)	0.232	0.193	0.887	0.267	0.895				
Intention to share knowledge (ISK)	0.214	0.193	0.816	0.342	0.825	0.869			
Knowledge _Technology(KT)	0.844	0.812	0.125	0.666	0.185	0.164	0.870		
Self_Motivation (SM)	0.840	0.965	0.152	0.642	0.173	0.177	0.816	0.968	
Trust(TR)	0.775	0.874	0.156	0.633	0.174	0.172	0.751	0.872	0.905

Following the completion of the validity test, the reliability must be verified. The reliability tests were completed using Cronbach's alpha and composite reliability (CR). Cronbach alpha and CR were used to assess the internal consistency of each item. Higher Cronbach alpha and CR are thought to indicate higher reliability, with values above 0.70 considered acceptable[52]. As a result of this study, Cronbach alpha values range from 0.780 to 0.977, and CR values range from 0.864 to 0.983 (see Table 3). The lowest Cronbach alpha value was 0.780, indicating that the study instrument was reliable. Furthermore, the research model is said to be reliable if the CR for all variables is greater than 0.7.

5.2. Assessment of Structural Model

We used a bootstrapping procedure to examine the path coefficients and coefficient of determination (R²) for the structural model. The standardized path coefficients calculated indicate the strength of the relationships between the dependent and independent variables. The coefficient of determination (R²) value represents the proportion of variance explained by the variables in a framework predictor. Almost all of the proposed hypotheses are supported, except two. The smart PLS result from the above measurement model is used to test the structural model. Figure 2 and Table 5 show the SEM results for the independent and dependent variables. The study discovered a direct and positive relationship between the KSI and digital knowledge-sharing behavior (digital KSB) ($\beta = 0.816$; $t=19.92$). The coefficient of determination (R²) value is 0.666, indicating that the digital KSB described by KSI has a variance of 66.6%. This implies that H1 is supported. Empowerment by leaders ($\beta = 0.790$, $t=14.986$) and an effective reward system ($\beta = 0.206$, $t=2.866$) have a direct and positive relationship with KSI. As a result, H7 and H8 are supported.

However, contrary to what we expected, attitude ($\beta = -0.10$, $t=1.659$) does not affect KSI. As a result, H2 was not supported. Trust ($\beta = 0.100$, $t=2.154$), self-motivation ($\beta = 0.701$, $t=11.96$), and altruism ($\beta = 0.279$, $t=6.227$) all have a direct and positive influence on attitude toward KSI. However, knowledge technology ($\beta = -0.071$, $t=1.863$) did not affect attitude. H3, H4, and H5 are implied to be supported, but H6 is not. The R² value (0.953) estimates that trust, self-motivation, and altruism account for 95.3% of the time attitude toward KSI. According to the value (0.953), trust, self-motivation, and altruism are estimated to account for 95.3% of the time attitude toward

KSI. The R² value of 0.701 also tells us that 70.1% of KSI is described by its determinant constructs. The results show that while empowerment by leaders has the greatest influence on KSI with a t-value of 14.986, self-motivation has the greatest influence on attitude.

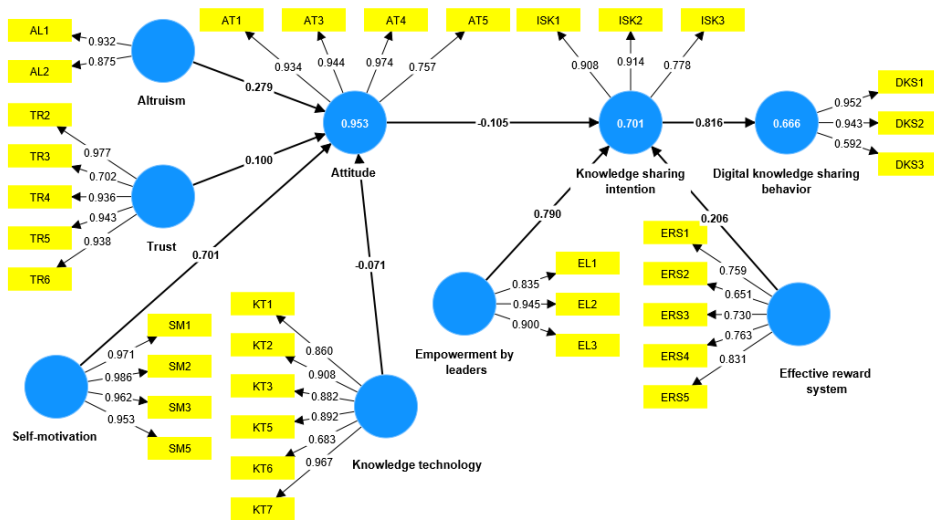


Figure.2 Analysis result of the Structural model of the study

7. DISCUSSION

This section discusses the findings and provides a summary of the questionnaire results. This study proposes a conceptual framework and has investigated the factors that may affect online or digital KSB in Ethiopian public HEI. This study contributed to scientific research by combining individual, organizational, and technological factors and empirically studying their impact on the academic staff's attitude and intention toward digital knowledge sharing. The results showed that all but two of the hypotheses had been supported. The study's findings support the hypothesis (H1) by demonstrating that digital KSB is directly and positively determined by KSI with a path coefficient of 0.816. The high contribution of intention to KSB suggests that academic staff in a good mood are more likely to engage in KS via institutional web technology. This finding is consistent with previous research by [2] and [38]. Similarly, as shown in Table 5, the statistical result indicates that trust, self-motivation, and altruism (Hypotheses H3, H4, and H5) have a direct and positive influence on attitude. According to the findings, respondents tended to agree that fostering trust, self-motivation, and altruism among academic staff is critical to developing an attitude toward actual KS within HEI. This finding is consistent with those of [2], [30], [53], who found that trust has a significant influence on attitude. Furthermore, [2] and [30] discovered that self-motivation influences attitude. The study findings revealed that altruism is positively and significantly related to a knowledge-sharing attitude. One possible explanation for the significant relationship between altruism and attitude is that academic staff who gain enjoyment from sharing their knowledge over institutional web technology may possess a higher attitudinal motivation to contribute their knowledge. This finding is consistent with previous research done by [43]. They stated that they enjoy assisting others and that personality is essential in KS. The findings show the significance of trust and self-motivation toward attitude. This indicates trust among academic staff, and trust in web technology is a fundamental goal for using the system responsibly. When academic staff forms strong relationships, they prefer to communicate and establish interpersonal trust with each other. This shows that KS is expected to be more in web technology, where there is a culture of trust among the staff members. Also, the perception of reliability and trustworthiness of the existing website among academic staff is indeed an essential motivator for

their attitude toward using the system. The result is consistent with [41] and [42]. The study findings revealed that an effective reward system significantly and positively influences knowledge-sharing intentions. This indicates that the existence of a reward system can highly motivate the academic staff to use the existing web technology. Therefore, managers should provide more support and incentives such as rewards to encourage academic staff to share their knowledge. This finding supports previous research by [22], [54], who discovered a significant relationship between rewards and KSI.

Furthermore, it has been found that there is a direct and positive influence between empowerment by a leader and an effective reward system (Hypotheses H7 and H8) toward the knowledge-sharing intention. This indicates that the inspirational leader will succeed in leading the academic staff and increasing knowledge-sharing intentions. The study results underlined the importance of knowledge sharing encouraged by leaders. Leaders were largely felt to be empowering and to possess integrity. This supported the previous studies in developed countries such as Turkey and the USA [31], [55]. However, contrary to what we expect, attitude does not influence KSI and knowledge technology does not influence attitude toward KSI.

Table 3: Summary of hypothesis testing

Hypothesis	Path	Path coefficient	T-Statistics	Results
H1	INT --> DKS	0.816	19.922	Supported
H2	ATT--> INT	-0.105	1.659	Not-supported
H3	TR --> ATT	0.100	2.154	Supported
H4	SM--> ATT	0.701	11.962	Supported
H5	ALT--> ATT	0.279	6.227	Supported
H6	KT --> ATT	-0.071	1.863	Not supported
H7	EML-->INT	0.790	14.986	Supported
H8	ERS --> INT	0.206	2.866	Supported
	**p<0.001 and *p<0.005			

TR=Trust, SM=Self-motivation, INT=Intention, KT=Knowledge technology, ATT=Attitude, ALT=Altruism, DKS=Digital knowledge sharing

8. CONCLUSION

The development of information technology has led to changes in the HEI knowledge-sharing process. This research focused on the factors that influence the intentions and behavior of academic staff toward sharing knowledge through institutional web technology in HEI. This study suggested a digital KS framework to demonstrate the key factors of digital knowledge-sharing behavior in HEI. This study bases its findings on the TRA model proposed by Ajzen (1980). As a result, some factors already present in the TRA are included in this study, such as attitude, intention, and actual behavior. After reviewing previous studies that confirmed relationships between these factors and behavioral intention, trust, self-motivation, knowledge technology, altruism, reward systems, and empowerment by leaders were added.

The findings revealed that trust is positively and significantly related to attitude. This indicates that the existence of trust can highly motivate the academic staff for interpersonal interactions and lead to the use of the existing web technology for KS purposes. Therefore, university managers should continuously create a favorable environment to foster the targeted reciprocal relationships, trust, and interpersonal interactions of academic staff. According to the study's

findings, an effective reward system and empowerment by leaders are significantly associated with KSI. This indicates the involvement of leaders and rewarding academic staff based on their KS contribution to the university's web technology. However, knowledge of technology did not affect attitude. This shows that while knowledge technology is fundamental to influencing academic staff attitudes due to a lack of knowledge on how to use web technology, the impact is not visible. However, for successful implementation of online knowledge sharing, academic staff must have knowledge technology. Online platforms for online knowledge sharing should be designed with a user-friendly interface. This could make academic staff perceive online platforms as easier to use, and consequently, they may use online platforms more to share knowledge. Some guidance, tutorial videos, and frequently asked questions should be proposed. Managers should consider offering training or workshops to make academic staff feel that online knowledge sharing is enjoyable and helps to achieve a positive reputation[1]. In addition, the study highlights that the attitude has no significant impact on the knowledge-sharing intention of the Ethiopian HEI. The reason for the contrasting results may be that the research was done in HEIs, where academic staff exhibited high self-motivation toward knowledge sharing. In general, by placing more focus on all these factors, participation and effective online knowledge sharing could be improved.

The study's final findings will have both practical and theoretical implications. This study will make a theoretical contribution in two ways. First, this study is considered novel research because none of the previous studies addressed the KSB of academic staff on utilizing the institutional web technology in HEIs, particularly in Ethiopian public universities. Second, by synthesizing the theory of reasoned action and additional variables from the literature, this study contributes to knowledge sharing by proposing a new theoretical framework. The framework will serve as a guideline for future researchers who wish to examine online knowledge-sharing behavior in HEI. From the framework, a comprehensive picture is also provided from which managers can draw to enhance online knowledge-sharing behavior. The study's practical contribution will be that it will identify the intention and behavior of academic staff toward KS via the university's web technology, resulting in an overall improvement of KS practice in universities. In general, universities will not suffer knowledge loss as a result of staff turnover, and newly hired academic staff will be able to use the knowledge stored on the university's web technology. For managers, the proposed framework helps HEI managers understand the key factors that motivate academic staff to share knowledge online. The following are suggested future research directions based on the study's findings. The academic staff of Addis Ababa University and Haramaya University is taken into account in this study. More research may be required to compare various public HEIs in the same context, as well as academic staff perspectives on using the university web technology. This could result in different outcomes. This study employs a quantitative approach that focuses on the causal relationship between factors that motivate or hinder academic staff's digital KSB. However, different aspects of philosophy, such as interpretive qualitative methods, may produce a different result.

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