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Factors influencing knowledge sharing among information and communication technology artisans in Nigeria

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Abstract

Purpose – The purpose of this paper is to investigate the factors influencing knowledge sharing (KS) among information and communication technology (ICT) artisans in Nigeria by adopting the social exchange and social capital theories.

Design/methodology/approach – Survey research design was adopted. Convenience and snowball sampling techniques were used to select the respondents. In total, 285 copies of questionnaire were distributed, of which 214 copies were considered useful for data analysis, giving a 75.09 per cent response rate.

Findings – The results show that the gender of the artisans, perceived benefits, social identification, shared language and goals had positive significant and relationships with KS except social identification where the relationship was negative.

Research limitations/implications – The findings and conclusion from this paper are subjected to a number of limitations. Because the population was limited to a small population and the study adopted convenience and snowball techniques, the results cannot be generalised to all ICT artisans in Nigeria.

Practical implications – The paper confirms the role of social exchange and social capital theories in interpreting individual's behaviour in KS and provides useful insights on how to implement good KS practices among the artisans.

Social implications – This paper could assist policymakers in promoting and implementing KS practices among professionals and quasi-professionals who contribute to the gross domestic product of the country.

Originality/value – This paper is one of the first pieces of empirical research on KS among information technology artisans in Nigeria that used the social exchange and social capital theories.

Keywords Social capital, Nigeria, Information communication technology, Knowledge sharing, Artisan, Social exchange

Paper type Research paper

1. Introduction

Knowledge is described as the collection of individual's skills and acquired learning, and one of the most important assets of any organisation. Through the harnessing and exploitation of acquired knowledge, people develop new innovative and competitive tactics and strategies, which is done through the process of knowledge management (KM). Given the fact that individuals or organisations struggle with knowledge loss resulting from employee retirement, job transfer, mobility, alternative work arrangements and death, the sharing and transferring of knowledge is very vital to KM.

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For instance, when an individual dies or leaves an organisation, his idea, information, experience, contact, relationships and insights leave with him if no attempts are made to identify, capture and share this knowledge. How then can knowledge be preserved? Knowledge is best preserved by sharing. Therefore, knowledge sharing (KS) is considered to be the most essential process of KM.

KS is a social interaction culture, involving the exchange of knowledge, experiences and skills. It is an activity through which knowledge (information, skills or expertise) is exchanged among people, communities or organisations. Wei *et al.* (2012) explain that KS is the dissemination or exchange of explicit or tacit knowledge, ideas, experiences or even skills from one individual to another individual, while Cheng *et al.* (2009) posit that KS is about communicating knowledge within a group of people. Therefore, it is fair to state that KS is a key element in the survival of any cultural system as KS is a key process in translating individual learning into organisational capability. KS not only improves competence of the people that are involved in the process but it also benefits the community or organisations by speeding up the deployment of knowledge.

KS has received immense attention because of the recognition of its value in learning, knowledge creation and innovation. Sharing of knowledge brings about increase in productivity and its importance cannot be overlooked. Parekh (2009) highlights some benefits of KS: helps to avoid reinventing research, reduces redundant work, reduces cost of inventions and expedites creation of knowledge with the help of experts and experienced persons. When properly managed, KS can greatly improve work quality, decision-making skills, problem-solving efficiency as well as competency (Yang and Chen, 2007). KS is also a learning experience for the sharer. For example, if employees are motivated to share knowledge with their peers but they are not sure if they are able to communicate the knowledge in a manner in which it will be understood, they are more likely to use KS as an opportunity to deepen their own understanding and find a better way to organise and explain the knowledge before they share it. Moreover, knowledge sharers may learn others' perspectives on the same issue or problem being discussed. Additionally, individuals may share their ideas with others to further develop them and to facilitate creativity.

However, a fundamental problem is that people often lack the desire to share their knowledge with other members of the community or organisation (Denning, 2006). The willingness of individual to share and integrate their knowledge is one of the central barriers to KM. Davenport and Prusak (1998) explain that KS is often unnatural because people think that their knowledge is valuable and important. Liang *et al.* (2008) also explain that people who possess great amounts of knowledge are unwilling to share it. Ruggles (1998) contributes that the biggest challenge organisations face with regard to KM is changing people's behaviour, particularly with regard to KS.

The uniqueness and dynamism of the ICT industry has brought tremendous advancement in computing and telecommunication technology, which has necessitated the sprouting of different information and communication technology (ICT) professionals and quasi-professionals in Nigeria. This dynamism brought many artisan-oriented ICT businesses into the Nigerian economy to cater for ICT needs of the people. O'Reilly-Briggs (2010, p. 8) describes artisan as "any skilled manual worker who employs creative thinking, dexterity and specialised knowledge to make functional or decorative items; and this definition includes both tradespeople and craft workers". As means of livelihood, artisanship provides an ideal avenue for creative productivity and

promotes independence and entrepreneurship. Nwagwu (2015) opines that artisans have thrived because artisanship offers distinct advantages like minimal start-up capital, flexible work hours, the ability to work at home and freedom to manage one's own business. Hnatow (2009) also states that artisanship offers opportunities for seasonal employment and that the sector is often a default occupation for individuals who have limited option of employment. Majority of these groups of professionals did not acquire the skill by attending a formal school. Some acquired the knowledge through apprenticeship, while some acquired the knowledge through some short training or courses. An ICT artisan is described as an individual who specialises in the sale, provision, maintenance and repair of ICT products and services, and who might not have acquired formal education in information technology. These artisans are various individuals who have transitioned from other fields, and who did not necessarily acquire their IT skills through any form of training (Idowu, 2014).

ICT artisanship is considered a profession that has become an integral part of the society because of the shift towards ICT use. ICT artisans display great dexterity. They have the skill to solve various ICT problems, ranging from building personal computers, running some hardware and software tests, diagnosing and providing technical support as well as selling various ICTs. Their task is complex and demanding because the strategy to becoming a better ICT technician or artisan involves continuous personal and skills development to update knowledge and skills. Their work also requires them to be abreast of the latest technological innovations and developments. They are faced with the challenge of keeping up with a dynamic technological landscape characterised with rapid and constant change.

ICT artisans are part of the professionals that are contributing to the gross domestic product of Nigeria. A search of literature reveals that a lot of studies have been carried out on KS in Nigeria but with none of these studies focusing on ICT artisans. As studies have revealed that majority of ICT artisans in Nigeria did not acquire the skill by attending a formal school, how then do they acquire knowledge? Do they share knowledge among themselves? What are the factors that influence their KS? These are the questions this study provides answers to. Therefore, the main objective of the study is to investigate the factors that influence KS among ICT artisans in Ibadan, Nigeria, using the social exchange and social capital theories.

2. Literature review, research model and hypotheses

Various studies have helped to buttress that any human activity can be explained by examining the effect of human behaviour on such activities. This is because an individual's behaviour can either encourage or inhibit certain actions in human beings. Therefore, KS is one of such activities that can be explained by looking at how behaviour affects it. Several papers have reported findings about the factors that affect KS intention and behaviour using several theories. Aside studies where content analysis (Hung and Chuang, 2009) and literature review (Mohd and Zawiyah, 2009) were used, survey studies adopted a variety of models. Some of these previously used models include the theory of reasoned action (TRA) (Lin, 2007), modified TRA (Olatokun and Nwafor, 2012), theory of planned behaviour (Chun-Hsien *et al.*, 2014), social cognitive theory, Delone and McLean's success model (Halonen and Thomander, 2008), self-determination theory, cognitive evaluation theory (Galia, 2007), among others. However, among these several theories, social exchange theory (SET) and social capital

theory (SCT) have not been widely used in explaining KS. However, few studies, Casimir *et al.* (2012), report that KS is premised on social exchange and social capital theories.

2.1 Social exchange theory and knowledge sharing

Even though many studies explored KS behaviour (KSB) based on the social exchange perspective, different studies in different settings often reported inconsistent findings. The social exchange framework was introduced in the works of Homans (1961) and Blau (1964). Homans presents a concept of social behaviour that was based on exchange. Homan's position is that people seek a normative balance between rewards and costs, not profit maximisation at the expense of others. Sabatelli and Shehan (1993) summarise the theory and point out that individuals seek rewards and avoid punishments, and that in interacting with others, individuals seek to maximise profits for themselves, while minimising costs. Because it is not possible to know the actual rewards and costs involved in interacting with another before interactions occur, individuals guide their behaviour through their expectations for rewards and costs. Sabatelli and Shehan (1993) further explain that individuals, within the limitations of the information they possess, calculate rewards and costs and consider alternatives before acting; and that the standards that individuals use to evaluate rewards and costs differ from person to person and can vary over time.

SET explains that individuals share their knowledge because of their perception of the benefit that may result from such behaviour. In essence, individuals in a community or organisation that provide an environment to support a positive perception are more likely to contribute their knowledge (Liang *et al.*, 2008). SET also explains that individuals regulate their interactions with other individuals based on a self-interest analysis of the costs and benefits of such an interaction. In other words, people seek to maximise their benefits and minimise their costs when exchanging resources with others (Molm, 2001). These benefits include future reciprocity, status, job security, balance of power and maintenance of future relationships (Bock *et al.*, 2005; Cabrera and Cabrera, 2005; Muthusamy *et al.*, 2007), and may help to explain the motivation of individuals' behaviours in a community or organisation to share knowledge (Zboralski, 2009) because KS requires a willingness to collaborate with others. From this perspective, KS will be positively affected when an individual expects to obtain some future benefits through reciprocation (Cabrera *et al.*, 2006).

SET has been used by some studies in the developed countries as a theoretical model for investigating individual's KSB (Blau, 1964; Bock and Kim, 2002; Casimir *et al.*, 2012; Eunjee, 2009; Kankanhalli *et al.*, 2005; Liang *et al.*, 2008). Kankanhalli *et al.* (2005) explain that an individual's perceived benefit is one of the major factors that encouraged employees to contribute knowledge to electronic knowledge repositories. Chiu *et al.* (2006) also studied the effect of interpersonal factors such as social interaction, trust, and norm of reciprocity on KS in virtual communities. This study adopted the variables, perceived benefits, social interaction and trust, from the SET.

2.1.1 Perceived benefit. Forsythe *et al.* (2006) define perceived benefits as the individuals' subjective perception of gain from their behaviours. SET suggests that individuals evaluate the perceived ratio of benefits to cost and base their action decisions on the expectation that will lead to rewards such as respect, approval, reputation and tangible incentives (Blau, 1964). Wasko and Faraj (2005) explain that some people may choose to contribute their knowledge because they experience positive

feelings of sociability, that is, their sharing of knowledge will help them build a good reputation and improve their status within their social group. Thus, the expectation of personal benefits can motivate individuals to share their knowledge with others. This positive feeling is a type of intrinsic reward, e.g. realising one's complete personal and professional potential, and feeling of pride when others use one's ideas (Cabrera *et al.*, 2006). Davenport and Prusak (1998); Liang *et al.* (2008) found that KSB may be motivated by perceived benefits. Thus, this hypothesis is postulated:

H1. There is significant relationship between perceived benefit and KSB of ICT artisans.

2.1.2 Social interaction. Social interaction represents the strength of relationships, the amount of time spent and the frequency of communication among members of a community (Chiu *et al.*, 2006). It is the degree to which members of a community have existing social ties. Several studies (Chiu *et al.*, 2006; Liu and Liu, 2008; Wasko and Faraj, 2005; Hasgall, 2012) provide empirical support for the influence of social interaction on individual's KS. Social interaction and network ties provide the opportunity to combine and exchange knowledge and influence both access to parties for combining and exchanging knowledge and anticipation of value through such exchange, as explained by Hall (2003). Tsai and Ghoshal (1998) consider social interaction ties (network ties) as channels for information and resource flows, while Liang *et al.* (2008) explain that social interaction ties among members of a community allow a cost-effective way of accessing a wider range of knowledge sources. Based on this, it is hypothesised that:

H2. There is significant relationship between social interaction and KSB of ICT artisans.

2.1.3 Trust. Trust is a critical factor for knowledge transfer as it can act as a barrier or facilitator. Trust is viewed as a set of specific beliefs dealing primarily with the integrity, benevolence and ability of another party (Chiu *et al.*, 2006; Gefen *et al.*, 2003). It is the degree to which people have confidence in others' reliability, openness and honesty. Trust is particularly important in volitional behaviour such as KS. Trust creates and maintains exchange relationships, which lead to sharing of knowledge; hence, trust is considered the most effective and least costly method that can encourage people to share their knowledge (Ardichvili *et al.*, 2003; Sharratt and Usoro, 2003). People are willing to share their knowledge with others if they feel that the person is honest and can be trusted, thus trust has become a tool to motivate people to share knowledge. Blau (1964) explains that trust is essential for the social exchange process, while Nonaka (1994) indicates that interpersonal trust is important in teams and organisations for creating an atmosphere for KS. Sharratt and Usoro (2003) state that when people view themselves as a community upholding trustworthy values such as mutual reciprocity, honesty, reliability and commitment, there is likely to be greater degree of motivation to participate and share knowledge. Nahapiet and Ghoshal (1998) opine that individuals are more willing to engage in cooperative behaviours, such as KS, when trust exists among them. Montoro-Sanchez *et al.* (2011) equally explain that trust plays an important role in social transactions; therefore, trust can facilitate KS because voluntarily sharing one's knowledge with others is a social transaction.

Examining trust in this study is important because KS among the artisans involves providing knowledge to another person or a team or community of practice with

expectation for reciprocity (Wu *et al.*, 2007). Many studies (Casimir *et al.*, 2012; Chowdhury, 2005; Gururajan and Fink, 2010; Liang *et al.*, 2008; Wang *et al.*, 2007; Yeh *et al.*, 2006) have reported positive relationships between trust and KS. Liang *et al.* (2008) found trust to have a significant effect on KSB. Gururajan and Fink (2010) found that lack of trust impedes KS in an environment to perform. Thus, the next hypothesis is postulated as:

H3. There is significant relationship between trust and KSB of ICT artisans.

2.2 Social capital theory and KS

The concept of social capital draws attention to the effects and consequences of human sociability and connectedness and their relations to the individual and social structure. According to Bourdieu (1986, p. 248), social capital is defined as "the aggregate of the actual potential resources which are linked to possession of a durable network of more of less institutionalised relationships of mutual acquaintance or recognition". Ostrom (2001, p. 176) defines social capital as the "shared knowledge, understandings, norms, rules, and expectations about patterns of interactions that groups of individuals bring to a recurrent activity". Social capital is networks, norms and trust (Vial, 2011) and resources embedded in the social networks can be accessed or mobilised through ties in the networks (Lin, 2008).

Social capital is one type of social relationship characterised by trust, reciprocity and cooperation that is associated with positive community-development outcomes (Beard, 2005).

The SCT suggests that social capital, the network of relationships possessed by an individual or a social network and the set of resources embedded within it, strongly influences the extent to which interpersonal KS occurs (Nahapiet and Ghoshal, 1998). Lane and Lubatkin (1998) state that through close social interactions, individuals are able to increase the depth, breadth and efficiency of mutual knowledge exchange. One other basic idea of social capital is that one's family, friends and associates constitute an important asset that can be called upon in a crisis, enjoyed for its own sake and/or leveraged for material gain. What is true for individuals also holds for groups; hence, social capital refers to the norms and networks that enable people to act collectively. This conceptualisation of the role of social relationships in KS represents an important departure from earlier theoretical approaches, and thus has important implications for research and policy. Whereas Bourdieu (1986) uses social capital to explain the reproduction of social class divisions and inequalities of power, Coleman (1988) and Putnam (2001) popularise a reading of social capital that focuses on the ubiquity of social networks across classes. Both focus on the virtues of network membership and the assets individuals can access through their associations with others.

Social capital is assumed to affect KS by providing access to people with relevant knowledge or needs and questions, providing a common interest and an atmosphere of mutual trust. It also provides an appreciation of the value of others' knowledge, the sharing of common ability that helps in understanding other people's knowledge as well as correct interpretation and assessment of all knowledge (van den Hooff and Huysman, 2009). SCT explains that KS occurs because it provides social benefits for both the sharer and the organisation or community. van den Hooff and Huysman identify network ties, trust, social identification, shared language and goals as the social capital factors that affect KS in their study. Social capital, as used in their work, was grouped into three

dimensions – structural (connection between actors), relational (trust, norms and sanctions, obligations and expectations, identity and social identification) and cognitive (shared language, codes and narratives). Their results show that all three dimensions of social capital positively influenced the degree to which knowledge was shared in the organisations. This study adopted the variables, social identification and shared language and goals from the SCT.

2.2.1 Social identification. Identification refers to one's conception of self in terms of the defining features of self-inclusive social category (Bagozzi and Dholakia, 2002).) Social identification is the process whereby individuals see themselves as one with another person or group of people (Nahapiet and Ghoshal, 1998). Darvish and Nikbakhsh (2010) explain that valuable knowledge is embedded in individuals and people may not contribute their knowledge unless with another person recognised as their group-mate and the contribution is conducive to their welfare. The perception of social unity and togetherness of the community elevate people's activeness to share knowledge and increase the depth and breadth of shared knowledge (Chiu *et al.*, 2006). van den Hooff and Huysman (2009) found that social identification positively influenced the degree to which knowledge was shared in the organisations they studied. In this study, identification refers to the artisans' sense of belonging and positive feeling towards their community, which is similar to emotional identification. The community in this case is an informal entity, which exists in the minds of the artisans, and is glued together by the connections the members have with each other, and by their specific shared problems or areas of interest (Ardichvili *et al.*, 2003). Therefore, it is hypothesised that:

H4. There is a significant relationship between social interaction and KSB of ICT artisans.

2.2.2 Shared language and goals. Shared language and goals is the degree in which participants believe others share their language, goals and values (Witherspoon *et al.*, 2013). A shared language and vision is viewed as a bonding mechanism that helps different parts of a community or an organisation to integrate or combine resources (Tsai and Ghoshal, 1998). Organisation or community members who share a vision will be more likely to become partners sharing or exchanging their resources. The common goals, interests and visions that members of a community share will help them see the meaning of their KS. Lesser and Storck (2001) explain that shared language goes beyond the language itself; it also addresses the acronyms, subtleties and underlying assumptions that are the staples of day-to-day interaction. Shared language influences the condition for the combination and exchange of intellectual capitals in several ways (Nahapiet and Ghoshal, 1998), and provides a common conceptual apparatus for evaluating the likely benefits of exchange and combination. van den Hooff and Huysman (2009) found that shared language and goals positively influenced the degree to which knowledge was shared among employees in the six organisations they studied. Thus, another hypothesis is postulated:

H5. There is significant relationship between shared language and goals and KSB of ICT artisans.

2.2.3 Demographic factors. Demographic factors can be conceptualised as socioeconomic characteristics of a population expressed statistically, such as age, sex,

educational level, income level, marital status, occupation and religion. Many studies have looked into the influence of demographic variables on KS. For example, Riege (2005) identifies three-dozen factors that hinder people from sharing knowledge, among which are gender, age, educational and experience levels. Lin (2006) found that women are more willing to share knowledge because they are more sensitive to instrumental ties and because of the need to overcome traditional occupational hurdles. Islam *et al.* (2013) looked at KSB of faculty members of some universities in Bangladesh with different education qualifications. This study also examines the influence of age, gender, educational status and years of experience of the ICT artisans on their KSB. Therefore, it is hypothesised that:

H6a. There is significant relationship between age of ICT artisans and KSB.

H6b. There is significant relationship between gender of ICT artisans and KSB.

H6c. There is significant relationship between educational level of ICT artisans and KSB.

H6d. There is significant relationship between years of job experience of ICT artisans and KSB.

2.2.4 Knowledge sharing behaviour. KSB is often used interchangeably with KS in the literature and there has not been any fine line of demarcation between the two concepts. KS is the process in which individuals mutually exchange implicit and explicit knowledge (van den Hooff and de Ridder, 2004). KSB is the degree to which one actually shares one's knowledge with other persons, groups or organisation as well as sharing task-relevant ideas, information and suggestion with each other (Liang *et al.*, 2008). Researchers have used various variables to measure KSB, such as frequency, quantity, time spent on KS, among others (Chiu *et al.*, 2006). In this study, KSB is measured by asking respondents to rate their KSB on a scale of 1-5 on these five items:

(1) "I actively share my knowledge with other ICT artisans";

(2) "I discuss professional problems encountered in the course of my work with others rather than struggle with it alone";

(3) "I usually involve myself in professional discussions that will benefit my colleagues";

(4) "I voluntarily share information and knowledge with other artisans"; and

(5) "I share information and knowledge that will benefit/help my colleagues".

The conceptual model is shown in Figure 1.

3. Methodology

This study was carried out in Ibadan, southwest Nigeria. The study area was chosen by the researchers for convenience and because it is one of the major commercial cities in Nigeria. The population of study is all ICT artisans in Ibadan, Nigeria. A sample survey was adopted for the research design, while convenience and snowball sampling techniques were adopted in sample selection because of a lack of sample frame of the respondents. The data collection instrument is questionnaire. The researchers first located the areas where the artisans were majorly concentrated, such as University of Ibadan campus, the Polytechnic of Ibadan campus, Lead City University campus, Iwo

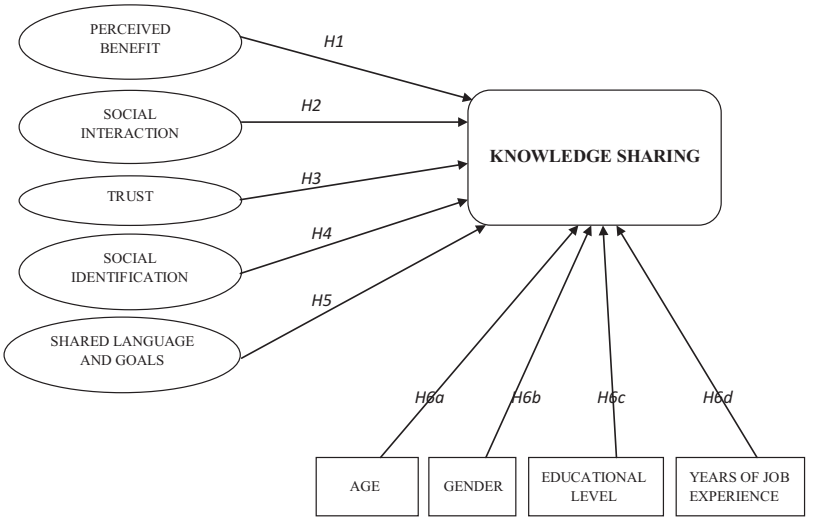

Figure 1.
Research model

Road, Mokola, Dugbe, Agbowo, Ojoo, Sabo, Challenge, Molete, Felele, Monatan and Agodi Gate. The researchers then visited the artisans to explain what the study is about and to seek their consent to participate in the study. Some artisans accepted to take part in the study, while some declined. A total of 285 copies of questionnaire were conveniently distributed to the respondents at their offices and shops between January and April 2015 with the assistance of two trained research assistants. Each respondent was requested to fill the questionnaire immediately and return it. Some filled the questionnaire immediately, while some gave appointments for a later date because they were busy at the time the researchers visited. The researchers made several visits to some artisans because of their busy schedule. Some artisans also could not understand some terms in the questionnaire because they were not versed in English language. The researchers had to explain to them. At the end, 214 copies of the questionnaire were considered fit for data analysis, giving a 75.09 per cent response rate.

The questionnaire was carefully designed and questions from previous studies on SET and SCT were adopted and modified. The measures for perceived benefit and social interaction were adopted from Liang *et al.* (2008), social identification and shared language and goals adopted from van den Hooff and Huysman (2009), while measures for trust were adopted from the two studies. The questionnaire was divided into two sections. The first section captured demographic information from the respondents while the second section collected data on the variables in the research. The items for all the variables consisted of five items, except perceived benefit, which consisted of four. A five-point Likert scale was used to measure the responses from 1 = strongly agree to 5 = strongly disagree.

The validity of the questionnaire was ensured by giving the instruments to scholars who are experts in the area of study and corrections and restructuring of some questions were made in accordance with their suggestions. Construct validity was established through factor analysis technique (principal component analysis). The internal consistency and reliability was established as all modified items went through

reliability test through the use of Cronbach's alpha to pick constructs with higher values of alpha, which is more desirable to measure the variables. All the items used in this research have a scale loading above 0.70, which is an accepted alpha level. This is presented in Table I.

The study was conducted by following strict ethical principles that govern the proper conduct of social research. The respondents' right for confidentially and privacy was taken into consideration in the process of designing and administering the questionnaire. Efforts were made to ensure that the respondents were not exposed to conditions that could bring harm to them, and they were given the free will to choose whether to participate in the study or not. Data collected from the questionnaire were coded and analysed using the Statistical Package for Social Sciences (SPSS) 20 software.

4. Data analysis

This section is based on descriptive statistics generated from the questionnaire data. First, it presents the respondents' demographic characteristics in Table II.

Of the participants, 81.3 per cent were males and 18.7 per cent were females. The respondents were mainly within the age group 15-44 years and majority of them had tertiary education (55.1 per cent).

Table III presents the measure of central tendency for years of experience on job.

Factors	Alpha levels	No. of items
Perceived benefit	0.810	4
Social interaction	0.718	5
Trust	0.878	5
Social identification	0.825	5
Shared language and goals	0.840	5
KS	0.766	5

Table I. Alpha levels for adopted and modified scales

Category	Frequency	(%)
Gender		
Male	174	81.3
Female	40	18.7
Total	214	100.0
Age (years)		
15-24	66	30.8
25-34	82	38.3
35-44	60	28.1
45 and above	6	2.8
Total	214	100.0
Educational level		
Primary	9	4.2
Secondary	87	40.7
Tertiary	118	55.1
Total	214	100.0

Table II. Demographic characteristics of respondents

The average year spent on the job by the respondents is 5.3 years and the highest occurring number of years in this study is 2 years, as indicated by the modal class in the analysis.

4.1 Test of hypotheses

This section presents the result of the regression analysis carried out between the independent variables and the dependent variable. Constructs were replaced with the components extracted from the principal component analysis, nominal and ordinal variables were re-coded to convert them into a form that will be suitable for regression analysis. All hypotheses stated were tested in null form, posing the assumption that a significant relationship does not exist between the independent and dependent variables. The hypotheses in the alternative forms assume that significant relationships exist between the concerned variables. The level of significance was pre-set to 5 per cent; if p obtained < 0.05, the null hypothesis was rejected, while the null hypothesis was not rejected if p obtained >0.05. Logistic regression was used to test the hypotheses.

Table IV presents the results of the test of hypotheses.

Ho1: The results in Table IV reveal positive and significant slope ($p = 0.003 < 0.05$ for the perceived benefit. Therefore, the null hypothesis is rejected; hence, perceived benefit has significant relationship with KSB of ICT artisans. The result also indicates that an increase in perceived benefit among the ICT artisans will have an increase in their KSB (expected $\beta = 3.802$).

Ho2: The results in Table IV show no significant relationship between social interaction and KSB ($p = 0.309 > 0.05$). Therefore, the null hypothesis is not rejected.

Ho3: Table IV also shows no significant relationship between trust and KSB of the artisans ($p = 0.058 > 0.05$); therefore, the null *H3* is not rejected.

Ho4: The results in Table IV show positive and significant slope between social identification and KSB ($\beta = 1.519$; $p = 0.039 < 0.05$). In essence, social identification has significant relationship with KSB of the artisans; hence, null *H4* is rejected.

Ho5: The results in Table IV indicate positive and significant slope ($\beta = 1.46$; expected (β) $=4.312$, $p = 0.000 < 0.05$) between shared language/goals and KSB. The null hypothesis is therefore rejected; hence, shared language and goals have significant relationship with KSB of the artisans.

Ho6a, Ho6b, Ho6c and Ho6d: The results in Table IV show positive and significant slope ($p = 0.040 < 0.05$) between gender and KSB. This indicates that gender has a significant relationship with KSB. Therefore, null *H6b* is rejected. All other demographic factors (age, level of education and years of job experience) do not have significant relationships with KSB. Therefore, null *H6a*, *H6b* and *H6d* are not rejected.

5. Discussion of findings

Perceived benefit was found to have positive and significant relationship with KSB of the ICT artisans. This implies that for KS to be enhanced, a positive increase in individual's

Table III.
Measure of central tendency for years of experience

	Mean	Mode
Years of experience	5.3	2

S/N	Independent variables	β	Wald	Expected (β)	SIG.	Decision
1	Gender (reference category = female): Male	0.992	4.194	2.696	0.040	Null hypothesis rejected
	Age (reference category = 45 and above):					Null Hypothesis not rejected
	15-24	−19.476	0.000	0.000	0.999	
	25-34	−19.690	0.000	0.000	0.999	
	35-44	−19.218	0.000	0.000	0.999	
	Educational level (reference category = Tertiary)					Null hypothesis not rejected
	Primary education	−0.103	0.006	0.902	0.940	
	Secondary education	0.383	0.842	1.466	0.359	
	Years of experience	−0.034	0.188	0.966	0.665	Null hypothesis not rejected
2	Perceived benefit	1.336	8.654	3.802	0.003	Null hypothesis rejected
3	Social interaction	0.427	1.037	1.533	0.309	Null hypothesis not rejected
4	Trust	1.062	3.591	2.891	0.058	Null hypothesis not rejected
5	Social identification	1.519	4.273	0.219	0.039	Null hypothesis rejected
6	Shared language and goals	1.460	13.212	4.312	0.000	Null hypothesis rejected

Note: Dependent variable: KSB

Table IV. Summary of results from test of hypotheses

perception of gain from their behaviour is necessary. The artisans consider and weigh the benefits they would derive from sharing their knowledge especially in the case whereby their skills are mostly channelled towards monetary rewards and economic empowerment. This result is in support of Wasko and Faraj (2005); Cabrera and Cabrera (2005); Liang *et al.* (2008). Liang *et al.* (2008) found significant effect of perceived benefit on KSB, which confirms the role of social exchange as a key theory in interpreting individual behaviour in KS. Wasko and Faraj (2000) found that individuals in the electronic networks are intrinsically motivated to disseminate their knowledge to others because they obtain pleasure in doing that. However, Bordia *et al.* (2006) found positive influence of benefits on KS only for technology-aided sharing but not in a face-to-face context. Even though KS can be beneficial for the sharer in terms of enhanced reputation and expansion of influence, these benefits may not be persuasive enough when KS is seen as costly, which could be jeopardy to self-interest (e.g. job security), potential competitive advantage of knowledge by recipient, as obtained among the artisans. Therefore, they may rationalise that the cost of sharing their knowledge outweighs the potential benefits for doing so and so may be unwilling to share knowledge.

Findings from this study show that there is no significant relationship between social interaction and KSB. Social network ties are channels for information and resource flows, which are considered as bond between two people based on one or

more relations they maintain in a social network. These findings deviate from many empirical studies, which have reported that social interaction is significant in predicting KSB. Liang *et al.* (2008) found significant effect of social interaction on KSB. Chiu *et al.* (2006) found support for the influence of social interaction on individual's KS. Mu *et al.* (2008) also found that interaction ties facilitate KS. Tsai and Ghoshal (1998) found that social interaction ties had direct positive impacts on the extent of inter-unit resource exchange. Chen (2007) equally found that social interaction ties can enhance individuals' intentions to perform online KS, while Chen *et al.* (2009) found that social network ties are positively and significantly associated with KS intention. This implies that once an individual build up relationships with other community members, he feels comfortable to share his ideas, thoughts or story, and his intention of performing such behaviour will be stronger. It is a known phenomenon that people need to interact to share knowledge, but when the artisans perceive that interaction among one another is purely a social norm, it might not affect or predict KS among them. Hence, the social interaction among the artisans is considered not so strong to the extent of it influencing their KSB.

Results from this study reveal that trust does not have significant relationship with KSB of the artisans. This finding is surprising because many studies have found trust to be generally associated with KS (Alam *et al.*, 2009; Huang *et al.*, 2008; Liang *et al.*, 2008; van den Hooff and Huysman, 2009). Alam *et al.* (2009), for instance, found that trust was one of the four key factors influencing KSB. Okyere-Kwaye and Nor (2011) equally found trust as a significant influence on KS among individuals in some selected organisations in Malaysia. Nonaka (1994) opines that trust is important for creating an atmosphere for KS. Whenever there is trust within individuals in an organisation, there is a tendency of higher cooperation and commitment (Molm, 2003). Witherspoon *et al.* (2013) found that trust was positively associated with KS. Kalantzis and Cope (2003) submitted that high level of interpersonal trust correlates with high levels or willingness to share knowledge.

However, the results of this study conform to the some works. For example, Amayah (2013) found that trust was not a significant predictor of KS. Chiu *et al.* (2006) also found that trust did not have a significant impact on KS. The link between SET and trust is that individuals develop their trust for another only when they are guaranteed that their dealings with the person will not be detrimental to them. Even though trust is an important factor in KS, it may be subjective. This finding, with regards to trust and KS among the artisans, could be due to the fact that the profession is competitive because the artisans engage in the profession to make income. Hence, sharing their knowledge with their colleagues is like giving out the secrets they are using to make income, which their competitors could use to have an edge over them. This is supported by Amayah (2013), who state that if KS is seen as sensitive or important, trust is needed for one to share it.

This study also found that social identification has positive significant relationship with KSB, which implies that social identification among the ICT artisans has effect on the way they share knowledge among themselves and that they will share their knowledge more if there is an increase in their sense of unity and togetherness. The artisans' perceptions of their sense of belonging within their environment could really influence their KSB. This finding is consistent with Darvish and Nikbakhsh (2010), van den Hooff and Huysman (2009). van den Hooff

and Huysman (2009) found social identification to positively influence the degree to which knowledge was shared in the organisations they studied. Self-perception of being an important entity within the profession can help eliminate apprehension that may result from fear of sharing inaccurate information, skill and helpful experiences. When one is positive about his belonging to a group, it will reduce the fear of unfavourable criticism when he shares knowledge. Yu and Chu (2007) state that members of a community are more likely to perceive themselves as group colleagues, and thereby form participation intentions in relation to KS. If two actors have direct and frequent interaction with each other, they are more likely to think alike or behave similarly (Szulanski *et al.*, 2004). Inter-personal affiliation shared by community members has also been shown to increase the willingness to share knowledge and resources with other members, to provide support and to commit to group-based goals (Barrett *et al.*, 2004; Ma and Agarwal, 2007).

The results show that there is a positive and significant slope between shared language/goals and KSB. This implies that the artisans will share their knowledge more if there is an increase in understanding of shared language and goals that exists among them. The result from this study is consistent with those of Aslam *et al.* (2013), Bock and Kim (2002), Chow and Chan (2008), Darvish and Nikbakhsh (2010), van den Hooff and Huysman (2009), Isa *et al.* (2010), Nahapiet and Ghoshal (1998) and Witherspoon *et al.* (2013). For example, Chow and Chan (2008) found that a higher level of shared goals contributed to the willingness of organisational members to share knowledge. Aslam *et al.* (2013) also found shared language, goals and vision to have significant relationship with KS. Darvish and Nikbakhsh (2010) found that shared language and goals directly contributed to quality of KS and was the most critical factor in KS. Witherspoon *et al.* (2013) found that shared goals positively associated with KS.

Shared language and goals facilities access to other people in a group, and enhances understanding, vision and communication among individuals. Shared language is a means by which ICT artisans communicate technical terms and relate with others in similar professions. In an instance where the language is not understood, it will be difficult to share information, experiences and skills from one person to another. People also tend to relate better with individuals that they share the same goals and values rather than communicate with someone who has divergent opinions or goals. In terms of shared language, when the team members talk to one another either in formal or informal situations, the words that they used occasionally meant different things to different people. Cohen and Levinthal (1990) explain that, for individuals to efficiently communicate and share highly specialised technical knowledge, they need to possess some knowledge in common. Isa *et al.* (2010) argue that shared language may provide a common tool for better understanding other team members, and thus for evaluating the possible benefits of exchange and combination of tacit knowledge. It has been revealed that when individuals or team members are people from different departments, or subsidiaries, and/or have diverse backgrounds, it can limit their understanding of one another.

This study shows that gender has a positive and significant relationship with KS. However, age, educational level and years of experience do not have significant relationship with KSB. There are varying results about the influence of demographic factors on KS. Some studies found demographic characteristics influencing KS, while some did not. For example, Nagani and Katyayani (2013) found age, educational qualifications and working experience to have significant but weak relationship with

KS among academicians, while gender did not. Grubić-Nešić *et al.* (2015) found that gender had significant impact on KS among employees of some European organisations. Ismail and Yusof (2009) found that demographic factors (gender and age) did not have significant relationship with KSB of public officers in Malaysia. This is also validated by Baig *et al.* (2014), who found that age, gender, educational background and mother tongue did not predict online KSB. Mogotsi *et al.* (2011) equally found that age, gender and professional tenure did not relate to KSB.

6. Conclusion, implications and limitations

This study has been able to contribute to existing knowledge by providing empirical data on factors influencing KSB among ICT artisans in Ibadan from the perspective of a developing nation like Nigeria where ICT artisans have become an integral part of the society. Exploring this study with social exchange and SCT also provides an exposition into the social environment of the artisans and their KSB. The study confirms the role of social exchange and social capital theories in interpreting individual's behaviour in KS. Perceived benefit, social identification, shared language and goals were found to have significant relationships with KSB. The relationship that exists between these variables indicates the importance of these factors as prerequisites for the success of KS among the artisans. An increase in "we-feeling" (sense of belonging) among the artisans, positive perception about the advantages of KS, understanding of shared language, common goals and vision would enhance the KSB of the artisans.

This study has been able to provide useful insights on how to implement good KS practices among the artisans and how social factors could be maximised to share knowledge among them. The results of this study have many implications for knowledge managers, both in private and public organisations. First, knowledge managers need to improve perceptions of reciprocal benefits among knowledge workers, which many studies have found to be important in KS intentions. Second, this study suggests that efforts be increased to foster relationships and social interactions among the individuals, which are necessary for creating and maintaining a positive KS. KS advocates interested in developing and sustaining KS should focus on enhancing positive mood of knowledge workers regarding social interaction and exchange, which precedes KSB. Reinforcing social identification between co-workers through arranging social events and outdoor discussions occasionally could help in KS. Such events could play an important role in helping individuals overcome work stress through building informal relationship that could also build trust among individuals, which could eventually enhance KS. Although a link between trust and KS has not been established in this study, when the artisans are able to build friendships among themselves, they would be willing to share knowledge. Therefore, KS efforts have a greater chance of succeeding if decision-makers pay closer attention to the importance of trust between the parties involved. Emphasising this factor would enhance KS among the artisans.

Third, the importance of shared language and goals in KS has also been revealed by this study. Promoting shared language and goals enhances understanding, vision and communication among individuals. Shared language and goals would continue to influence KS because the profession involves the use of some terms and languages that are unique to the profession. Therefore, it may be impossible for someone that is yet to understand these languages to share and even receive knowledge from others. Shared language and goals would continue to provide a common tool for better understanding other team members and,

hence, for evaluating the possible benefits of exchange and combination of tacit knowledge among the artisans. Finally, this study could assist policymakers in promoting and implementing KS practices among professionals and quasi-professionals who contribute to the gross domestic product of the country. The knowledge from this study could also be extended to other artisans in other countries of the world.

The study recommends that an enabling environment for KS should be created. For example, seminars, workshops and official meetings could be organised regularly to provide the platform to share knowledge. Group activities should be encouraged and collaborative sharing should be emphasised among the artisans so as to foster their interaction and boost the confidence they have among one another. The informal sharing networks that already exist among the artisans should be expanded to enhance effective KS practices. For the artisans to achieve continuous growth in their businesses, KS practices need to become an integral part of their day-to-day conversations. Successful sharing of goals and strategies revolves around a KS culture. Therefore, a KS culture should be developed among them. This creation of a knowledge embracing sharing culture is by no means an effortless and trouble-free undertaking to enhance the individuals' overall market competitiveness, profitability and continuance in business.

The findings and conclusion from this study are subjected to a number of limitations, which also indicates opportunities for future studies. The population was limited to a small population. The study also adopted convenience and snowball techniques. Therefore, the results cannot be generalised to all ICT artisans in Nigeria. Future studies could replicate or extend the findings of this study with other different methodology, e.g. by focusing on a larger population and a different sampling technique. The constructs used in this study could also be used to investigate KSB among other types of artisan and professional fields so as to draw a holistic view about the constructs adopted in this research. These limitations notwithstanding, the findings of this research have contributed to literature.

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