Utilizing IT to enhance knowledge sharing for school educators in developing countries.

UTILIZING IT TO ENHANCE KNOWLEDGE SHARING FOR SCHOOL EDUCATORS IN DEVELOPING COUNTRIES

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ABSTRACT

Knowledge has been considered a critical factor for any organization's survival however its retention and utilization has remained a challenge to many organizations in developing countries education institutions inclusive. These challenges are mostly attributed to the fact that knowledgeable employees often leave organizations before they could share their valuable knowledge and expertise. In schools of developing countries in particular, educators struggle for subsistence and many leave to seek for greener pastures. Such exodus of educators has led to knowledge loss and has widened the knowledge gap between the schools for the rich and those for the poor. This has been worse especially in the most challenging subjects like Science and Mathematics. Closing this gap, schools need to depend on the knowledge of other experienced educators that are still in the Education system in order to enhance the capabilities of those that are inexperienced. For this reason, leveraging Information Technology (IT) to facilitate the sharing of knowledge, communicate ideas, exchange views and information between educators is paramount. There is a need for schools in developing countries' to have guidelines of how IT could be utilized for knowledge sharing. The major objective of this paper is therefore to report on the utilization of IT to enhance Knowledge Sharing (KS) among educators in developing countries taking a case of South Africa. The Social Exchange Theory (SET), Theory of Reasoned Action (TRA) and The Unified Theory of Acceptance and Use of Technology (UTAUT) were used to design a conceptual framework for the study. Data was collected from secondary schools' educators in Tshwane South district of South Africa and was analyzed quantitatively. The results indicated that, knower's attitude is a high significant contributing factor whereas dependence of the knower is the least and insignificant in the utilization of IT to enhance knowledge sharing. Practically, this study could be leveraged by schools and governments to entrench tacit knowledge and to address the brain drainage associated with the continuous exodus of the skilled and experienced educators. Further still, the designed framework could be used by Information Systems scholars to extend research of knowledge sharing and management.

Keywords: Knowledge Sharing; Information Technology, ICT for Education; Education in Developing Countries

1. INTRODUCTION

Every country seeks to have an education system that reinforces academic development, widens information access and extends knowledge that is needed for economic development. From this perspective, education is looked at as a tool for disseminating knowledge and creation of wealth needed for global competitiveness. Good education should lead to reinforcement of better services to the society through the elimination of illiteracy, unemployment, poverty, intolerance, violence, diseases, hunger, environmental degradation and pollution (Bhuasiri et al., 2013; Davidsen & Vanderlinde, 2014). Hence the reinforcement of better services to the society requires great diversification of education especially at post-primary levels so as to create a holistic view needed for an education systems relevant for economic development, satisfaction of individual and community needs as well as suitable for labour market demands. Achievement of reinforcement of better services to society is facilitated by highly skilled and experienced educators with good education, relevant curriculum development and continued educational research. These educators are responsible for disseminating information to the young generation so as to build capacity, create relevant expertise, enhance, promote and disseminate cultural values needed for sustainable development, credentialing administrative class and naturing industrial entrepreneurship (Zach & Agosto, 2009).

Developing productive capacities needed for better education provision, requires innovativeness and the use of aids that support knowledge sharing. The ubiquitous nature of IT and the advent of the internet have been hailed as core moderating factors to achieve educational goals, increase access to global knowledge and technologies, and to improve the public's ability to share knowledge (Al-Roubaie, 2013). This increasing use of IT has become a greater contribution to teaching and learning in educational institutions. IT and its applications have not only enhanced teaching and learning but have also improved collaboration between learners and instructors and within instructors themselves (Bhuasiri et al., 2013). IT has provided a flexible environment that allows educators to improve their expertise and skills by collaborating and interacting with others irrespective of age, gender, geographical location and educational background. Through the use of IT, educators have been able to increase their expertise, skills and teaching pedagogies (Shafieiyoun & Safaei, 2013).

By adopting and using applications like MyTutor, LMS (Black board), Moodle, PowerPoint and some collaborative tools, such as Microsoft calendar, Groove and Dropbox for teaching and learning educators enhance their communication with learners and within themselves. This helps them to reduce the teaching pressures by having course materials ready and distributed before the time of class discussion, build competencies for teaching and sharing knowledge, improve their effectiveness and performance and increase their collaboration with others within and outside their school environment (Al-Ammary, 2013). This implies that IT is an enabler for the development of flexible structures needed in the facilitation of knowledge generation, transformation and dissemination. Using IT will help an education institution to exploit specific knowledge and ensures responsibility and commitment among educators (López et al., 2009). Such substitution of horizontal for vertical communication is paramount for the exchange of information between educators and educators as well as learners and nurtures teamwork. Hence, schools need to leverage IT for better knowledge generation, integration and sharing among educators as well as its retention.

Schools in developing countries are still challenged with many impediments that hinder them from enjoying the benefits of utilizing IT to share knowledge unlike their counterparts in the developed countries (Bhuasiri et al., 2013). This persistent economic inequalities coupled with lack of access to information, inadequate education and training result in an entrenched lack of capacity by educators in many developing countries to absorb, adapt and use IT for knowledge sharing (Bhuasiri et al., 2013). Researchers such as Zach and Agosto (2009); Ab. Samad et al. (2014); and Davidsen & Vanderlinde (2014) add that, apart from the financial and technological constraints, institutions in developing countries also face other challenges like the lack of "how" and "who" to transfer knowledge, continuous loss of data and personnel that possess the required knowledge.

With limited computer literacy, educational institutions in developing countries are at a high risk of losing electronically stored data and other important information (López et al., 2009; Bhuasiri et al., 2013). In several instances, it is common to find an institution depending entirely on one personnel for storing and retrieving electronic data. Apart from the common cause of data and information loss such as human error, computer viruses, software and hardware failures, neglect in storage, transmission and processing and unexpected departure of staff knowledgeable in computers are common (Holzmann & Dubnov, 2011; Bello & Chan, 2014). On the other hand, poverty, meager and delayed salaries as well as poor standards of living cause continuous exodus of educators from developing to developed countries for greener pastures (Makgato & Mji, 2006; Skok & Tahir, 2010).

Several studies such as Zach and Agosto (2009); Skok and Tahir (2010); and Bhuasiri et al. (2013) have argued that, responding to the knowledge loss challenges necessitates educational institutions in developing countries to implement strategies and create efforts that are directed towards 'brain gain' through collaboration and strengthening the facilitation of the utilization of IT. They alluded that the use of IT should be generally encouraged and facilitated to help educational institutions reinforce academic development, widen access to information and collaboration, attain universal scope and extend knowledge to others including facilitation of education throughout life orientation. Therefore governments, institutions of learning and the private sector should ensure the adequate provision and utilization of IT in all sets of life. Thus utilizing IT and its applications offer opportunities to educators in developing countries to connect with others and the rest of the world to enhance their human capital and sharing of knowledge with each other.

Enhancing knowledge sharing among educators is essential for them to work together to achieve a common goal (Apostolou et al., 2009). Such collaboration enables educators to coordinate curricular activities which in turn improve the teaching and learning. By sharing their knowledge and collaborating with each other, educators learn best practices beyond their working environment expertise and skills. This argument is supported by Cheng et al. (2009) who also observed that since knowledge sharing involves the conversion and transfer of one's held knowledge into a form that could be understood, absorbed and used by others, the process could be of great use to the resource constrained developing countries. They assert that by sharing instructional resources like strategies, techniques, skills and expertise, educators are in a good position to better their intellect and becoming valuable assets in the process of teaching and learning. More so, working with each other not only dispels feelings of professional isolation but also assists in enhancing practice, skills and better the standards and quality of education of their learners.

It is essential to note that factors that motivate educators to use IT for education purposes are generally dominated by both personal and institutional issues (Mooketsi & Chigona, 2014). Hence, leveraging IT for knowledge sharing, needs clear set guidelines that embrace these factors. This study designed a framework for utilizing IT to enhance Knowledge Sharing (KS) among educators in developing countries. The study was underpinned by a composite model of the Theory of Reasoned Action (TRA), Social Exchange Theory (SET) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Data for the validation of the framework was collected from educators in secondary schools of Tshwane North district in South Africa and was analyzed quantitatively by using the Statistical Package for Social Scientists (SPSS v 22.0).

2. KNOWLEDGE SHARING AND RLEATED THEORETICAL FOUNDATIONS

Knowledge is defined as information that is combined with experience or education, context, interpretation and anything that needs to be learned and it is classified as either as tacit or explicit (Suresh, 2013). Knowledge could also be looked at as a justified true belief consisting of a dynamic human process of personal philosophies (Nonaka, 1994). Tacit knowledge is very difficult to transfer whilst explicit knowledge could be transferred through documentation and could be recorded and stored in an organization's repository that could be accessed by each member within an organization (Suresh, 2013).

According to (Nonaka, 1994), tacit knowledge is associated with the know-how whereas explicit knowledge is linked with know-what and is easy to articulate and codify. On the other hand Choo (2000) argue that the nature and structure of organizational knowledge is different from other forms of knowledge. He argued that organizational knowledge is neither monolithic nor homogenous, but originates from different structures of the organization. From this perspective he classified organizational knowledge into three aspects of tacit, explicit, and cultural. He however consented with Nonaka (1994) that since tacit knowledge is experiential and contextualized, it cannot be easily codified, written down or reduced to rules and recipes whereas explicit knowledge can be transformed into symbols and either communicated or diffused.

Tacit knowledge is deeply rooted in an individual's action, experience, emotions, values and ideals whereas explicit knowledge could be seen as the formally stored information that could be documented and made available within an organization (Lang, 2010). From the organizational perspective, Awang et al. (2015) described knowledge as an intangible asset that is unique, path dependent, causally ambiguous, hard to imitate or substitute and can only grow or multiply when shared. Knowledge is an organizational's critical resource that is essential for achieving a sustainable competitive advantage (Wang & Noe, 2010). Hence, organizations need to see to it that employees with specific knowledge, competencies and skills share them with others. Furthermore, organizations need to build a culture that support the transfer of expertise and knowledge from experts to the novices more especially the tacit knowledge.

2.1 Knowledge Sharing within Organizations

Knowledge sharing could be looked at as a process by which knowledge held by one individual is converted into a form that can be understood, absorbed, and applied by others in a manner that could add value to both the individual and organizational learning (Ipe 2003). This implies that the knowledge sharing process constitutes of collecting, organizing and transferring knowledge from one individual to another. Hence, knowledge sharing within an organization ensures that employees contribute to knowledge application, innovation that could lead to an organization's competitive advantage (Wang & Noe, 2010).

Hanushek (2013) alluded that among all others, developing countries' natural resources and human capital is considered as the most valuable assets they have in abundance. From this perspective, individuals could be considered as the driving force that stir development, innovation and economic growth in such countries. Hence, organizations need to ensure that such knowledge and expertise is not lost even when the individuals possessing it leaves. It is therefore important to leverage tools like IT to enhance the process of knowledge sharing so as to retain the expertise and abilities relevant for development. However, it is important to note that unlike structural capital, human capital is always owned by the individuals who are mobile and can move from one organization, country or continent at any time to another with such knowledge (Skok & Tahir, 2010). Moreover, as López et al. (2009) also observed the transfer of tacit knowledge requires more interaction between the knower and the knowledge recipient. Hence, organizations need to develop mechanisms that encourage dialogue, interaction and ease of communication for such knowledge to be shared. On the other hand, for the explicit knowledge organizations need to develop a culture that allows individuals of diverse specialties, expertise, skills and from different geographic locations to access the same information and to augment one another in all aspects of work.

If such knowledge is to benefit organizations or countries where these individuals reside, it should be recorded in tangible form and shared among others (Zach & Agosto, 2009). This implies that, the critical role for knowledge creation and innovation is its dissemination and retention. Knowledge codification and storage is paramount for its effective management and reuse (López et al., 2009). Hence organizations need to devise means of capturing, codifying and storing knowledge for future reuse and sharing. Since this could be a strenuous exercise due to the different structures in which knowledge within an organization exist, IT and its applications could be leveraged to smoothen the process and to facilitate easy sharing. From this perspective it is important to identify and address all factors that could influence the use of IT for knowledge sharing (Al-Roubaie, 2013).

Organizations in a changing environment should not only aim at processing information efficiently, but also create it and transform it into knowledge that could be managed effectively (Nonaka, 1994). This implies that organizations whether profit or service oriented need to put in place a culture that acknowledges the importance of knowledge management and sharing in order to achieve a competitive advantage. Therefore the success of knowledge sharing is vital for improving and retaining intellectual capital (Hanushek, 2013). For brain-drained institutions of learning in developing countries, sharing of knowledge is paramount. However, it is important to note that knowledge sharing success greatly depends on the knower's attitude and his/her capability to share knowledge. More so, knowledge sharing as voluntary action presupposes personal ontology of knowledge which implies that the knower as the owner of knowledge has the right to disseminate it or not. In some cases, the reasons for dissemination could be to fulfill certain psychological desire or material needs, rather than purely value centric. In other instances incapacitation or lack of facilitation could lead to the knower not to disseminate the knowledge. Hence institutions of learning need to ensure that educators'capability of sharing knowledge are well facilitated. Therefore it is essential to leverage IT to enhance educators' knowledge sharing capability if success is to be achieved.

Knowledge is widely considered an important factor of production and wealth creation in any society and it should therefore embrace awareness, familiarity including an individual's range of information, understanding and a sum of what is known (Lang, 2010). From this perspective, knowledge could also be looked at as a fluid mix of framed experience, values, contextual information, expert insight and grounded intuition that provides an environment and framework for evaluating and incorporating new experiences. In the institutions' of learning knowledge is said to originate and to be applied in the minds of the educators, therefore it should be captured and stored in the institution's repositories, routines, processes, practices and norms. This implies that institutions of learning have a task of ensuring effective management of knowledge including its sharing to enable its retention as well as providing quality delivery of teaching and learning.

2.2.1 Knowledge Sharing and Value Creation within an Organization

Knowledge is essential for organizational strategy and a key determinant of its sustainable competitiveness. It is therefore seen as the primary source of value and it plays a core role in the organizational effectiveness (Malik & Malik, 2008). Hence, to maintain a competitive edge, organizations need to build their intellectual capital base by effectively managing knowledge creation, storage and sharing as well as supporting their employees to participate in these processes (Ipe 2003; Wang & Noe, 2010). From this perspective it could be noted that organization's agility and competitiveness are dependent on its ability to leverage knowledge, appreciate its role in determining the corporate value as well as effectively managing and measuring it (Skok & Tahir, 2010; Hanushek, 2013).

Hence, it is critical to understand and articulate the ways that knowledge-sharing links to value creation within any organization (Apostolou et al., 2009). This therefore necessitates organizations to devise means of ensuring that knowledge-sharing is measured and the metrics of its measurements identified. Besides the traditional outcome metrics, measures like; quality of available knowledge; rate of knowledge reuse; contribution to knowledge data bases and external recognition of the organization's knowledge leadership should also be taken into account.

Ensuring that knowledge is continuously shared is paramount for the success of any organization. This calls for a need to instill a culture of knowledge sharing within organizations. In case of institutions of learning, such culture should be passed on to the learners. Since Knowledge Sharing is determined by various factors, its success could only be reached if these factors are all embraced (Ab.Samad et al., 2014). From this perspective, it could be noted that before IT is utilized to share knowledge, several factors originating from; individual, organizational, social, managerial, and technological related issues need to be identified. Individual factors are more of their perceptions and attitudes to use IT to share knowledge and are influenced by the organization's support and motivation (López et al., 2009). This agrees with what Lin (2007) noted that organizations can successfully promote a knowledge sharing culture by not only directly incorporating knowledge in their business strategy, but also by changing employees' attitudes and behaviors towards knowledge sharing.

The role of institutional and individual factors in the use of IT is also highlighted in Mooketsi and Chigona (2014) which signifies that before IT is used for knowledge sharing, institutions should first support their employees to gain IT efficacy. Other factors influencing the use of IT for knowledge sharing include institutional culture, climate, structure and size, management support, team characteristics, processes, rewards and incentives (Chu et al., 2011; Shafieiyoun & Safaei, 2013). Individual characteristics such as, age, diversity, cultural characteristics, attitudes, beliefs, social networks and trust could play a significant role (Lang, 2010). Additionally, technological factors and reasons of sharing knowledge are other important elements that need an organization's attention. Hence, depending on the environment of operation, issues like impression management and attribution, power perspective, social costs, and benefits of knowledge sharing could become significant (Davidsen & Vanderlinde, 2014).

Traditionally, individuals share material possessions and properties either physically or legally or both. However, knowledge being an intellectual property is exclusively in the possession of the knower that may not be physically or legally divided and shared at will. Hence, the knower reserves the ability and authority to share that knowledge depending on his/her attitude, capability and social interaction. Knowledge within organizations is dynamic in nature and could be dependent on social relationships between individuals for its creation, sharing, and use (Chu et al., 2011). For an organization to capitalize and effectively use the knowledge possessed by its employees, it needs to understand how such knowledge was and is created, used and shared.

2.2 The Need for South African Educators to Share Knowledge

Several studies such as Fisher and Scott (2011) and Naidoo et al. (2014) indicate that the post-apartheid era in South Africa saw among others drastic scaling of investments in education that enabled many people to have improved access to it. For instance, in 1980 only 30 000 black African pupils reached matric level now known as the National School Certificate (NSC) yet by 2013 over 400 000 black candidates sat NSC (Holborn, 2013). This improved access to education has seen the number of children enrolling in pre-primary schools almost trebling in the last decade alone. However Fisher and Scott (2011) and Holborn (2013) agree that the efforts to redress the education system have seen little improvement on the quality being provided. They have attributed this lack of quality to a number of reasons. First they observed that, the critical challenge is the fact that the fast- expanding school population is dependent of the educators who were often themselves the product of apartheid-era Bantu (black) education with little training added to their previous knowledge and skills. Other challenges have been the poor implementation of policies to equalize expenditure and the distribution of educators especially in those schools previously for blacks, infective training of teachers and the imbalances in the sharing of educational resources.

It is noted that schools which were predominately serving the economically empowered whites during the apartheid era, remained functional while those that traditionally served the blacks failed to progress due to lack of qualified educators. Even the qualified black educators who once served these schools have since moved on to others with better conditions of service (Spaull, 2012). This argument echoed what Makgato and Mji (2006) had also observed that schools in developing countries have a continuous exodus of educators both within and outside their home countries leading to brain drain. They noted that in South Africa for example, such exodus has caused a skill scarcity especially in the Mathematics and Science subjects. In such scenarios the remaining educators in the developing countries' school not only face challenges of being overloaded, but also the lack of tools to access distant educators to share knowledge with. It is therefore important to note that highly qualified personnel are key assets for development hence the knowledge they possess should be shared among the novice and inexperienced personnel for continuity and sustainability.

Naidoo et al. (2014) observed that many South African educators are under-qualified or unqualified. They emphasized that current teacher training institutions and procedures fall below the required standards and hence need to learn from others with vast experience and skills. South African failure to address the knowledge-sharing gap among the experienced and the novice educators have led to the dependence largely on foreign expertise for teaching mathematics and science subjects (Holborn, 2013). This weakness has led to the South Africa's overall education system to be ranked 140 out of 144 countries included in the Forum's competitiveness index of 2012–2013 yet it had spent 6.4% of its gross domestic product (GDP) on education(Holborn, 2013). For South Africa as a country with a sound economy compared to other developing countries, its education system and conditions is seen as alarming.

Besides skills shortage and data loss in South Africa there are other out-of-school factors related to learners that require extra expertise and experience by educators to handle (Makgato & Mji, 2006; Holborn, 2013; Naidoo et al., 2014). Such factors like poverty, learners and parents attitude towards education, family commitments, single parenthood and pregnancy. This indicates that educators in South Africa have various challenges impeding their provision of quality and effective teaching. Since most of these challenges are caused by economic constraints that could not urgently be solved, governments and education planners have to optimize the few human resources available. Hence the use of IT to create, codify, store and disseminate knowledge becomes the most viable alternative to encounter these challenges. More so, a knowledge sharing culture need to be instilled in all aspects and domains of education planning and execution. This requires knowledge possessed by the few experienced educators to be shared across to the new entrants and inexperienced colleagues (Malik & Malik, 2008).

Research on technology penetration in developing countries indicates that there is an increasing abundance of IT equipment especially computers and the internet in schools (Oyo & Kalema, 2014). The challenge is the leverage of these tools to augment education related activities like knowledge sharing capabilities. South Africa for example is considered a leading power and more equipped in schools than other developing nations (Holborn, 2013). This availability of IT tools, applications and equipment should be taken as step forward in using IT for knowledge sharing. Bello and Chan (2014) also consent that the use of IT in knowledge creation and in its sharing is of significant importance. It is therefore important to identify those factors that could make this use of IT for knowledge sharing a success.

2.3 Conceptual Framework

Knowledge is dynamic and is highly dependent on the knower (Chu et al., 2011). This same argument have led to several studies investigating the behavioral aspects that influence knowledge sharing. These studies have designed and developed various theoretical frameworks to inform knowledge sharing. However, few studies have been conducted to guide the utilization of IT to enhance knowledge sharing especially for educators in the economically constrained developing countries. The designing of the conceptual framework for this study depended on the many factors that had been identified in previous studies to be influencing knowledge sharing (Lang, 2010; Chu et al., 2011; Shafieiyoun & Safaei, 2013; Davidsen & Vanderlinde, 2014).

In addition, technology utilization has also been proven to be influenced by individuals' perceptions and technology enabling factors (Fishbein & Ajzen, 1975; Venkatesh et al. 2003; Kalema et al., 2014; Mooketsi & Chigona, 2014). Putting these factors into consideration, constructs from three theoretical frameworks of the: Theory of Reasoned action (TRA) (Fishbein & Ajzen,1975); Social Exchange Theory (SET) (Homans, 1961); and Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al. 2003) were used in the designing of this study's conceptual framework. The theory of Reasoned Action (TRA) indicates that an individual's Behaviour Intention is a major antecedent for knowledge sharing. This implies that, when individuals develop positive attitudes towards sharing knowledge there are more likely to share it. Holzmann and Dubnov (2011) added that the knower's intention to share knowledge is a core mediating factor for the actual sharing of knowledge.

Based on these theoretical frameworks, constructs that were deemed relevant to the educators sharing of knowledge were identified. From the TRA three constructs of: Behaviour Intention, attitude and subjective norms were selected. From SET, eight constructs of; reward, status, reputation, flexibility, trust, exchange relation and dependency were used. Venkatesh et al. (2003) alluded that users' intention to use technology could be influenced by their perception of the technology as effortless to use and the expected improvement of their performance upon using it. Furthermore, educators could also be influenced by their social ties and the support they receive from their institutions while using the technology. Therefore from UTAUT, four constructs of effort expectancy, performance expectancy and facilitating conditions were used but social influence was modified as social network ties. Before transcription in SPSS, the constructs were coded as follows: Pro-sharing Norms (PRN), Knower's Attitude (KA), Reward (RD), Status (ST), Reputation (REP), Flexibility (FLE), Trust (TST), Exchange relations (EXR), Dependence (DEN), Effort expectancy (EE), Performance expectancy (PE), Social network ties (SNT) and Facilitating conditions as (FC). As Holzmann and Dubnov (2011) noted Knowledge-sharing intentions was introduced as a mediating factors and was coded as (KSI). Consequently, the attributes of these constructs were also coded in the same manner. The designed framework is as demonstrated in Figure 1 below.

2.4 Discussion of the Conceptual Framework's Constructs

In relation to this study, the suggested constructs of the conceptual framework demonstrated in Figure 1 are discussed as follows

2.4.1 Construct Based on the Theory of Reasoned Action

a) Pro-sharing norm: a norm implies a degree of consensus in the social system that individuals are involved. Pro-sharing norm is the standard that is intended to facilitate, motivate and to enhance a climate of sharing knowledge within an organization (Chow & Chan, 2008).

b) Knower's attitude: is a predisposition to respond to a concept in a consistent manner (Ajzen, 1991). In this study it relates to the degree to which educators possess positive feelings towards sharing knowledge (Ajzen & Fishbein, 2005).
c) Behavior intention: is the educators' readiness and their relative strength of intention to share knowledge (Ajzen, 1991; Ajzen & Fishbein, 2005).

2.4.2 Construct Based on the Social Exchange Theory

a) Reward: is an extrinsic benefit educators expects in the exchange of sharing knowledge this could either be financial or some sort of recognition and praise from superiors (Paroutis & Al Saleh, 2009).
b) Status: this is the position of educators as compared to others, especially in terms of social or professional standing (He & Wei, 2009).
c) Reputation: this is the educators' perception of their status or image as having been promoted or improved by sharing knowledge (Hung et al., 2011).
d) Flexibility: is the educators' ability to show a conceptual shift in thinking relative to a given task or to adapt and to continuously respond to unanticipated changes, and to adjust to the unexpected consequences of predictable changes (Hung et al., 2011).
e) Trust: is a contextual factor that comprises a set of specific beliefs primarily pertaining to the integrity, benevolence and ability of another party (He & Wei, 2009).
f) Exchange: is the degree to which educators feel morally obligated to share knowledge in order to contribute positively to the institution's performance (Hsu & Lin, 2008).
g) Dependency: is the tendency of relying on other educators with expert knowledge (Hung et al., 2011).

2.4.3 Construct Based on the Unified Theory of Acceptance and use of Technology

a) Effort expectancy: is the degree to which educators perceive IT as easy to use to share knowledge (Venkatesh et al., 2003).
b) Performance expectancy: is the belief by educators that using IT to share knowledge facilitates the knowledge-sharing process (Venkatesh et al., 2003).
c) Social network ties: is the degree to which educators believe that other important individuals want them to use IT to share knowledge (Venkatesh et al., 2003).
d) Facilitating conditions: is the extent to which institutions support or the degree to which educators perceive top management, policies and technical capabilities as supportive in the use of IT to share knowledge (Venkatesh et al., 2003).

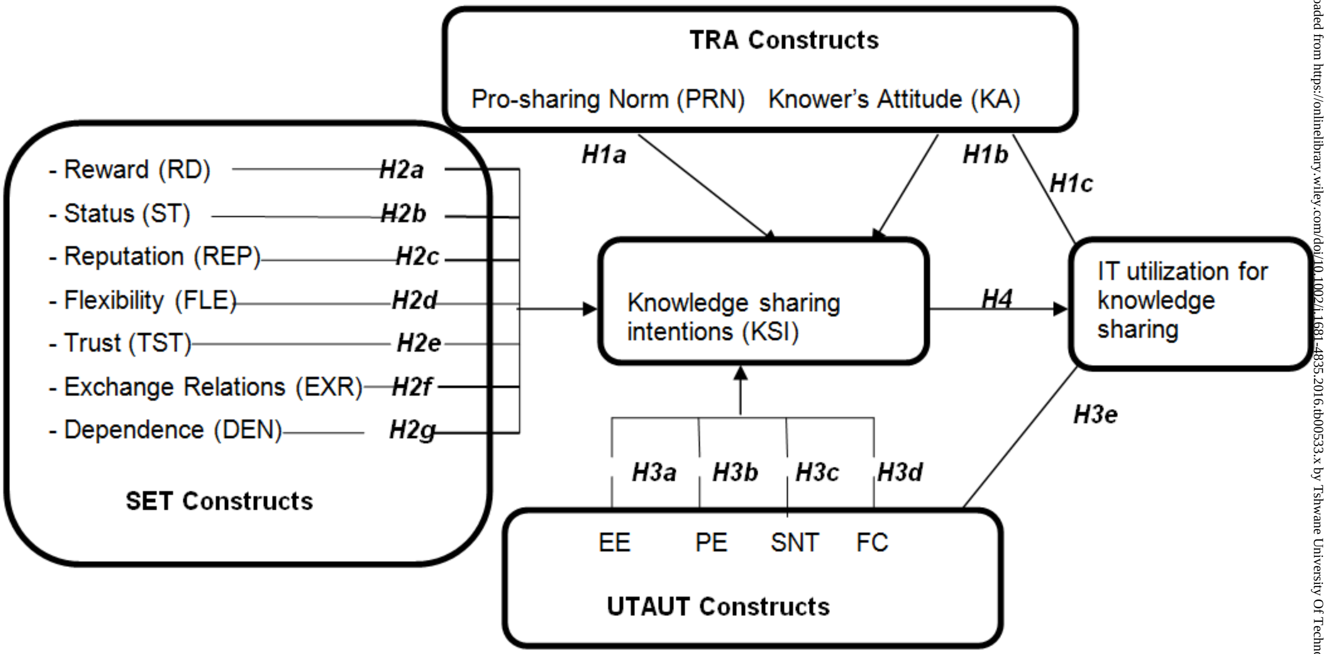

Figure 1: The conceptual Framework

2.5 Hypotheses Development

The operationalization of the conceptual framework's constructs led to the hypothesizing of the following relationships:-

H1a: *Pro-sharing norms (PRN) when mediated by knowledge-sharing intentions will influence utilization of IT to share knowledge.*
H1b: *Knower's attitude (KA) when mediated by knowledge-sharing intentions will influence utilization of IT to share knowledge*
H1c: *Knower's attitude (KA) directly influences the IT utilization for knowledge sharing.*
H2a: *Reward (RD) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H2b: *Status (ST) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H2c: *Reputation (REP) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H2d: *Flexibility (FLE) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H2e: *Trust (TST) when mediated by knowledge-sharing intention will influence IT usage for sharing knowledge.*
H2f: *Exchange relations (EXR) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H2g: *Dependence (DEN) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H3a: *Effort expectancy (EE) when mediated by knowledge-sharing intention will influence IT utilization for sharing knowledge.*
H3b: *Performance expectancy (PE) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H3c: *Social network ties (SNT) when mediated by knowledge-sharing intention will influence IT utilization for sharing knowledge.*

H3d: *Facilitating conditions (FC) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing.*
H3e: *Facilitating conditions (FC) directly influence IT utilization for knowledge sharing.*
H4: *Knowledge-sharing intentions (KSI) directly influence IT utilization for knowledge sharing (KS).*

3. METHODOLOGY

Based on the conceptual framework's constructs, a measuring instrument with close-ended questions was designed. The instrument was designed by using 5 point-Likert scale where; 5 and 1 represented strongly agree and strongly disagree respectively, 3 represented neutral whereas 4 and 2 were respective intermediate values. Data was collected from educators of secondary schools in Tshwane North district in South Africa. Schools that qualified to participate in the study were those with IT facilities such; full functional computer lab, connection to the internet, and those using IT for communication within their environment. Based on this criteria of IT readiness and usage, 17 schools were identified as eligible to participate in the study. From this sample population, eight schools were purposively selected for data collection.

In each of the eight schools, a contact person was obtained to assist in the identification of participants as well as in the distribution and collection of the questionnaires. Simple random sampling was used to select educators that participated in the study. This was done based on the staff lists that were provided by the schools. A total of 103 questionnaires were distributed and out of these 96 were returned giving a response rate of 93.2%. A good response rate was obtained because the researchers had to first obtain permission from the region office that requested the Principals to assist in the data collection process. After data screening only 84 questionnaires were found usable as others were discarded due to missing data and inconsistent patterns.

Reliability analysis was tested by using the Cronbach's alpha (α) also known as alpha coefficient and the overall instrument reliability was found to be 0.789 a value greater than the recommend threshold of 0.70 (Robila, 2006; Pallant, 2010). On the other hand, all constructs exhibited good reliability tests with the exception of; knowledge-Sharing Intention (KSI), trust (TST) and flexibility (FLE) whose value of 0.691, 0662 and 0.662 respectively were below the recommended threshold. However, due to the fact that SPSS allows the identification and deletion of a construct item to improve its reliability, this technique was used in this case. Based on this technique, trust (TST) attribute (TST1= I will share my share knowledge if I feel there is a culture of trust among my colleagues) and flexibility (FLE) attribute of (FLE1 = I feel knowledge sharing with other members in my department is valuable to me) were deleted. The deletion improved the reliabilities of trust (TST) and flexibility (FLE) to 0.791 and 0.703 respectively.

3.1 Ethical Considerations

Before data collection, permission to conduct research was sought and granted by the Gauteng Provincial Department of Education. Before this written permission was obtained a number of ethical considerations were agreed on, document and presented to the educators both verbally and in writing. These included; explanation of data collection methods, the instruments that was to be used for data collection, the information required and material used, treatment of the data, protection of participants' confidentiality and privacy, methods of dissemination of results and findings, and the intellectual properties and copyright issues. The questionnaire was therefore followed by a cover letter that informed participants of their rights while participating in the study and voluntariness of participation.

4. RESULTS

After the reliability tests, frequencies of the participants' demographics, characteristics and situational variables were carried out. The descriptive analyses of these factors have been left out in this paper. Furthermore, correlation and regression analysis was conducted to determine the interdependencies between the factors and also to test the suggested hypotheses.

4.1 Correlation

Correlation analysis describes the strength and direction of the linear relationship between two variables as well as the statistical significance of their association (Pallant, 2010). It is applied in situations of quantifiable data were numbers are meaningful. The tested values of correlation are referred to as the correlation coefficient (or "r") and falls in the range of ±1.0. Values of r close to 0, implies weak or no relationship between the tested variables. Consequently positive values of r implies a direct relationship where the two variables are proportionally increasing whereas negative values implies inverse proportionality where one is increasing as the other is decreasing (Robila, 2006).

Results indicated that Knower's Attitude (KA) significantly correlated with Performance Expectance (PE), Facilitating Conditions (FC) and knowledge sharing intention (KSI) with Pearson correlations of 0.236, 0.245 and 0.228 respectively at a 0.05 level of significance. Reward (RD) was significant with both Facilitating Conditions (FC) and Knowledge Sharing Intentions (KSI) with a Pearson's correlation of 0.292 and 0.474 respectively at a 0.01 level. Trust (TST) was also found to be significantly correlating with Effort Expectance (EE) construct at 0.01, while it was significantly correlating with KSI and RD at a 0.05 level.

Results also showed that the correlation of reputation (REP) with Effort Expectance (EE), trust (TST), dependence (DEN) and social network ties (SNT) were insignificant. This was also the same for the correlations of reputation and flexibility (FLE) and that of flexibility with performance expectance (PE).

Table 1: Correlation of Constructs

Correlations

		PE	EE	SNT	FC	KSI	KSA	PRN	KRD	KST	TST	REP	FLE	EXR	DEN	IT usage for KS
PE	Pearson Correlation	1														
	Sig. (2-tailed)															
EE	Pearson Correlation	.034	1													
	Sig. (2-tailed)	.758														
SNT	Pearson Correlation	-.041	.072	1												
	Sig. (2-tailed)	.712	.514													
FC	Pearson Correlation	.004	.096	.008	1											
	Sig. (2-tailed)	.974	.383	.942												
KSI	Pearson Correlation	.166	.177	.086	.446**	1										
	Sig. (2-tailed)	.132	.108	.438	.000											
KSA	Pearson Correlation	.196	.162	-.148	.057	.494**	1									
	Sig. (2-tailed)	.075	.141	.178	.606	.000										
PRN	Pearson Correlation	-.236*	-.103	-.104	.245*	.228*	.024	1								
	Sig. (2-tailed)	.030	.350	.345	.025	.037	.826									
KRD	Pearson Correlation	.075	.064	-.080	-.043	-.100	-.194	-.132	1							
	Sig. (2-tailed)	.497	.564	.469	.698	.365	.077	.232								
KST	Pearson Correlation	.048	-.049	.047	.292**	.474**	.112	.004	.102	1						
	Sig. (2-tailed)	.665	.658	.673	.007	.000	.309	.972	.354							
TST	Pearson Correlation	-.148	.038	-.068	.154	.104	.004	.145	-.004	.178	1					
	Sig. (2-tailed)	.179	.733	.536	.163	.346	.971	.190	.972	.106						
REP	Pearson Correlation	.050	.179	.517**	.033	.234*	.150	-.090	-.242*	-.052	.028	1				
	Sig. (2-tailed)	.649	.103	.000	.765	.032	.174	.415	.026	.636	.803					
FLE	Pearson Correlation	.127	-.050	-.104	.215*	.413**	.484**	.128	-.364**	.050	.012	.269*	1			
	Sig. (2-tailed)	.249	.650	.347	.050	.000	.000	.247	.001	.652	.916	.013				
EXR	Pearson Correlation	.404**	.174	.069	-.100	.065	.046	-.178	-.010	-.147	-.221*	.350**	.178	1		
	Sig. (2-tailed)	.000	.114	.531	.366	.555	.676	.105	.929	.183	.043	.001	.106			
DEN	Pearson Correlation	.051	.142	-.020	.270*	.416**	.262*	-.001	-.030	.163	.000	.157	.337**	.206	1	
	Sig. (2-tailed)	.646	.198	.860	.013	.000	.016	.990	.790	.139	.999	.153	.002	.060		
IT usage for KS	Pearson Correlation	.264*	.098	-.149	.020	.188	.211	-.114	-.124	.039	-.028	-.035	.343**	.237*	.167	1
	Sig. (2-tailed)	.015	.374	.176	.856	.086	.054	.301	.261	.723	.798	.753	.001	.030	.129	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

4.2 Regression

Regression analysis is a technique used to model and analyse a number of constructs to determine the relationship between a dependent variable and one or more independent variables (Pallant, 2010). Results demonstrated in Table 2 indicated that the model had a good predicting power of utilizing IT to enhance knowledge sharing. The overall prediction of the model (R square) is 77.9%. This implies that the factors used by this study may be depended on to explain how IT could be utilized to enhance knowledge sharing by school educators.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.883[a]	.779	.656	.341	.779	6.292	41	73	.000

a. Predictors: (Constant), DEN, TST, RD, SNT, PE, EE, ST, PRN, KA, FC, EXR, FLE, REP, KSI
b. Dependent Variable: IT utilization for KS

The constructs regression analysis indicates how much each construct contributes to the overall prediction of the model. The independent construct's contribution to the overall prediction of the model (regression value to the dependent one) is significant if its critical ratio (t-value) is greater or equal to ±1.96 (Robila, 2006). From this perspective results illustrated in Table 3 revealed that, reward (RD) contributes higher (33.3%) to the overall prediction of the use of IT to enhance knowledge sharing. This was followed by trust (TST) with a contribution of 27.1%, intention to share knowledge (KSI) with 26.8% and effort expectancy (EE) with 25.8%. Other constructs like; exchange relations (EXR), knower's attitude (KA), social network ties (SNT), performance expectance (PE), were also found to have significant contributions of 22.4, 22.2, 20.3 and 16.2% respectively at p = 0.05. However, some other constructs' contribution like; trust (TST) with 18.9%, flexibility (FLE) with 18.9, facilitating conditions (FC) with 17.8%, reputation (REP) with 16.8%, were found to have a higher contribution which is not to significant whereas dependence (DEN) had the least insignificant contribution of 11.3%. Results for regression analysis are as illustrated in Table 3.

Table 3: Regression Analysis

Model	Unstand. Coeff.		Stand. Coeff.	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.589	.401		3.963	.002
PE	.077	.037	.162	2.087	.038
EE	.205	.062	.258	3.321	.001
SNT	-.137	.051	-.203	-2.681	.008
FC	-.120	.068	-.151	1.776	.077
KSI	.216	.078	.268	2.776	.007
KA	-.186	.098	-.222	-1.993	.050
PRN	-.126	.064	-.168	-1.983	.050
RD	-.230	.069	-.338	3.318	.001
ST	.124	.046	.271	2.725	.008
TST	.122	.064	.148	1.893	.062
REP	-.220	.131	-.247	-1.684	.097
FLE	.122	.064	.148	1.893	.062
EXR	-.125	.046	-.224	-2.689	.009
DEN	.087	.073	.113	1.193	.237
ITUtilization for KS	.515	.096	.457	5.376	.000

4.3 Testing the Hypotheses

This study hypothesized 15 relationships that were tested based on the t-values of the constructs. Results of the tested hypotheses are as demonstrated in Table 4, significance is at p = 0.05.

Table 4: Hypotheses Testing

Suggested Hypothesis	Sig. P value	Action
H1a: Pro-sharing norms (PRN) when mediated by knowledge-sharing intentions will influence utilization of IT to share knowledge	P = 0.050 ≤ 0.05	Accepted
H1b: Knower's attitude (KA) when mediated by knowledge-sharing intentions will influence utilization of IT to share knowledge	P = 0.050 ≤ 0.05	Accepted
H1c: Knower's attitude (KA) directly influences the IT utilization for knowledge sharing	P = 0.048 < 0.05	Accepted
H2a: Reward (RD) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.001 < 0.05	Accepted
H2b: Status (ST) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.008 < 0.05	Accepted
H2c: Reputation (REP) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.097 > 0.05	Rejected
H2d: Flexibility (FLE) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.062 > 0.05	Rejected
H2e: Trust (TST) when mediated by knowledge-sharing intention will influence IT usage for sharing knowledge	P = 0.062 > 0.05	Rejected
H2f: Exchange relations (EXR) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.009 < 0.05	Accepted
H2g: Dependence (DEN) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.237 > 0.05	Rejected
H3a: Effort expectancy (EE) when mediated by knowledge-sharing intention will influence IT utilization for sharing knowledge	P = 0.001 < 0.05	Accepted
H3b: Performance expectancy (PE) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.038 < 0.05	Accepted
H3c: Social network ties (SNT) when mediated by knowledge-sharing intention will influence IT utilization for sharing knowledge	P = 0.008 < 0.05	Accepted
H3d: Facilitating conditions (FC) when mediated by knowledge-sharing intentions will influence IT utilization for knowledge sharing	P = 0.077 > 0.05	Rejected
H3e: Facilitating conditions (FC) directly influence IT utilization for knowledge sharing	P = 0.856 > 0.05	Rejected
H4: Knowledge-sharing intentions (KSI) directly influence IT utilization for knowledge sharing (KS)	P = 0.007 < 0.05	Accepted

5. Discussion of Results

Generally this study established that managing knowledge and consequently sharing it, is a key strategy that could be adapted by schools to retain knowledge and to equip educators with relevant skills needed to improve their performance. This study also established knowledge sharing is paramount for knowledge regeneration, retention and is key to a competitive advantage. Both tacit and explicit knowledge need to be preserved and shared within an organization. This study established that reward, pro-sharing norm, knower's attitude, status, exchange relation, effort expectancy, performance expectancy and social networking ties play significant role in knowledge in knowledge sharing.

The results of the study indicated that reward highly contributes (33.8%) and is significant ($p = .001 < .05$) to the use of IT for knowledge sharing. Furthermore, the findings also indicated that both extrinsic and intrinsic rewards are related to knowledge-sharing practices. Extrinsic rewards refer to various benefits such as salary increments, commissions, bonuses and any other form of tangible remunerations given to employees by the organization. On the other hand intrinsic rewards are psychological and are obtained internally by employees such as pleasure or satisfaction derived from knowledge sharing.

The findings of this study are consistent with those of Paroutis and Al Saleh (2009) who also established that, apart from receiving positive feedback as a result of their knowledge sharing, educators also expect to receive praise, recognition, respect, prestige and to be considered competent by the superiors. This implies that educators expect positive feedback regarding their contribution to knowledge sharing. Higher levels of praise, recognition, respect, prestige and image as a response to knowledge sharing may strengthen this result. More so, since knowledge sharing may sometimes be considered as a learning process for the knower, an opportunity to share knowledge may be considered as a self-reward for educators to deepen their own understanding (Wang & Noe, 2010). This is also in agreement with what Lin (2007) referred to as mutual benefit or reciprocity where an individual shares knowledge with the expectation of getting back valuable information from peers so as to deepen his/her own understanding. Based on these findings, higher levels of praise, recognition, respect, prestige and reciprocity of the educators may increase knowledge sharing if the framework developed in this study is used.

The results also indicated that some educators will share knowledge for the purpose of keeping high status. This is shown by the high contribution of the status construct (27.1%) to the utilization of IT to share knowledge. As literature shows, access and use of IT capabilities in developing countries is still limited few people could be knowledgeable and have expertise to use IT applications. The privileged one to have such information will want to be considered of high status while sharing it. The findings of this study are in agreement with the prevailing motivation theories that suggest that both compensation and force may not be effectively enough to motivate human behavior like in sharing of knowledge whereas factors like recognition and challenge could be influential. A motivation theory such as Maslow's needs hierarchy (Maslow, 1954) suggests five classes of needs that motivate human conduct namely basic, safety, belongingness, esteem, and self-actualization. This could imply that human beings may be motivated to act a behavior with an intention to achieve any, combination or all of these needs. For instance, people who have competence to use IT tools and applications to share knowledge like the use of Status.net, Groupware, YouTube, WordPress, Drupal, SharePoint, Yammer, Intelligent agents, Expert systems and Automated knowledge maps, Elgg and many others may not share knowledge because of money or with an intent to improve their relations with others but for the need of self-actualization. Hence, the perception of gaining status by helping and answering frequently and intelligently may motivate educators to offer useful advice to others.

Knower's attitude and pro-sharing norms were found significant with relatively good contributing ratios (22.2%) and (16.8%) respectively to use IT in sharing knowledge. The results of this study are consistent with many knowledge sharing researches that have indicated a number of factors including organizational culture and individuals' personality like traits and attitudes to be influencing knowledge sharing (Lang, 2010; Holzmann & Dubnov, 2011). The implication of this may be that by willingly and voluntary sharing knowledge among educators a knowledge-sharing culture become inculcated within the institution of learning. More so, if the institution acknowledges and supports the effort to share knowledge by increasing extrinsic and intrinsic motivation, such will build a sense of capability and self-confidence among educators and increase their positive attitude towards knowledge sharing with others. However, if such a culture is not developed, it could hinder and negatively impact attitudes towards knowledge sharing and lessens their flexibility and dependencies in sharing and acquiring knowledge. This is also in line with what Choo (2000) noted that organizational cultural helps to impart that knowledge based on the assumptions, shared beliefs, norms and values needed to explain reality so as to assign meaning and significance to new information. Hence this explains why pro-sharing norms and educators' attitudes are significant factors to knowledge sharing.

The significance of pro-sharing norm and attitudes to utilize IT to share knowledge may also be looked at from the technology usage perspective within organizations. Wang and Noe (2010) observed that if an organization lacks a culture to support the use of IT, the effectiveness of IT to support capabilities like knowledge sharing will not be realized. This is also in agreement with what Lin (2007) noted that since knowledge sharing is related to the support an organization gives to its employees, an organization with a culture to support technological innovations will have its employees successfully use IT to share knowledge. Such support should be rooted in the organizational culture and policies that managers would constantly use to enlist extrinsic and intrinsic motivation among employees to enhance their attitude and perceptions of knowledge self-efficacy and improve their pro-sharing norm. This also supports what Hendriks (1999) noted that since IT is an enabler for knowledge sharing, an organization with a culture that supports the use of technological tools, applications and innovations will successfully motivate its employees to use it in sharing knowledge.

For technology utilization, the results indicated that effort expectance and social network ties were found to be significant, whereas performance expectancy and facilitating conditions were insignificant. Like previous researchers such as (Venkatesh et al., 2003; Mooketsi & Chigona, 2014) noted, technology utilization has a lot to do with the users' perception. This study's results indicated that for educators to utilize IT in the sharing of knowledge, effort expectancy is the key influencing factor. Educators expect to have IT competencies in order to apply them in other perspectives. Such efficacy will see educators effectively using e-mails, websites and all forms of technology to share knowledge. However, this efficacy could be achieved if the school top management could facilitate different aspects like; training educators, employing competent educators and providing relevant infrastructures. When such facilitation is not received, educators will not be able to appreciate IT as an enabler for knowledge sharing. This explains why facilitating conditions and performance expectance were both insignificant. More so this confirms to what Hendriks (1999) noted that IT facilitates in the identification of the process of knowledge sharing though it doesn't address the knowledge to be shared but meta-knowledge which is the knowledge about the knowledge to be shared. The implication of these findings is that promoting knowledge sharing among educators requires the creation of an environment that is people-oriented, rather than technological-oriented. Technology is therefore important in minimizing the barriers and to increase the propensity to share knowledge but knowledge sharing remains a people-process. This is also consistent with López et al. (2009) argument that the knower's IT competencies are influential for successful knowledge management. Hence, educators' IT perceptions, expectations and efficacy are key to knowledge sharing.

Results showed that dependency was the least contributing construct (11.3%) and insignificant ($p = .237 > 0.05$) to the utilization of IT for knowledge sharing. Considering the concept of knowledge both explicit that can be expressed and tacit that exist in an individual's minds, knowledge could be perceived as a context that can be understood and experienced (Nonaka & von Krogh, 2009; Lang, 2010). From this understanding dependency in knowledge sharing will largely depend on the complexity of knowledge. Taking a case of educators, they could be seen as having similar competences but varied expertise since they undergo similar training, use same curriculum and exposed to similar methods of teaching to deliver the subject content. Because of this homogeneity dependency by educators will only arise in situations where the novices want to know how the experienced ones use different skills to get better results. These findings are also in agreement with what Balozia et al. (2014) noted that since achieving and maintaining homogeneous standards is the norm in institutions of learning, experienced educators with different skills are encouraged by management to interact and act jointly to improve performance and competitiveness. Hence, such collaboration will instill a positive pro-sharing norm that ends up lessening the act of dependency.

The results of this study also supports Holzmann and Dubnov (2011) findings that using IT to enhance capabilities within an organization creates an environment necessary for virtual community that requires individual's desire to do so. Such desire is always influenced by the extrinsic and intrinsic motivation factors such as; altruism, collaboration, belonging, empathy, power, egotism, egoism, emotional support, knowledge, reputation, self-esteem, self-expression, reciprocity, and wisdom and is geared towards achieving the individual's goals, interests, beliefs, and values that increases the intention to share knowledge with less dependency.

6. CONCLUSION AND RECOMMENDATIONS

The paper investigated the utilization of IT to enhance knowledge sharing by school educators in developing countries. Results indicated that both extrinsic and intrinsic rewards plays a major role in the use of IT to share knowledge and that schools need to inculcate a culture of knowledge sharing among educators. More so, it was also established that the knowledge sharing intention is an essential antecedent for the actual sharing of knowledge. This study also revealed that before educators could use IT in the sharing of knowledge, they need to be well versed or to have a positive perception of technological application or tool that is intended to be used in the knowledge sharing process.

6.1 Limitations and Recommendations

This study perceived knowledge and its development at a cognitive level as also postulated by (Nonaka, 1994). From this perspective, knowledge loss or retention especially tacit was only looked at from the behaviors of educators within schools and their capability and willingness to share it. Hence, brain drain caused by educators' departure without sharing their knowledge was largely seen as a major impediment to knowledge creation and regeneration. However, due to the fact that knowledge could be generated from various sources its loss can't be limited to brain drain. Therefore future research should examine and address others forms of knowledge loss beyond brain drain.

While conducting this study, effort was made to minimize faults and errors arising from data collection and sampling. However, the authors admit that the study has some limitations that could not be ignored. First, the research setting for the current study consisted of a few selected secondary schools from only one district municipality. Participants of the study were from urban and semi-urban schools. This fact could limit the generalization of the results of this study as schools, especially those in rural communities may have far more challenges than the semi-urban ones selected. Further still, much as South Africa (SA) is considered a developing country, the facilitation and support government gives to schools may be far higher than in many other developing countries. The results of this study may be limited to some schools in developing countries whereas they may not be generalized to other schools or countries. This study recommends a comparative analysis or a replication of the study in other regions to enable better generalizability of the findings.

Again, the survey instrument relied on self-reported measures, in which the findings were dependent upon the educators' responses regarding their knowledge-sharing behaviour rather than on direct observation of such behavior. Despite the research participants having been requested to be as honest as possible self-reports of behaviour are often criticized as being tainted with response bias and inaccuracies. Hence, self-reports may lead to poor indicators of actual behaviour. As such future studies could use self-reports in combination with other methods like interviews and observations.

This study is valuable as it deepens the understanding of knowledge sharing among educators in schools. It has also highlighted the factors that schools need to pay attention to for successful implementation of knowledge sharing among educators. However, there are a number of aspects that could be taken into consideration and explored in further research. First, the study used a sample of 84 participants. A larger sample would have allowed more sophisticated statistical tests like the use of structural equation modeling to be carried out. Future research should consider validating the model with a bigger sample of data and with mixed methods to enrich the findings from different schools of thought. By so doing, some moderating factors that have remained unresolved could be taken care of. For instance, future studies could investigate whether subjects and educators' demographics like gender, age and education level could influence their attitude to utilize IT to share knowledge. Testing of these moderating effects would also help to examine the change in educators' behaviors with time.

6.2 Conclusion

Globalization and the desire to have a wider market share have increased external and internal pressures for organizations to improve their quality of services. Organizations including institutions of learning are leveraging IT to enhance knowledge, expertise and abilities relevant for future prospects. Schools are working towards devising means how best they could provide quality education, design effective curriculum and implement all strategies that support teaching and learning. The use of IT has been echoed as one critical areas that could be depended on to facilitate teaching and learning as well as enhancing educators' capabilities to innovate and share knowledge thus mitigating against brain drain in developing countries. Much as information needs for school educators could be seen as not all that great, the perils of information overload are high. Schools have to put in place, means of sharing knowledge in order to enhance educators' competencies.

It is important to note that knowledge management is a challenging task in many organizations. Such challenges make the sharing of knowledge and enhancing collaboration a complex phenomenon. Unlike other organizational assets, knowledge is quite different since the knower reserves the right to share it or not. Much as explicit knowledge could be codified, stored and accessed at the different organizational levels, tacit knowledge can't be articulated. Nevertheless, if the knower doesn't share it, it will remain dormant and unrecognized and will not enhance collaboration. This study sought to find how IT could be utilized by school educators to share knowledge. The findings of this study revealed that in education institutions, reward is a core antecedent for knowledge sharing. Education managers need to put various means and measures of reward to educators that are willing to share knowledge in any innovative way. Managers should also consider that if they were to enhance knowledge sharing and collaboration within their institutions, there should be need to stimulate the attitude of the knower towards sharing knowledge.

Further still, harnessing IT for education in developing countries requires visionary and skilled personnel and leadership. Government and institutions of learning, management of learning institutions need to be knowledgeable about how IT can be leveraged to share knowledge and enhance collaboration. The framework designed by this study will act as a cornerstone for education policy makers to realize systemic change through investments in IT.

Consequently, efforts must be directed towards a process of 'brain gain' through knowledge sharing and collaboration among educators in schools. Governments should also enhance the building and strengthening of institutions and facilitate full use of endogenous capacities. This will also help educators to create new learning environments so as to reduce the shortage of professionals especially in the scarce skills domains like sciences. For knowledge sharing to become part of educators, there must be some standard guidelines. The framework designed in this study is a step in that direction.

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