




# Intranet characteristics as determinants of intranet utilisation for knowledge management in Nigerian banks



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**Background:** All banks in Nigeria have fully implemented an intranet, and it has been used to link all branches across the country and provide access to varieties of information and facilitate knowledge management (KM) activities. The potential of the intranet to facilitate KM in an organisation is well spelled in the literature. However, little attention has been given to its use for KM, and factors that determine its use for KM in Nigerian banks have not been examined.

**Objectives:** This study investigates the determinants of intranet utilisation for knowledge management in Nigerian banks from the users' perspective.

**Methods:** A survey was adopted and a questionnaire was distributed to 555 banks' employees across 11 banks head office in Lagos, Nigeria. Data collected were analysed using frequencies and percentages, Pearson multiple correlations, and multiple linear regression.

**Results:** The result shows that the intranet is used for knowledge creation, storage, retrieval, distribution, and application in Nigerian banks. Furthermore, system quality was found to be the best predictor of the four KM processes followed by task technology fit, while service quality was not.

**Conclusion:** The study concluded that system quality is the most important intranet feature in predicting intranet utilisation for all the KM processes followed by perceived task technology fit, while service quality was found not to be a good predictor.

**Contribution:** This study is unique and one of the pioneer studies in Nigeria that focused on using intranet to manage knowledge in the Nigerian banking sector. The study identified intranet characteristics that are best predictors of KM processes.

**Keywords:** knowledge management; knowledge creation; knowledge storage and retrieval; knowledge distribution; knowledge application; intranet utilisation; task technology fit; system quality; information quality; service quality.

## Introduction

Knowledge management has been identified as a key strategy for organisations to achieve a sustainable competitive edge. It has become more important to organisations than financial resources, market position, technology, or any other organisational asset (Wang & Wang 2016). Effective knowledge management (KM) in a corporate organisation involves knowledge acquisition/creation, storage and retrieval, distribution, and application (Alavi & Leidner 2001; Gonzalez & Martins 2017). Organisational knowledge creation involves adding new knowledge components or replacing existing components within the organisation's tacit and explicit knowledge (Kó et al. 2019). Organisational knowledge storage and retrieval usually described as organisational memory includes knowledge residing in different units of organisations in various forms. These include written documentations, structured information stored in electronic databases, codified human knowledge stored in expert systems, documented organisational procedures and processes, and tacit knowledge acquired by individuals and team in a workplace (Gonzalez & Martins 2017). Organisational knowledge distribution involves making knowledge available to where it is needed at the appropriate time. Application of organisational knowledge involves the reuse of acquired knowledge by the organisation to leverage competitiveness (Chen et al. 2022).

Stenmark (2002) observed that an intranet can enhance creativity and knowledge creation in an organisation by providing a variety of information for all in dynamic and unmanaged

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environments. An intranet is an organisational internal network that can provide access to data across all branches. It is built on the existing organisational network infrastructure fortified with an Internet connection and web applications (Masrek et al. 2011). Many banks in Nigeria have fully implemented intranet and it has been used to link all branches across the country and provide a single information silo (Dauda & Akingbade 2011).

Although Nigerian banks originally deployed intranet for these purposes, it can however be used to facilitate knowledge management activities also. The capability of the intranet to facilitate organisational knowledge management is well noted in the literature (Adeniji 2007; Damsgaard & Scheepers 2001; Edem, Ani & Ntui 2011; Masrek et al. 2011; Ohiorenoya & Eboime 2014; Stenmark 2002). But little attention has been given to its use for knowledge management and the factors that determine its use for knowledge management in Nigerian banks. Therefore, this study investigates the use of intranet for knowledge management and identifies factors that determine its use for knowledge management in Nigerian banks.

## Literature review

The capability of an organisation to create new knowledge is the most important source of gaining a sustainable competitive advantage (Imhanzenobe, Adejumo & Ikpesu 2021). The process of knowledge creation in the organisation starts with the need to solve operational problems, make a decision, identify knowledge gap, or invent innovation (Evans, Dalkir & Bidian 2014). Nonaka (1994) identified four modes of knowledge conversion as: socialisation, externalisation, combination, and internalisation. Socialisation deals with how tacit knowledge can be transferred among the employees in an organisation through social interaction; it is similar to the method used in apprenticeship through which craftsmanship is learned (Nonaka 1994). Externalisation involves the codification of individual tacit knowledge such as experience gathered over time in a form understandable by others. Combination involves conversion from explicit to explicit knowledge by merging, categorising, reclassifying, and synthesising the existing explicit knowledge. Internalisation is achieved through individual identification of and learning from relevant knowledge within the organisation memory. Knowledge storage and retrieval are very important as they prevent the organisation from reinventing the wheel. Research has shown that as organisations create knowledge and learn, they also forget or lose track of the acquired knowledge (Chen et al. 2022).

Organisations have placed more emphasis on knowledge sharing, which is treated as crucial to organisational success (Savolainen 2017). The process and channel of knowledge dissemination adopted in an organisation are very crucial, as research has shown that employees are rarely aware of newly created knowledge. According to Broniatowski and Magee (2017) it is very common for organisations to look outside their boundaries for knowledge that exist within

their knowledge base. Knowledge application is an important component of the KM process as an organisation can only gain a competitive advantage when the acquired knowledge is put into use. It has been argued that the competitiveness of any organisation depends on its ability to effectively apply its acquired knowledge in decision-making and problem-solving (Chen et al. 2022).

There are three strategies to KM: organisational, ecological, and techno-centric strategy (Imhanzenobe et al. 2021). The techno-centric also known as system strategy is the most adopted because it is capable of managing both tacit and explicit knowledge, hence the reason for the deployment of the knowledge management system (KMS) by many organisations (Nattapol, Peter & Laddawan 2010). According to Wang and Wang (2016), the system deployed for KM must possess three features: knowledge repositories, knowledge maps, and collaborative tools. All these features are possessed by the intranet.

## Intranet utilisation for KM

Literature has considered system utilisation in two dimensions: voluntary utilisation and mandatory utilisation (DeLone & McLean 2003). In the banking industry, intranet usage is mandatory for every core employee, who usually needs to access information for almost all their business activities. Authors such as DeLone and McLean (2003) have explained that when measuring utilisation of a mandatory system the extent, nature, quality, and appropriateness of use must be considered. Studies on intranet utilisation (Rodrigo & Manoel 2014; Lee & Kim 2009) have identified two dimensions of utilisation as mode and purpose of utilisation. Based on this, this study considered intranet utilisation for KM as the dependent variable, where four processes of KM: creation, storage and retrieval, distribution, and application were considered.

Literature has identified the intranet as a tool that can enhance organisational KM (Adeniji 2007; Damsgaard & Scheepers 2001; Edem et al. 2011; Masrek et al. 2011; Ohiorenoya & Eboime 2014; Stenmark 2002). Benbya et al. (2004) classified intranet features that make it suitable for KM in corporate organisations into three categories as: (1) core capabilities (i.e. classification scheme [taxonomy], publishing, searching, personalisation, integration, and collaboration); (2) supportive capabilities (i.e. security, profiling, and scalability); and (3) web services (i.e. employee services through the intranet).

## Intranet characteristics and intranet utilisation for KM

According to the task-technology fit model of Goodhue and Thompson (1995), users tend to use a particular technology when they feel it fits their task portfolio. Intranet has been found to possess functionalities suitable for knowledge creation. Masrek et al. (2011) explained how the five intranet utilisation modes can be used for facilitating knowledge creation using the four knowledge

conversion model of Nonaka 1994. Also, knowledge needs to be classified for proper storage and identification upon retrieval. These can be achieved by the intranet classification scheme and search respectively, as identified by Memon and Meyer (2017).

Intranet has been found to play an important role in knowledge sharing in an organisation, where three perspectives of knowledge sharing in an intranet environment were identified as information (provide access to structured and unstructured information), awareness (support information flow and connect the employee to information and people), and communication (support communication between people with the same interest through collaboration and community of practice) (Savolainen 2017). Also, Benbya et al. (2004) observed that for effective knowledge sharing, employees need to be classified based on their job profile to ensure the distribution of the right knowledge to the right person at the right time which can be achieved with the intranet profiling tools and the publishing tools.

DeLone and McLean (2003) have earlier pointed out that the utilisation of mandatory systems such as the intranet must be measured based on the extent, nature, quality, and appropriateness of the system use. This study therefore, considered intranet usability as a function of intranet quality, information quality, and service quality as the factors that can influence intranet utilisation for KM in Nigerian banks. According to Memon and Meyer (2017), intranet has the capability of being the organisational brain that equips employees with the necessary knowledge and vital information required to execute their tasks if properly built. Also, Kő et al. (2019) described information communication technology (ICT) as a shared information workspace with three different spaces which include: content, communication, and collaboration space. As a content space, the intranet has the capability of information storage and retrieval; as a communication space, the intranet can provide an avenue for conversation among employees of the organisation; and as a collaborative space, the intranet can act as Computer Supported Cooperative Work (CSCW). Intranet has the necessary capabilities in terms of system quality, information quality, and service quality that are suitable for KM within a corporate organisation. These features of an intranet to support KM provide the basis for the four hypotheses formulated in this study:

H0<sub>1</sub>: intranet characteristic factors (task technology fit, usability factors) will not significantly relate to intranet utilisation for knowledge creation in Nigerian banks.

H0<sub>2</sub>: intranet characteristic factors (task technology fit, usability factors) will not significantly relate to intranet utilisation for knowledge storage and retrieval in Nigerian banks.

H0<sub>3</sub>: intranet characteristic factors (task technology fit, usability factors) will not significantly relate to intranet utilisation for knowledge distribution in Nigerian banks.

H0<sub>4</sub>: intranet characteristic factors (task technology fit, usability factors) will not significantly relate to intranet utilisation for knowledge application in Nigerian banks.

## Methodology

### Construct measurement

The study investigates intranet characteristics as determinants of intranet utilisation for KM in Nigerian banks. Intranet characteristics were measured by perceived task technology fit and perceived intranet usability. Perceived task technology fit was adapted from the task technology fit model of Goodhue and Thompson (1995), and it was measured using five items by adopting some factors such as quality, compatibility, ease of use/training, and system reliability of Goodhue and Thompson (1995).

Intranet usability, on the other hand, was measured using the approach of Marek et al. (2011) where it was measured as a function of system quality, information quality, and service quality of DeLone and McLean (2003). System quality was determined as the degree to which it is convenient for users to access information, consistency of the information, enabling of sub-system integration by the system, flexibility of use of the system by users, users' realisation of expectations working with the system, and users' dependability on the system.

Furthermore, the dependent variable, intranet utilisation for KM was measured using four KM processes i.e. knowledge creation, knowledge storage and retrieval, knowledge distribution, and knowledge application. Intranet utilisation for knowledge creation was determined by intranet use for problem-solving activities, brainstorming/meeting/collaboration, interaction with colleagues, searching and generating new information, and publishing, recording, and assimilating knowledge. Intranet utilisation for knowledge storage and retrieval was captured by five items which include: intranet stored generated knowledge, embedded knowledge repository possess the capability of classifying explicit and tacit knowledge, capability for searching stored knowledge, and content update and backup. Intranet utilisation for knowledge distribution was determined by intranet use for work discussion, creating awareness on newly generated knowledge and informing colleagues on past experiences. Intranet utilisation for knowledge application was determined by the presence of needed information for solving the problem, decision-making, and developing new products and services. All constructs were measured through the administration of a questionnaire designed on a four-point Likert scale (4 = strongly agreed and 1 = strongly disagreed).

### Sample and sampling procedure

Data for the study were collected through a questionnaire administered to employees in the head office of Nigerian banks. The study considered all licensed banks in Nigeria that have their head office in Lagos State. Of the 20 licensed banks in Nigeria, 18 have their head office in Lagos, and all were considered for the study and contacted to request their participation in the study. Eleven out of the 18 banks gave

their consent to participate in the study. In selecting the number of respondents from each bank, two criteria were used: number of branches and employees across Nigeria. Based on these criteria, the study categorised the 11 banks as the top (banks with above 400 branches and 6000 employees), medium (banks with above 200 branches and above 4000 employees), and lower (banks with less than 200 branches and not more than 4000 employees). In all, six banks fall under top-rated banks, two fall under medium-rated banks, and three fall under low-rated banks. In the banks categorised as top, 60 respondents were randomly selected from each of the bank giving a total of 360 respondents. Further more, 45 respondents were randomly selected from each of the banks categorised as a medium which equals 90 respondents, while 35 respondents each were randomly selected from the three banks categorised as lower giving a total of 105 respondents, making a total of 555 respondents (360+90+105) representing the sample for the study.

### Reliability and validity of the research instrument

The questionnaire used for data collection was validated by four experts. They were specifically requested to carry out the face and content validity of the instruments by evaluating the quality of items in terms of clarity, appropriateness of language, and adequacy of the items. To determine the reliability of the questionnaire, it was administered to 80 banks' employees randomly selected from eight banks in the Ibadan metropolis which has similar characteristics with the study population (employees in banks' head office, Lagos). A total of 10 randomly selected employees from each of the eight banks were administered the questionnaire. Out of the 80 copies of the questionnaire, 41 copies were returned but only 40 were good for reliability analysis. A split-half reliability method was adopted, and the Cronbach alpha reliability test was conducted to determine the internal consistency of each factor/variable (i.e. subscale in the questionnaire) (Taber 2018). Table 1 reports the Cronbach alpha coefficient of each factor in the questionnaire.

*Data Collection:* A total of 555 copies of the questionnaire were administered to bank employees in the 11 banks that consented to participate in the study. Out of these 555 copies, 423 were returned from which 411 were usable for statistical analysis giving a 76.2% return rate.

## Data analysis and result

### Demographic profile of respondents

Table 2 presents the demographic profile of respondents where 52.1% were male employees and 47.9% were female employees. Close to half of the respondents (46.5%) possess a bachelor's degree and the majority (57.7%) have less than 5 years' experience in a banking job. A small percentage of the respondents (22.4%) work in the operation unit of their bank.

## Intranet characteristics

### Perceived task technology fit of intranet in Nigerian banks

Table 3 shows the descriptive result of banks' employees' perception of the task technology fit of an intranet. The average mean score of the five items was 3.27 suggesting that intranet technology in Nigerian banks possesses functionalities that makes it fit into the job portfolio and assists Nigerian banks' employees in performing their tasks. The result aligns with the findings of Kr̄cál (2018) and Masrek, Anwar & Bahry (2010). Kr̄cál (2018) claimed that the use of enterprise information portal empowers employees and makes them have a sense of accomplishment. Masrek et al. (2010), in their work on enterprise intranet effectiveness carried out in some selected Malaysian companies, reported that intranet use at the workplace boost employees' work productivities.

### Perceived usability of intranet in Nigerian banks

The perceived usability of the intranet in Nigerian banks was determined by three sub-constructs: system quality, information quality, and service quality. As shown in Table 4, the average score of four items used to measure system quality was 3.35 indicating that the perceived intranet quality of employees in Nigerian banks is well above average. The average score of the three items used to measure information quality was 3.24 suggesting that the

**TABLE 1:** Reliability assessment.

Factor	Least inter-item correlation	Cronbach alpha
Task technology fit	0.28	0.55
Intranet usability	0.38	0.80
Intranet utilisation for knowledge creation	0.40	0.77
Intranet utilisation for knowledge storage and retrieval	0.45	0.75
Intranet utilisation for knowledge distribution	0.52	0.81
Intranet utilisation for knowledge application	0.46	0.80

**TABLE 2:** Demographic profile of respondents.

Variable	Classification	Percentage (%)
Gender	Male	52.1
	Female	47.9
Educational qualification	ND	5.8
	HND	26.5
	BSc	46.5
	MSc/MBA	21.2
Year of experience	≤ 5	57.7
	6–10	28.2
	11–15	10.2
	≥ 16	3.8
Department/unit	Corporate communication	12.9
	Marketing	14.8
	Operation	22.4
	Finance/accounting	7.3
	Human capital/administration	8.0
	Audit/inspection	2.9
	IT/digital banking	11.7
	Customer services	14.4
	Credit/asset/liability/risk management	3.6
	Foreign operation/trade services	1.9

ND, National Diploma; HND, Higher National Diploma; BSc, Bachelor of Science degree; MSc, Master of Science; MBA, Master of Business Administration; IT, Information Technology.

intranet in Nigerian banks possesses high information quality. While the average score of the three items used to measure service quality was 3.27 showing that the intranet in Nigerian banks possesses high service quality. Overall, the result reveals that the intranet in Nigerian banks possesses system quality, information quality, and service quality which indicates that the perceived intranet usability of employees in Nigerian banks is high. This was supported by the work of Masrek et al. (2010) who reported that the intranet possesses information quality, system quality, and service quality that makes its use effective at workplaces in Malaysia. The operation in the present banking industry is information intensive and highly dynamic which requires a system that can provide accurate, relevant, and reliable information in a format that makes it usable instantly for the bank employees.

### Intranet utilisation for knowledge creation in Nigerian banks

Table 5 shows the descriptive result of intranet utilisation for knowledge creation in Nigerian banks. The average score on the seven items was 3.19 suggesting that the intranet is being used for knowledge creation in Nigerian banks. The result indicates that employees use intranet in the process of

**TABLE 3:** Descriptive profile of perceived task technology fit of intranet in Nigerian banks.

Items	Mean	SE	SD	Var.	Min	Max
I perceive our bank intranet as a means to get current and up-to-date information for my task	3.43	0.0401	0.6497	0.422	1	4
Information available on our intranet is sufficiently detailed for my task	3.12	0.0368	0.7460	0.557	1	4
Our intranet is easy to learn, use, and user friendly	3.43	0.0401	0.6496	0.422	1	4
I have received the necessary training on how to use, different features on our intranet	3.20	0.0348	0.7056	0.498	1	4
Intranet network failure affects my work efficiency and effectiveness	3.17	0.0411	0.8324	0.693	1	4
Average task technology fit score	3.27	0.0386	0.7167	0.5184	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed. SE, standard error; SD, standard deviation.

**TABLE 4:** Descriptive profile of perceived usability of intranet in Nigerian banks.

Items	Mean	SE	SD	Var.	Min	Max
<b>System quality</b>						
Our intranet when used is a convenient means of accessing information	3.57	0.0268	0.5424	0.294	1	4
Our intranet provides employees with consistent information	3.43	0.0289	0.5862	0.344	2	4
Our intranet assists employees in realising their expectations	3.14	0.0341	0.6906	0.477	1	4
Our intranet promotes the integration of sub-system within our bank	3.27	0.0332	0.6703	0.499	1	4
Average system quality score	3.35	0.0308	0.6224	0.404	-	-
<b>Information quality</b>						
Information retrieved from our intranet is usually accurate	3.24	0.0313	0.6330	0.401	1	4
Information retrieved from our intranet is usually complete and comparable to other sources	3.16	0.0311	0.6313	0.399	1	4
Information retrieved from our intranet is usually relevant to my work	3.33	0.0308	0.6234	0.389	1	4
Average information quality score	3.24	0.0311	0.6292	0.396	-	-
<b>Service quality</b>						
The response time of our intranet on request of information is high	3.29	0.0332	0.6707	0.450	1	4
Information retrieved from our intranet is reliable	3.28	0.0315	0.6374	0.406	1	4
Information retrieved from our intranet is usually well formatted	3.24	0.0330	0.6669	0.455	1	4
Average service quality score	3.27	0.0326	0.6583	0.437	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed. SE, standard error; SD, standard deviation.

problem-solving, brainstorming, collaboration, searching for existing knowledge, publishing new ideas, recording individual tacit knowledge, and accessing bank knowledge repository, all of which suggests that intranet is used for knowledge creation in Nigerian banks. The results affirm the claim made by Alyoubi et al. (2018) that an organisation knowledge portal is a suitable technology for achieving organisational knowledge creation. Krčál (2018) also confirmed that an enterprise information portal provides employees with rich information to promote creativity within a corporate organisation.

### Intranet utilisation for knowledge storage and retrieval in Nigerian banks

Table 6 shows the descriptive results of intranet utilisation for knowledge storage and retrieval in Nigerian banks. The average score of the five items was 3.17 indicating that the intranet is being used for knowledge storage and retrieval in Nigerian banks. The result indicates that the intranet is used to store, update, and backup newly generated knowledge, classify existing knowledge (both tacit and explicit), search for stored knowledge, and link employees to experts. This implies that employees search and retrieve knowledge pertinent to their needs on their intranet suggesting intranet utilisation for knowledge storage and retrieval in Nigerian banks which affirms the claim made by Alyoubi et al. (2018), Kö et al. (2019), and Memon & Meyer (2017).

### Intranet utilisation for knowledge distribution in Nigerian banks

Table 7 shows the descriptive result of intranet utilisation for knowledge distribution in Nigerian banks. The average score of the five items was 3.19 suggesting that the intranet is being used for knowledge distribution in Nigerian banks. The result shows that the intranet is used to engage in work-related discussions and other issues that are peripheral to work among colleagues, provide awareness on newly

**TABLE 5:** Descriptive profile of intranet utilisation for knowledge creation in Nigerian banks.

Items	Mean	SE	SD	Var.	Min	Max
In our bank, an intranet is used in the process of exploring problem-solving-activities to generate new ideas and knowledge	3.32	0.0298	0.6048	0.366	1	4
Our bank intranet is used for brainstorming, meeting, and collaboration in the process of finding a solution to the problem(s) at hand	3.13	0.0344	0.6974	0.486	1	4
Employees can search for existing knowledge on our bank intranet	3.28	0.0301	0.6074	0.369	1	4
Employees can work with different sub-system through our bank intranet to generate new information	3.22	0.0312	0.6320	0.399	1	4
Employees can publish newly generated knowledge on our intranet	3.13	0.0338	0.6840	0.468	1	4
Our intranet has recording functionality through which individuals can record their tacit knowledge for others to have access to it	3.02	0.0373	0.7539	0.568	1	4
Employees can access the bank knowledge repository through our intranet to assimilate knowledge	3.25	0.0287	0.5797	0.336	2	4
Average intranet utilisation for knowledge creation score	3.19	0.0321	0.6513	0.4274	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed.  
SE, standard error; SD, standard deviation.

**TABLE 6:** Descriptive profile of intranet utilisation for knowledge storage and retrieval in Nigerian Banks.

Items	Mean	SE	SD	Var.	Min	Max
Newly generated knowledge such as ideas, lessons learned, work method, etc. are stored, updated, and backed up regularly on our intranet	3.24	0.0348	0.7048	0.497	1	4
Our intranet has the capability to properly classify existing explicit knowledge	3.17	0.0327	0.6610	0.437	1	4
Our intranet can classify experts in our bank based on their area of specialisation	3.13	0.0362	0.7320	0.536	1	4
Our intranet can search for stored knowledge within our bank network	3.25	0.0319	0.6434	0.414	1	4
Our intranet can provide employees access to experts (experts' knowledge) even virtually	3.07	0.0354	0.7156	0.512	1	4
Average intranet utilisation for knowledge storage and retrieval score	3.17	0.0342	0.6914	0.4792	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed.  
SE, standard error; SD, standard deviation.

**TABLE 7:** Descriptive profile of intranet utilisation for knowledge distribution in Nigerian banks.

Items	Mean	SE	SD	Var.	Min	Max
Employees engage in work discussion using our bank intranet	3.22	0.0336	0.6804	0.463	1	4
Our bank classifies employees based on their job profile	3.21	0.0294	0.5934	0.352	1	4
Our bank intranet provides awareness on newly generated information	3.29	0.0295	0.5970	0.356	1	4
Employees use our bank intranet to inform each other regularly about past experiences on related tasks	3.11	0.0336	0.6816	0.465	1	4
Employees discuss common interest that is peripheral to work on our bank intranet	3.14	0.0346	0.6990	0.490	1	1
Average of intranet utilisation for knowledge distribution score	3.19	0.0321	0.6503	0.425	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed.  
SE, standard error; SD, standard deviation.

generated information, and learn about the experience. This implies that with the intranet, banks have been able to create a knowledge-sharing environment where employees chat freely with one another to have access to expert knowledge. This suggests intranet utilisation for knowledge distribution, thereby affirming the claim of Savolainen (2017) that benefiting from the knowledge of individual employees is becoming increasingly important in what we refer to as knowledge-based organisations where an organisation depends on cooperation across boundaries, self-governing project groups, and quick communication. It also supports the findings of Masrek et al. (2011) which indicated that with the availability of the intranet, the activities of knowledge donation and receiving are conveniently practiced.

#### Intranet utilisation for knowledge application in Nigerian banks

Table 8 shows the descriptive result of intranet utilisation for knowledge application in Nigerian banks. The average score of the five items was 3.20 indicating that the intranet is being used for knowledge application in Nigerian banks. The result

shows that the intranet is used to fetch information in the process of solving problems or decision-making and developing new products and services. It was also found that the intranet encourages collective minds and facilitates knowledge connection and integration, which suggests intranet utilisation for knowledge application in Nigerian banks. This affirms the claim of Memon and Meyer (2017) that the information portal of an enterprise provides employees with in-time relevant information they need to perform their duties and make efficient business decisions over unexpected occurrences.

#### Relationship between research variables

To test the formulated hypotheses, statistical analysis involving multiple correlations and multiple linear regression analysis was conducted between the independent variables (intranet characteristic factors), and dependent variables (intranet utilisation for KM) (see Table 9, Table 10, Table 11, Table 12, Table 13).

As shown in Table 9, all the intranet characteristic factors have a good relationship with the intranet utilisation for

**TABLE 8:** Descriptive profile of intranet utilisation for knowledge application in Nigerian banks.

Items	Mean	SE	SD	Var.	Min	Max
Employees find the necessary information on our bank intranet while attempting to solve the problem(s) or making a decision	3.29	0.0306	0.5210	0.386	1	4
Knowledge on our bank intranet is used to guide the process of developing new products and services	3.19	0.0313	0.6343	0.402	1	4
Our bank intranet encourages collective minds among employees	3.15	0.0316	0.6400	0.410	1	4
Our bank intranet facilitates knowledge connection and integration	3.20	0.0298	0.6023	0.363	1	4
Our bank intranet facilitates organisational centralised memory (repository)	3.19	0.0330	0.6696	0.448	1	4
Average intranet utilisation for knowledge application score	3.20	0.0313	0.6134	0.402	-	-

Note:  $N = 411$ , 4 = Strongly agreed, 3 = Agreed, 2 = Disagreed and 1 = Strongly disagreed. SE, standard error; SD, standard deviation.

**TABLE 9:** Mean, standard deviation, and inter-correlation matrix between intranet utilisation for knowledge management factors and intranet characteristic factors.

Items	Mean	SD	Task tech. fit	System quality	Information quality	Service quality
K. creation	22.4040	3.3002	0.524**	0.608**	0.489**	0.447**
K. storage and retrieval	15.8765	2.7637	0.501**	0.531**	0.467**	0.391**
K. distribution	15.9704	2.3505	0.517**	0.488**	0.412**	0.411**
K. application	16.0107	2.6350	0.463**	0.523**	0.414**	0.357**
Task tech. fit (TTF)	16.3612	2.5189	1.000	-	-	-
System quality	13.4265	1.9438	0.635**	1.000	-	-
Information quality	9.7359	1.5636	0.549**	0.557**	1.000	-
Service quality	9.7971	1.6555	0.542**	0.550**	0.694**	1.000

Note: K = Knowledge, Tech. = Technology. SD, standard deviation. \*\*,  $p < 0.05$ .

**TABLE 10:** Relative contribution of intranet characteristic factors that determine intranet utilisation for knowledge creation.

Variable	Beta	T	Sig	VIF
Task technology fit	0.170	3.217	0.001**	1.897
System quality	0.400	7.459	0.000**	1.929
Information quality	0.153	2.688	0.007**	2.175
Service quality	0.030	0.535	0.593	2.141

VIF, variance inflation factor.

\*\*,  $p < 0.05$ ,  $R = 0.648$ ,  $R^2 = 0.420$ , Adjusted  $R^2 = 0.414$ ,  $F = 70.907$ , Sig. = 0.000.

**TABLE 11:** Relative contribution of intranet characteristic factors that determine intranet utilisation for knowledge storage and retrieval.

Variable	Beta	T	Sig	VIF
Task technology fit	0.218	3.906	0.000**	1.897
System quality	0.295	5.247	0.000**	1.929
Information quality	0.203	3.399	0.001**	2.175
Service quality	-0.030	-0.509	0.611	2.141

VIF, variance inflation factor.

\*\*,  $p < 0.05$ ,  $R = 0.591$ ,  $R^2 = 0.349$ , Adjusted  $R^2 = 0.343$ ,  $F = 53.097$ , Sig. = 0.000.

each of the KM processes ranging between 608 and 391. System quality was found to have the highest relationship with knowledge creation, knowledge storage and retrieval, and knowledge application, while task technology fit was found to be positively related to knowledge distribution. Also, the correlation value between all the intranet characteristic factors suggested no multicollinearity among the factors, less than 0.7 as suggested by Tabachnick and Fidell (2012), which makes all the factors suitable for inclusion in the regression model.

The results of the tested hypotheses are presented in Table 10, Table 11, Table 12, and Table 13. The results suggest that all the intranet characteristics/factors (system quality, task-technology fit, information quality, and service quality) together made 42.0%, 34.9%, 32.2%, and 31.2% variance observed in intranet utilisation for knowledge creation, storage and retrieval, distribution and application

**TABLE 12:** Relative contribution of intranet characteristic factors that determine intranet utilisation for knowledge distribution.

Variable	Beta	T	Sig	VIF
Task technology fit	0.297	5.212	0.000**	1.897
System quality	0.214	3.730	0.000**	1.929
Information quality	0.073	1.206	0.229	2.175
Service quality	0.082	1.351	0.178	2.141

VIF, variance inflation factor.

\*\*,  $p < 0.05$ ,  $R = 0.567$ ,  $R^2 = 0.322$ , Adjusted  $R^2 = 0.315$ ,  $F = 47.120$ , Sig. = 0.000.

**TABLE 13:** Relative contribution of intranet characteristic factors that determine intranet utilisation for knowledge application.

Variable	Beta	T	Sig	VIF
Task technology fit	0.182	3.181	0.002**	1.897
System quality	0.344	5.966	0.000**	1.929
Information quality	0.143	2.328	0.020**	2.175
Service quality	-0.030	-0.488	0.626	2.141

VIF, variance inflation factor.

\*\*,  $p < 0.05$ ,  $R = 0.559$ ,  $R^2 = 0.312$ , Adjusted  $R^2 = 0.305$ ,  $F = 45.303$ , Sig. = 0.000.

respectively. Also, all these factors except service quality are good predictors of intranet utilisation for knowledge creation, storage and retrieval, distribution, and application in Nigerian banks. This is not consistent with the four formulated null hypotheses and, therefore, the hypotheses are rejected.

## Discussion

The findings showed that all the intranet characteristics are good predictors of all the KM processes with system quality being the best predictor followed by perceived task technology fit while service quality is the weakest predictor. System quality, information quality, and service quality were adapted from the DeLone and McLean (2003) information system success model and was called perceived intranet usability in this study, while perceived

task technology fit was adapted from Goodhue and Thompson (1995).

All three usability constructs were found to have a significant relationship with intranet utilisation for knowledge creation, storage, retrieval, distribution, and application. This is consistent with the findings of previous studies on the determinants of KMSs usage and success. This is consistent with the findings of Cham et al. (2016) on the determinants of KMSs usage success in the banking industry. In a similar study, Kő et al. (2019) found that system, information/knowledge, and service quality have a significant relationship with knowledge portal use and satisfaction. De Feitas et al. (2020) proposed an improved model for KMSs success with system quality, information/knowledge quality, and knowledge contribution as determinants of KMS usage and effectiveness. Putting the model to test, the study found system quality and information/knowledge quality as good predictors of KMS usage and effectiveness.

Therefore, for the smooth use of the intranet for KM in Nigerian banks, the intranet must be in its full state of functionality (i.e. the system quality must be taken seriously) such as functionalities that support knowledge development and other features that make intranet functions very well and interest employees to use it. Knowledge classification both the codified (explicit) and experts (tacit) must be properly documented. The classification must be subject based and the content of the codified knowledge must be well formatted and easily located, while the chat tool functions to interact and brainstorm in the process of solving problems and or decision-making.

Corroborating the view, perceived task technology fit was found to be the best predictor of intranet utilisation for knowledge creation, storage and retrieval, distribution, and application after system quality. The result is in line with the findings of previous studies that considered task technology fit as a determinant of KMS use. Seyed, Saeed, and Farzaneh (2014) studied the relationship among KM processes, KMS, and performance using task technology fit as the mediating construct and found task technology fit as a good determinant of KMS use and in turn improves both individual and organisational performance. Similarly, in another empirical study, Pai and Zou (2013) on factors influencing the use of KMSs in public sector organisations reported that perceived task technology fit was considered among other influencing factors. The result of the study revealed perceived task technology fits as a very good predictor of KMS use.

## Conclusion

Intranet has been implemented virtually in all commercial banks in Nigeria to link together all their branches across the country. Despite its wide implementation and use in Nigerian banks, its potential for KM and the factors that determine its use for KM have not been given attention.

Based on this, this study investigates intranet characteristics as determinants of intranet utilisation for KM in Nigerian banks from the users' perspective. This study found the intranet to be utilised for KM in Nigerian banks. The study empirically tests the relationship between intranet utilisation for KM and intranet characteristic factors (task technology fit, system quality, information quality, and service quality). This study found system quality to be the most important intranet characteristic/factor in predicting intranet utilisation for all the KM processes followed by perceived task technology fit while service quality was found not to be a good predictor.

## Recommendations

Since this study was based only on the banking industry, it is recommended that future researchers should consider other industries where the intranet has been fully implemented to allow generalisation of the result. Also, future research should dig deep into intranet functionalities implemented in each organisation involved in the research to avail the opportunity of comparison on intranet utilisation for KM among related organisations. Furthermore, future research should study the path analysis of the factors using the structural equation model.

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## Competing interests

The authors have declared that no competing interest exists.

## Authors' contributions

G.A.A. conceptualised the idea, wrote the draft background, reviewed the literature, and was involved in analysis writing, reading, and discussion. A.T. assisted with the review of the literature, data collection, and compilation of the references. He also supervised the entire work along with the data. B.O.O. participated majorly in the collection of data, analysis, and compilation of references. He did the review and editing and proof-reading, and compilation of references.

## Ethical considerations

Ethical clearance to conduct this study was obtained from the Ethical Review Committee of the University of Ilorin, Nigeria (No. UERC/ASN/2018/2056).

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## Data availability

The authors confirm that the data supporting the findings of this study are available within the article [and/or] its supplementary materials.

## Disclaimer

The views and opinions expressed in this article are those of the authors and do not necessarily reflect the official policy or position of any affiliated agency of the authors.

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