Chapter 5

Attitudinal and Motivational Factors as Correlates of Digital Resource Knowledge-Sharing Behaviour of Agricultural Researchers in South-West Nigeria

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Abstract

This study investigated attitudinal and motivational factors as correlates of digital resources knowledge sharing among researchers in agricultural institutes in South-Western-Nigeria. The study adapted the Theory of Reasoned Action (TRA) of Ajzen (1991 and focused on researchers in agricultural research institutions in South-west Nigeria. Using a total enumeration method, 421 agricultural researchers participated in the study. Data were obtained through a structured close-ended questionnaire. Collected data were subjected to descriptive and inferential statistics specifically regression at 0.05 level of significance. Findings revealed a significant relationship between attitude and digital resource knowledge sharing among the agricultural researchers. There was also a significant relationship between extrinsic motivation and digital knowledge resource sharing (DKRS) but there was no significant relationship between intrinsic motivation and DKRS. The study recommended that agricultural research institutions should expedite action in providing necessary motivation that could propel and increase digital resource knowledge sharing behaviour of agricultural researchers in their institutes.

Keywords: Digital Resource Knowledge, Agricultural research institutes, Agricultural researchers, Knowledge sharing behaviour, Theory of Reasoned Action, South-West Nigeria

1 Introduction

The use of the internet to achieve and enhance open access initiative towards making information easily accessible especially among academics and agricultural research institutes cannot be overemphasised. This has led to the dimensional increase of various digital resources in electronic formats. According to Mimbi and Bankole (2015); and Gray, Barnsley, Gagnon, Belzile, Kenealy, Shaw, Sheridan, Nji, and Wodchis (2018), access to various digital resources could have significant influence on the performance of staff in various institutes such as those in agricultural research institutes. Digital information resources refers to the various information stored in electronic format and cuts across e-journals, e-books, e-News, online database, e-libraries, and the like. In the recent global information society, their use is not new and has swept across the scholarly society because of its tremendous advantages over the print-based counterpart. Examples of such digital resources are The Essential Electronic Agricultural Library (TEEAL) and Access to Global Online Research in Agriculture (AGORA). These digital resources were developed to meet the information and knowledge sources and usage gaps that seem to exist between agricultural researchers in the developed and developing countries. According to Ogunjobi and Oyewusi (2014) and Obasuyi (2016), TEEAL and AGORA are examples of digital resources that are launched in 1999 and 2003 respectively to ease the access to numerous digital information sources that are offline and online to researchers in sub-Saharan Africa, including Nigeria. Other digital resources in the Sub-Sahara Africa are the International Network for the Availability of Scientific Publications (INASP), eIFL (Electronic Information for Libraries) and the Information Training and Outreach Centre for Africa (ITOCA) (Harle 2009).

The availability of digital resources for use in agricultural institutes can best explain the link between the digital society and agricultural development and in extension national development. According to Jubb (2008) and Harle (2009), although, the provision and availability of digital resources are elastic as provided above, its knowledge are however important for their successful usage. To this end, it is important that staff of agricultural institutes in Nigeria

is knowledgeable about the various digital resources that are made available for better use. Hence, the knowledge of the digital resources is very much important just as their availability. Due to the importance attached to digital resources and that its knowledge level varies across staff in any organisation or institute, there is need for digital resource knowledge sharing. According to Postolache (2017), such knowledge of digital resource can facilitate decision-making capabilities, build learning organisations (through a learning routine), stimulate cultural change and innovation and can also enhance staff performance in the various agricultural institutes.

The concept of digital resource knowledge sharing is best understood in terms of knowledge sharing and digital resource knowledge. Digital resources knowledge refers to the awareness, technical know-how and skills possessed by staff of agricultural institutes about the availability, access, search and ethical use of digital resources made available. On the other hand, knowledge sharing refers to the sharing of work-related knowledge and expertise with other members within one's organisation (Yi 2009; Appel-Meulenbroek, Weggeman and Torkkeli 2018). It involves a cogni-tive and behavioural process of individuals (Yeo & Marquardt 2015). There are two kinds of knowledge - explicit and tacit (Richtnér, Åhlström & Goffin 2014). Explicit knowledge are codified and written while tacit are not codified and hence resides in people. Tacit knowledge is more difficult to share than explicit knowledge (Hau, Kim, Lee & Kim 2013; van Wijk, Jansen & Lyles 2008). Digital resources knowledge is more of a tacit knowledge and its sharing could be facilitated when people share a common environment such as employees within an organisation (Nonaka & Konno 1998; Appel-Meulenbroek *et al.* 2018).

Hence, digital resource knowledge sharing refers to the process where individual employees in the agricultural research institutes share and/or seek digital resources knowledge; to or from other staff either through formal or informal collaborations. Huber (2001) noted that despite the importance attached to such knowledge sharing behaviour, employees fear to share the tacit knowledge and experiences they have accumulated as they feel they might lose their competitive advantage and their job because such knowledge gives them an edge over their fellow colleagues within and outside the organisation. However, Onifade (2015), on the contrary noted that employees in knowledge production organisation, agricultural research institutes inclusive share knowledge to an average extent. In addition, studies such as Mushi (2009); Mayekiso (2013); Maria (2014); Awodoyin, Osisanwo, Adetoro and Adeyemo (2016); Razmerita,

Kirchner and Nielsen (2016); revealed that only few of the staff in knowledge production organisation such as agricultural research institutes share knowledge.

Furthermore, several factors may be accountable for the disparities between employees who share as stated by Huber (2001) and those who do not share as stated by Onifade (2015); Mushi (2009); Mayekiso (2013); Maria (2014); Awodoyin *et al.* (2016); Razmerita *et al.* (2016). The works of Kulkarni Ravindran and Freeze (2006); Aris (2013); Opeke and Opele (2014); and Bello and Oyekunle (2014) revealed that factors such as attitudes, subjective norm, and perceived ease of use, perceived usefulness, facilitating conditions could explain human behaviour such as those related to digital resources knowledge sharing. Individual or personal factors of employees which include motivational factors could further influence the tendency to share knowledge in any organisation (Nov & Ye 2008). Sriratanaviriyakula and El-Den (2017) and Mohammad, Alajmi and Ahmed (2017) also attested to the significance of motivational factors in influencing knowledge sharing. Although, all these factors are important, the major focus of this study are attitudinal and motivational factors. The reason for this is that adapting the Theory of Reasoned Action (TRA) by Ajzen and Fishbein (1991) and Theory of Planned Behaviour (TPB) by Ajzen (1991), attitude of individuals could pose a major significant influence on certain human behaviour such as those related to digital resources knowledge sharing. In addition, Sriratanaviriyakula and El-Den (2017) and Mohammad *et al.* (2017) also noted that motivational factor is also a significant factor influencing knowledge sharing. Hence, the need for the adoption of attitudinal and motivational factor as influencing digital resources knowledge sharing among employees in agricultural research institutes.

Attitude refers to an individual's positive or negative feelings regarding a particular behaviour. In general terms, attitudes are expressions of evaluations or dispositions with respect to an attitude-object that range from positive (favour) to negative (disfavour) (Jowell 2005). They are formed through a process of individual subjective evaluation, involving a rational assessment of advantages and disadvantages, but also influenced by affective and emotional responses and related beliefs. According to Bock, Zmud, Kim and Lee (2005) and Alajmi (2011), attitude explains why employees in organisations share or hoard their knowledge. Also, Ajzen (1991); Crano, Cooper and Forgas (2010) and Nordin, Daud and Osman (2012) noted that attitude influences individual perception and plays a key role in regulating behaviours such as digital resource

knowledge sharing among employees in agricultural research institutes.

On the other hand, motivation is a drive or a need (Souders 2019) and it is classified into extrinsic and intrinsic motivations. While extrinsic motivations are to motivation that come from without and are directed to satisfy indirect or instrumental needs, for example the use of rewards to motivate staff to perform desired behaviours, and range from monetary incentives, to non-monetary awards such as promotions (Shanshan 2013). Intrinsic motivation is spurred from within by values provided directly within the work itself (Shanshan 2013). Whereas, some studies such as Kankanhalli, Tan and Wei (2005) and Razmerita *et al.* (2016) found positive relationship between motivation and knowledge sharing behaviour, He and Wei (2008) found no relationship. Saade, Nebede and Mak (2009) noted that motivation enhances increased knowledge sharing among colleagues and has significant influence on human behaviour and action such as, digital resources knowledge sharing. Although, various studies have noted the importance of attitude and motivation on human behaviour but very few have focused on their influence on digital resources knowledge sharing. In addition, little is also known about the level of influence of attitude and motivation on such human behaviour such as digital resources knowledge sharing. Furthermore, the several studies that focused on knowledge sharing focused on students, organisational studies which include those related to the faculties in academic institutions such as universities, among others. However, not much is known about agricultural research institutes. This study, therefore, investigated attitudinal and motivational factors as correlates of digital resources knowledge sharing among researchers in agricultural institutes in South-West Nigeria.

The rest of this chapter is structured as follows: the next section presents the literature review followed by the details of the methodological approaches adopted in the execution of the study. The next section presents the results and then a discussion of the findings. The conclusion and recommenddations finalised the paper.

2 Literature Review

Knowledge sharing processes consist of either formal or informal structures of sharing knowledge (Cabrilo & Grubic-Nesic 2013; Reychav & Te'eni 2009; Kakhkia, Hadadianb, Joyamec & Asl 2019). The formal structure includes sharing knowledge at meetings, workshops, and training activities while the

informal structure include the sharing of knowledge at thought rooms, during brainstorming, operational learning, etc. Thus, many personal or organisational factors do play major roles in influencing knowledge sharing behaviour among employees within an organisation such as digital resources knowledge sharing among researchers in agricultural institutes. Consequently, having noticed its importance on performance of employees and the organisation at large, there is a need for organisation and institutes which include agricultural institutes to provide various supports that could enhance knowledge sharing behaviour among their employees. Putting into consideration knowledge management theories, employees' intention to share knowledge could be influenced by several preconditions such as leadership empowerment, organisational climate, and motivational drives (Bergström & Garcia Martinez 2016; Kakhkia *et al*. 2019). In addition, studies such as Yang (2008); Yang (2010); Chen & Cheng (2012) and Kakhkia *et al.* (2019) have also proven that attitude is a major factor that influences knowledge sharing behaviour which cuts across the digital resources knowledge sharing among researchers in agricultural institutes. Also, Coelho & Augusto (2010); Hung, Durcikova, Lai & Lin (2011); Giancola (2014) and Kakhkia *et al.* (2019) have stated that motivational factor is a major factor that could influence knowledge sharing among employees, such as digital resources knowledge sharing among researchers in agricultural institutes.

In addition, Schepers & van den Berg (2007); Wahyuni (2013); Wang & Noe (2010); and Kakhkia *et al.* (2019) noted that organisational climate which could cut across an organisation providing a knowledge sharing and motivating climate for employees to share knowledge is also an influencing factor to knowledge sharing behaviour among employees in any organisation which also include digital resources knowledge sharing among researchers in agricultural institutes. Despite these, little is known about digital resources knowledge sharing among researchers in agricultural institutes and to what level would attitude and motivational factors influence digital resources knowledge sharing among researchers in agricultural institutes. In the above background, this study investigated the attitudinal and motivational factors as correlates of digital resources knowledge sharing among researchers in agricultural institutes in South-west Nigeria.

3 Research Framework

The study adapted the Theory of Reasoned Action (TRA) of Ajzen (1991). TRA is known as a social psychology model that seeks to explain selected factors

that influence human behaviour. This theory is widely used by different scholars to determine the intention of human behaviour such as the digital resources knowledge sharing among researchers in agricultural institutes. TRA postulated that the intention of an individual to perform certain behaviour such as digital resource knowledge sharing among researchers in agricultural institutes could be influenced by positive attitude and social norms Attitude is defined as the disposition to respond favourably or unfavourably towards a behaviour (Ajzen 1991). Social norms is the degree to which an individual perceives how others approve the individual's participation in a specific behaviour such as digital resource knowledge sharing among researchers in agricultural institutes (Bock, Zmud, Kim & Lee 2005). TRA presents that employees attitude and social norms could influence the intention to share knowledge. Hence, from the TRA, the study formulated its own model as presented in Figure 1. From the research framework presented in Figure 1, it is assumed that attitude of researchers in agricultural research institutions in South-Western Nigeria could influence knowledge sharing behaviour. To buttress this, Ajzen and Fishbein (1991); Ajzen (1991); Bock *et al.* (2005); Alajmi (2011), Crano *et al.* (2010) and Nordin *et al.* (2012) noted that attitudes of respondents do have significant influence on actual behaviour such as digital resource knowledge sharing behaviour.

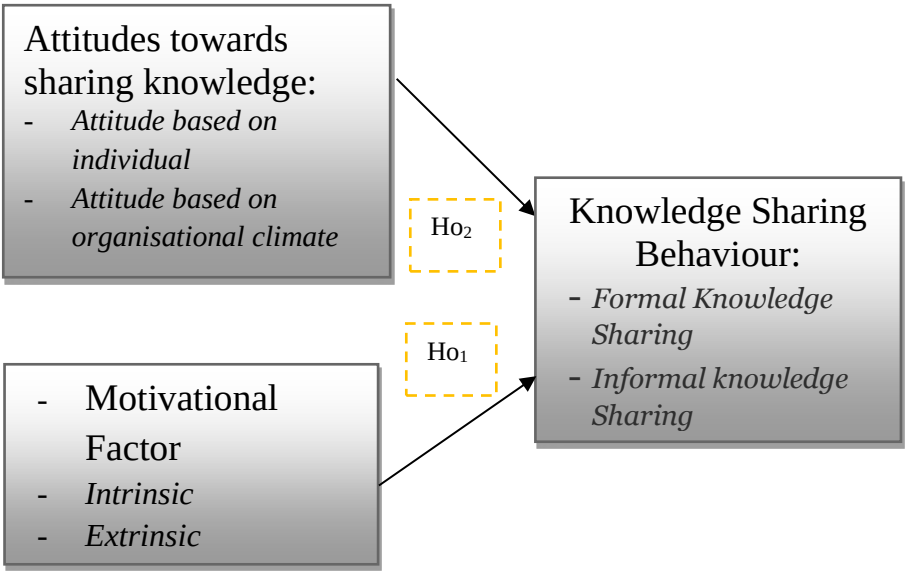


Figure 1: The Knowledge sharing model

The study hypothesised that:

Ho_1: There is no significant relationship between the attitudinal factors and digital resources knowledge sharing among agricultural researchers in South-West Nigeria

Also, Sriratanaviriyakula and El-Den (2017) and Mohammad *et al.* (2017) have demonstrated that motivational factors could also have significant influence on knowledge sharing behaviour such as digital knowledge resources knowledge sharing behaviour. Therefore, the study also hypothesised that:

Ho_2: There is no significant relationship between the motivational factors and digital resources knowledge sharing among agricultural researchers in South-West Nigeria

4 Methodology

The correlational survey design was adopted in this study and involved establishing relationship between and among variables of interest. The population of interest comprised researchers in agricultural research institutions in South-West geo-political zone of Nigeria. According to the Federal Republic of Nigeria, six (6) states are in the region Nigeria namely: Oyo, Osun, Ondo, Ogun, Lagos and Ekiti. There are 1,173 agricultural researchers in research institutions (comprising public and private universities and research institutions) in South-West Nigeria. Four hundred and twenty-one agricultural researchers from the agricultural research institutions have participated in at least one digital resource knowledge sharing programme. Table 1 presents the distribution of agricultural researchers in research institutions in South-West Nigeria.

Table 1: Agricultural research institutions in South-West Nigeria

S/N	Institution	State	No of Agricultural researchers	Sample
	Public Universities			
1.	Ekiti State University (EKSU)	Ekiti	54	37

2.	Ladoke Akintola University of Technology (LAUTECH)	Oyo	94	31
3.	Federal University of Agriculture, Abeokuta (FUNAAB)	Ogun	65	36
4.	Federal University Oye-Ekiti (FUOYE)	Ekiti	73	32
5.	Federal University of Technology, Akure (FUTA)	Ondo	158	32
6.	Obafemi Awolowo University, (OAU)	Osun	84	28
7.	University of Ibadan (UI)	Oyo	141	32
	Private Universities			
8.	Babcock University (BU)	Ogun	35	30
9.	Bowen University (BOWEN)	Osun	37	23
10.	Wesley University (WU)	Ondo	25	25
	Research Institutes			
11.	Forestry Research Institute of Nigeria (FRIN)	Oyo	90	30
12.	National Centre for Genetic Resources and Biotechnology (NACGRAB)	Oyo	65	25
13.	National Horticultural Research Institute (NIHORT)	Oyo	86	35
14.	Nigerian Institute for Oceanography and Marine Research (NIOMR)	Lagos	166	25
	Total		**1173**	**421**

Source: Personal Contacts & ITOCA Nigeria Project Office (2019).

From Table 1, agricultural research institutions include seven (7) public universities, three (3) private universities and four (4) research institutes. The

population of researchers in each of the institutions is presented in Table 1. Fourteen (14) of the agricultural research institutions had current subscription to agricultural digital resources, TEEAL and AGORA; had hosted a digital resource knowledge sharing programme (training-of-trainers workshop) between 2014 and 2016; and had signed a Memorandum of Understanding with ITOCA to deliver digital resources knowledge training. Using a total enumeration method, the 421 agricultural researchers participated in the study.

A structured questionnaire was used to obtain data from the respondents. It was divided into three (3) sections as follows: Section A contained question on the demographic attributes of the respondents such as name of institution, department/unit, gender, age, work status, highest academic qualification and years of work experience. Section B centred on questions relating to digital resource knowledge sharing activities such as attendance of digital resources training, frequency of sharing knowledge, types of digital resource knowledge received, and modes of sharing digital resource knowledge. Section C measured attitudinal and motivational factors of the respondents. Variables are measured using the 5-point Likert scale of 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree.

To establish the psychometric property of the questionnaire, content and construct validity were established by making sure that the items in the questionnaire fully captured the hypotheses and that the whole constructs or variables in the study were fully captured by the questionnaire. In addition, the questionnaire was administered to 30 respondents and subjected to a pre-test analysis using the Cronbach Alpha yielding a reliability coefficient of 0.76 for digital resources knowledge sharing, 0.75 for the attitudes of respondents and 0.73 for motivational factor.

Data collection was carried out between the months of June and December 2019. Both the Survey Monkey and paper formats of the questionnaire were used due to the busy schedule of the researchers. In administering the questionnaire, informed consent of the agricultural researchers' was obtained and confidentiality (protection of privacy) was ensured as information obtained was treated as anonymous during the presentation of the results. In all, a total of 386 copies of the administered questionnaire were returned, 262 in paper format and 124 electronically through Survey Monkey. After performing quality checks on the returned copies, 371 (88.1%) were found usable for analysis and 15 (3.9%) were found not fit for data analysis because of being incompletely filled. Both descriptive and

inferential statistics were performed on the data obtained. The inferential statistics involved the use of regression analysis to establish the relationships between variables of interest in the study which includes the relationship between selected factors and the digital information resource knowledge sharing among researchers in agricultural research institutions in South-West Nigeria.

5 Results

In this section, the results obtained from the study are presented starting with the demographic profile of the respondents. The demographic profile of the respondents revealed that males were higher in Obafemi Awolowo University (76.0%) and females were higher in National Centre for Genetic Research and Biotechnology (NACGRAB) (62.5%). Also, NACGRAB had the highest number of respondents between the age brackets of 20 and 29 years (12.5%), followed by Federal University of Agriculture Abeokuta (FUNAAB) (12.1%) and Babcock University (BU) (12.0%). Wesley University (WU) (63.6%) and Forestry Research Institute of Nigeria (FRIN) (63.6%) had the highest percentage of those between the age brackets of 30 and 39 years and Ekiti State University (EKSU) (25.0%) lowest. The highest number of Assistant Lecturer/Lecturer was found with WU (86.4%) with EKSU having the lowest (28.1%). BOWEN (61.9%) has the highest Lecturer I/Senior Lecturers and lowest in WU (13.6%). EKSU had the highest (21.9%) number of Reader/Professor respondents but BU had the lowest (4.8%). Also, FRIN had the highest number of Research/Senior Research Officers and National Institute of Oceanography and Marine Research (NIOMR) had the highest number of Principal/Chief Research Officer.

Furthermore, FRIN had the highest number of Bachelor degree holders (31.8%) with FUNAAB having the lowest (3.0%). WU had the highest number of Master's degree holders and the lowest was found in Ladoke Akintola University of Technology (LAUTECH), while M.Phil. degree was more in Federal University of Technology Akure (20.7%) and least in WU (4.5%). However, LAUTECH had the highest number of researchers with PhD degrees (67.9%) whereas FRIN had the lowest (4.5%). Moreover, Federal University Oye-Ekiti had the highest number or respondents with 1-3years of working experience, FRIN was highest for the 4-6 years working experience, NIOMR had the highest number (38.9%) for the 7-9 years working experience. Also,

National Horticultural Institute, had the highest number of respondents with 9-11 years working experience and EKSU had the most (53.1%) number of respondents with more than 11 years working experience.

5.1 Attitude of Agricultural Researchers towards Digital Resource Knowledge Sharing

Table 2 reflects the frequency, percentage, mean and standard deviation scores of the items that best describe the respondents' attitude towards digital resources knowledge sharing.

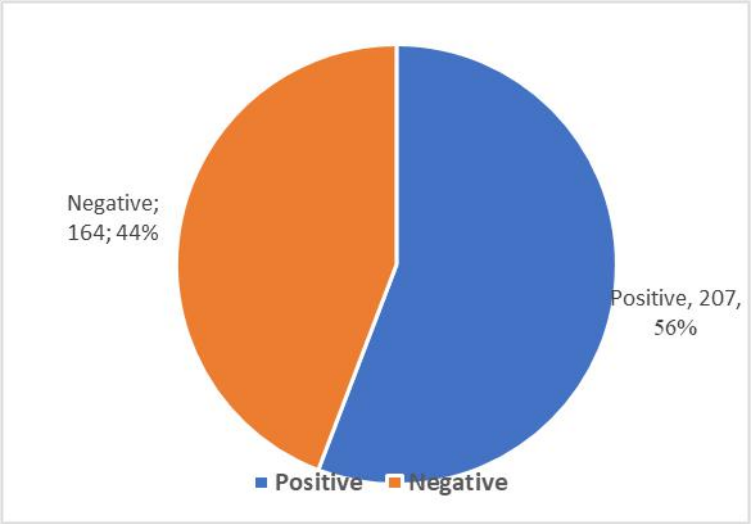
Table 2: Attitude towards digital resources knowledge (DRK) sharing of researchers

	SD	D	U	A	SA	Mean	S.D.
Sharing DRK with colleagues is good	0 (0.0)	2 (0.5)	3 (0.8)	165 (44.5)	199 (53.6)	4.54	0.59
Sharing DRK with colleagues is wise	0 (0.0)	0 (0.0)	7 (1.9)	173 (46.6)	191 (51.5)	4.50	0.54
Sharing DRK with colleagues is pleasant	0 (0.0)	2 (0.5)	4 (1.1)	185 (49.9)	180 (48.5)	4.46	0.55
Sharing DRK with colleagues is valuable	1 (0.3)	0 (0.0)	8 (2.2)	199 (53.6)	163 (43.9)	4.41	0.56
Sharing DRK with colleagues is harmful	212 (57.1)	44 (11.9)	4 (1.1)	41 (11.1)	70 (18.9)	2.23	1.64

Source: Field data (2019).

The results displayed in Table 2 show that 'sharing DRK with colleagues is good' ($\bar{x}$=4.54, S.D=0.59) was the major attitudinal disposition of agricultural researchers. This is followed by 'sharing DRK with colleagues is wise' ($\bar{x}$=4.50, S.D=0.534) while 'sharing DRK with colleagues is pleasant' ($\bar{x}$=4.46, S.D=0.55) was next and then 'sharing DRK with colleagues is valuable' ($\bar{x}$=4.41, S.D=0.56) pleasant. However, the least attitudinal disposition was 'sharing DRK with colleagues is harmful' with ($\bar{x}$=2.23, S.D=1.64). It could therefore be deduced that a high number of agricultural researchers in this study have positive attitude towards digital resources knowledge sharing compared to those that hold negative disposition towards sharing knowledge. To further illustrate the attitudinal disposition profile of the respondents, Figure 2 is presented as follows:

Figure 2: Attitude towards digital resources knowledge sharing



Source: Field data (2019)

Fig 2 illustrates that a higher percentage of the researchers (56.0%) had positive attitude towards digital resources knowledge sharing whereas those with negative attitude are lower (44.0%). This result suggests that much could be done to improve the attitude of agricultural researchers towards digital resources knowledge sharing.

5.2 Test of Hypotheses

The results of the test of the two hypotheses formulated to drive the study are presented in this section starting with hypothesis one.

Hypothesis One

Ho_1: There is no significant relationship between the attitudes and digital resources knowledge sharing among agricultural researchers in South-West Nigeria.

The regression analysis result for hypothesis one is presented in Table 3.

Table 3: Regression analysis result for Hypothesis one

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Remark	Hypothesis Decision
	B	Std. Error	Beta				
(Constant)	17.906	1.989		9.004	.000		
Attitude	.434	.087	.301	4.964	.000	Significant	Rejected
a. Dependent Variable: DRKSB							

Source: Field data (2019)

The result in Table 3 reveals that attitudes of respondents towards knowledge sharing influences their digital resource knowledge sharing ($p<0.05$) showing that there is a significant relationship between the attitude towards knowledge sharing and digital resources knowledge sharing among agricultural researchers. This implies that the null hypothesis was rejected. The result further shows that the strength of the relationship between attitude and digital resources knowledge sharing is 30% which revealed that a unit increase of attitude of researchers towards digital resources knowledge sharing in agricultural research institutes in South-West Nigeria raises the propensity of actual digital resources knowledge sharing by 30%.

Hypothesis Two

Ho2: There is no significant relationship between the motivational factors and digital resources knowledge sharing among agricultural researchers in South-West Nigeria.

The regression analysis result for hypothesis two is presented in Table 4.

Table 4: Regression analysis result for Hypothesis two

Coefficients[a]						
Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.762	1.210		17.991	.000
	Intrinsic motivation	-.082	.051	-.079	-1.598	.111
	Extrinsic motivation	.156	.056	.143	2.806	.005
a. Dependent Variable: DRKSB						

Source: Field data (2019).

The result in Table 4 shows that only extrinsic motivation is significant ($p<0.05$) but the intrinsic motivation was not significant ($p>0.05$). This implies that when agricultural institutes provided necessary rewards for knowledge sharing, employees tend to be motivated to share digital knowledge resources among other employees. In addition, the rate at which such relationship occurs is 14% implying that an increase unit of the necessary rewards provided by agricultural institutes, would create an impetus of 14% propensity of digital resource knowledge sharing among the employees.

6 Discussion of Findings

The findings revealed that attitude towards knowledge sharing does influence digital resource knowledge sharing among agricultural researchers in agricultural research institutes in South-West Nigeria. The finding bolsters the findings from the works of Ajzen and Fishbein (1991); Ajzen (1991); Bock *et al.* (2005); Alajmi (2011); Yang (2008); Yang (2010); Crano *et al.* (2010) and Nordin *et al.* (2012); Chen & Cheng (2012) and Kakhkia *et al.* (2019) that attitude of employees is a major influencing factor to be considered on actual knowledge sharing behaviour of employees in organisations. Also, there is a significant relationship between extrinsic motivation and digital resource knowledge sharing among agricultural researchers in agricultural research institutes in South-West Nigeria. However, there was no significant relationship between the intrinsic motivation and digital resource knowledge sharing among the agricultural researchers in agricultural research institutes in South-West Nigeria. Thus, the provision of certain motivational incentives by the institutes provided necessary impetus for employees to share digital knowledge resources among other employees. This supports the works of Nov and Ye (2008);

Sriratanaviriyakula and El-Den (2017); Mohammad *et al.* (2017); Bergström & Garcia Martinez (2016) and Kakhkia *et al.* (2019) that motivation is an important factor influencing knowledge sharing behaviour.

In addition, the findings of this study concur with that of Shanshan (2013) that when organisation use rewards as an extrinsic motivation to motivate staff to perform desired behaviours which include monetary incentives, to non-monetary awards such as promotions, it motivates employees to share knowledge such as digital resources knowledge sharing among agricultural researchers in agricultural research institutes in South-West Nigeria. This also supports the findings of Kankanhalli *et al.* (2005); Saade *et al.* (2009) and Razmerita *et al*. (2016) who affirmed a positive relationship between motivation and knowledge sharing behaviour. However, the findings in this study contrast that of the work of He and Wei (2008) who found no relationship. This also supports the findings of Coelho & Augusto (2010); Hung, Durcikova, Lai & Lin (2011); Giancola (2014) and Kakhkia *et al.* (2019) that motivational factor is key to creating impetus on knowledge sharing among employees. The findings also prop up the works of Schepers & van den Berg (2007); Wahyuni (2013); Wang & Noe (2010) and Kakhkia *et al.* (2019) that when organisations provide knowledge sharing and motivating environment for employees, it tends to influence knowledge sharing behaviour among employees in any organisation.

7 Conclusion and Recommendations

In conclusion, attitudinal and motivational factors to share knowledge do have a significant influence on digital resource knowledge sharing among agricultural researchers in agricultural research institutes in South-West Nigeria. In addition, when an organisation provides a knowledge sharing and motivating climate for employees to share knowledge, it triggers the impetus for the motivation to share knowledge. This could include extrinsic motivation such as monetary incentives and non-monetary awards and rewards such as promotions. Hence, organisational intervention is very important to make employees of agricultural institutes share knowledge. Based on the findings, the study recommends that:

1. Agricultural research institutions in South-West Nigeria should expedite action in providing necessary motivation that could propel and increase

digital resource knowledge sharing behaviour among agricultural researchers,

2. Owing to the challenge of inadequate training on digital resource knowledge sharing in the research institutes, the institutes should provide necessary trainings that are directed towards enhancing the attitudes of agricultural researchers towards knowledge sharing.

3. In addition, a wide array of relevant workshops that could make it possible for the agricultural researchers to share their knowledge and experiences in the use of digital resources should be organised.

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