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# 36. User Perceptions on Information Communication Technology (ICT) Adoption for Knowledge Development in Namibian Banks

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## ***Abstract***

Technology integration into contemporary society and business operations is a reality in Namibia. The financial services sector is a vibrant sector that embraces global trends and boasts an advanced ICT infrastructure. The banking sector, though challenged by the lack of expert knowledge, is directly connected to South Africa where the banking sector sources the knowledge it needs to support local operations. There is a critical gap in the literature on the adoption of ICT for knowledge development in the Namibian financial sector. This qualitative, multi-case study of the perceptions of staff about ICT-based knowledge development shows that Namibian banks have advanced ICT infrastructure which they have managed to adopt for knowledge development purposes. The findings also prove the applicability of technology adoption models to ICT-based knowledge development. Key concerns included management support, consultation in the development of knowledge development initiatives, integration of knowledge development strategies into staff processes and increasing awareness activities. The recommendations are: (1) that banks drive knowledge development (2) that staff members are involved in the development, and (3) that knowledge development initiatives be blended with the work processes of staff.

## **Key Terms**

Knowledge, knowledge development, knowledge economy, knowledge workforce, perceptions, information communication technology (ICT), ICT adoption

## **1. Introduction and Context of Study**

Namibia is a geographically large country situated on the south-western coast of Southern Africa. The country is driven by a market economy and is rich in natural resources with a relatively strong public administration (Bilbao-Osorio, Dutta, & Lanvin, 2013; Singh, 2014; World Bank, 2014). The government of Namibia strongly believes in the value that ICT offers to citizens but grapples with a number of challenges in ICT development such as education, computer and information literacy (Singh 2014). The ICT infrastructure in the country is currently well developed and, according to the Manufacturing Consultancy Services (2006), the ICT infrastructure is very advanced. Thus, it appears that ICT integration into contemporary society and business operations is a reality in Namibia. Banking institutions, constituting the financial system of Namibia (Demirgüç-Kunt, 2012), are a critical aspect of any economy (Federal Reserve Bank of San Francisco, 2001). Banks are increasingly finding themselves exposed to the pressures of operating in the global market due to trends such as globalisation, networking and competition from other banks (Bourini et al., 2013). Banks thus need to keep up with the major developments in their sector (Chigada, 2014) through strategies such as innovation, and therefore they also need expert knowledge in order to be able to undertake

these innovative strategies. After the failure of some banks during the 2001-2007 period in the United States, evidence from the UK Treasury Select Committee in 2009 revealed that much of the available prior knowledge was ignored in the dealings of the failing banks (Holland, 2010). By its very nature, knowledge is dynamic. Thus, in knowledge organisations there is a need to continuously improve processes and update knowledge (Dawson, 2000). This makes knowledge development crucial for organisations to maintain their knowledge thus driving organisational strength and innovation (Dorn & Sahinyan, 2011). Moreover, knowledge development is a subset of knowledge management, which Chigada (2014) believes is not well understood in some South African banks. This has a particular impact on the three major multinational Namibian banks which have strong ties with South African banks. It is therefore important to study the effectiveness of the knowledge development efforts of Namibian banks and thereby assess the impact of these efforts on the development of Namibia. Banks like any other organisation today use information and communication technology (ICT) for their operations and knowledge development activities. The literature on the application of ICT in knowledge development has thus far examined the perspective of organisations. However, there has been little investigation into the views of the users of ICT, thereby missing an opportunity to gain a deeper insight and understanding of the actual use of ICT.

The discussion so far has focused on knowledge development in banks firstly because knowledge development can give Namibian banks a competitive edge and can aid in their contribution to the development of Namibia. Secondly, there is a paucity of research into knowledge development efforts in banks in Namibia.

## **2. Research Objectives**

This study was guided by the following objectives:

1. To determine the perceptions of staff about knowledge development in their line of work.
2. To identify the ICT tools that are best suited for supporting knowledge development activities for bank staff.
3. To recommend strategies that will enhance their ICT adoption for knowledge development activities.

## **3. Literature Review**

### **3.1 ICTs in banking**

ICT reflects a family of electronic technologies and services used to process, store and disseminate information, facilitating the performance of information-related human activities provided by and serving the institutional and business sectors as well as the public at large (Cohen, Salomon, & Nijkamp, 2002). ICT affects all processes associated with modern banking (Luka & Frank, 2012). Like Namibian banks, Tanzanian and Nigerian banks are described as having invested heavily in ICT infrastructure and personnel over the years (Agboola, 2007; Kevin, Ronald, & Benard, 2013). The literature highlights some of the potential benefits of ICT (Ghosh & Ghosh, 2009; Palvalin, Lönnqvist, & Vuolle, 2013). These include support in undertaking routine tasks, information sharing and faster data processing, information visibility and accessibility. Cost savings in training and information provision and even flexibility in training delivery (Comacchio & Scapolan, 2004) are other benefits discussed in the literature.

### ***3.1.1 ICT adoption***

Technology acceptance models focus on the factors which impact on the acceptance and adoption of technology. A closer look at the models such as the Technology Acceptance Model (TAM) (Davis, 1989), its derivative UTAUT (Venkatesh, Morris, Davis, & Davis, 2003a) and the TPB (Ajzen, 1991) reveals some key features. All three models share a rather striking similarity in their underlining approach whereby they focus on the perceptions of individuals and their effect on undertaking an action, in this case the acceptance and adoption of ICT. Perceptions for the purpose of this study are defined as the understanding or beliefs surrounding a particular aspect or object (Davis 1989). In the TAM model, Davis (1989) uses perceptions of individuals as predictors of adoption. The researcher specifically describes perceived usefulness and perceived ease of use in the study. The UTAUT model (Venkatesh, Morris, Davis, & Davis, 2003b) singles out four bases of individuals' acceptance and usage behaviour: performance expectancy, effort expectancy, social influence and facilitating conditions, thus further emphasising individuals' perceptions in ICT adoption.

## **3.2 Knowledge in the banking sector**

Knowledge in banks is observed to exist informally in the experience and cognitive skills of bankers and external parties (Holland, 2010, p. 99) giving value to peer support as a means of knowledge development in banks. The literature highlights the fact that knowledge work responds to the very nature of knowledge itself. For instance, according to Palvalin, Lönnqvist and Vuolle (2013), knowledge work involves rigorous cognitive processes. Thus the researchers highlight the level of commitment that the workforce typically engages in, "often requiring employees to spend their personal time thinking of matters to do with the work" (Palvalin et al., 2013, p. 545). The rapid pace of innovation, customer-needs alignment and globalisation in the knowledge-based economy means that competitive strength for an organisation lies in the collective learning ability of its employees, and the ability to acquire knowledge and apply it (Unruth, 2006, p. 1). This would mean that knowledge offers value to the organisation in its application as it usually resides in people's heads (Davenport & Prusak, 1998, p. 6). According to Nonaka and Takeuchi (1995a), knowledge is a result of human processes with human events such as social events actually contributing to its development. In a study on knowledge management in South African banks, it is postulated that "IT provides bankers with the tools ...to handle, store, locate, distribute, receive and communicate present tacit and explicit knowledge through social networks among people in possession of the knowledge" (Chigada, 2014, p. 55). Besides highlighting a place for ICT in knowledge development, Chigada (2014) also affirms the need for knowledge development initiatives to be focused on the individuals undertaking the knowledge development.

### ***3.2.1 Knowledge development processes in banks***

In terms of financial institutions such as banks, authors like Ledgerwood and White (2006) point out that most training actually occurs on the job, where it models the users' actual environments and needs. On-the-job training offers more useful and relevant knowledge to staff as it emanates from the actual work (Liebermann & Hoffmann, 2008). Their findings show that in order for training initiatives to offer value to employees they need to be modelled on employees' actual work environments and employee needs (Liebermann & Hoffmann, 2008). As much as the literature advocates for knowledge processes in knowledge organisations, some learning processes need to be in place in order to develop the expectations of the knowledge organisation. The knowledge development process, characterised by receiving, relating to, understanding and remembering new knowledge, requires some form of support (or drive) (Andersen & Hanstad, 2013). Knowledge is a human-influenced result of access to information, cognitive processes and internal reflection. Thus human interaction,

communication and other social activities between staff aid in the development and enhancement of individual knowledge. According to Vaiman (2010, p. 27), in order to nurture knowledge workers, organisations need to facilitate their interaction and socialisation. Hardly any studies of human resource development practices in Namibian banks have been conducted, thus providing very little information in this regard.

### **3.3 Impact of ICT on knowledge development and on the knowledge workforce in banks**

The relationship between ICT and knowledge development is founded on the enabling of certain processes within the organisation and indeed within societies (X. Zhang, Vogel, & Zhou, 2012). In other words, for ICT to have any association with knowledge development it must directly contribute to the processes of knowledge development. The ability to perform information creation tasks faster, develop quality information, search for and share information are all capabilities that ICT provides for organisations (Erne, 2010; Gressgård, 2011; Beaudreau, 2010). ICT is also important for the collection, organisation, dissemination of data as well as the exchange of information, ideas and insights (Jasimuddin & Zhang, 2011; Phang & Foong, 2010) and is effective in making explicit knowledge readily available in databases for decision-making (Phang & Foong, 2010a, p. 33). Furthermore, for banks to maintain their competitive edge, they need a workforce that can skilfully harness the full potential of ICT for their knowledge development initiatives. ICT thus offers an opportunity to handle the vast amounts of knowledge with greater ease and capability. Knowledge in banks is often disjointed and scattered in different locations (Chigada, 2014) but can be developed through social processes (Smith, 2001; Ali & Ahmad, 2006). Furthermore, “knowledge repositories and data warehouses are some of the technologies used for data retention” (Ali & Ahmad, 2006, p. 13) which is just one potential application of ICT in knowledge development in the banking sector.

### **3.4 Impact of perceptions on the adoption and use of ICT for knowledge development and developing a knowledge workforce in banks**

The role that ICT plays in effective and sustainable knowledge management and knowledge sharing further emphasises that its adoption is a necessity for a bank’s knowledge development activities. ICT adoption is a complicated process and individuals who adopt a particular technology actually develop perceptions that in turn affect their adoption of the ICT (Straub, 2009). Moreover, the literature also states that cognitive, emotional and contextual matters need to be taken into account throughout the adoption process (Straub, 2009, p. 645). It is important to note that the literature does not just present perceptions of ICT as the only determinant of ICT adoption. According to Zhang and Gutierrez (2007, p. 228), for example, peers and motivational elements applied to the individuals greatly affect the adoption of ICT, and Straub (2009) proposes that organisations interlink ICT services in order to positively affect the adoption process. Thus a key consideration is the perception of the individual towards the technology. The perceptions of individuals and organisations are thus important to consider when trying to understand adoption patterns of ICT yet limited research has been conducted to study this dynamic in the banking sector. The potential therefore exists for ICT to support knowledge development in the banking sector, thereby closing a gap in the knowledge on the views of individuals using the technologies. In other words, research associates ICT with knowledge development and knowledge economies (Antonova, 2011; Dorn & Sahinyan, 2011). It associates ICT and the benefits with potential value in knowledge development. While justified, these findings lack an essential ingredient, the perspective of the users - the ones who are meant to adopt the ICT and undertake knowledge development processes within ITC. This

is especially evident in the banking sector where the literature is silent on the perspectives of staff on the use of ICT in their knowledge development.

#### **4. Methodology and Methods**

This study aimed to understand the existing perceptions of bank employees and not monitor their change of perceptions over a period. It is also important to note that the research undertaken was descriptive in nature as it sought to express the insights into the impact that perceptions of ICT have on the knowledge development activities in the Namibian banking sector. Against this background the research targeted both managerial and non-managerial perspectives with little or no desire for generalised investigations or data collection techniques (Christensen, Johnson, & Turner, 2010) in the envisioned research design. This *naturalistic inquiry*, as Patton (2002) calls it, was guided by the need for the research to be undertaken in a way that respected and focused on the context of the participants in order to be able to gain a full understanding and placement of the findings to specific situations. In other words, the research needed to reflect context sensitivity (Patton, 2002). Cognisance was further taken of the fact that while collecting and analysing data, the objective of seeking insights to understand the possible role of ICT would typically involve the continual attempt to understand the participants' subjective perspectives and interpretations. In other words, the study took an interpretive approach. As a result of taking these two factors into account, a qualitative case study research design was deemed to be helpful in achieving the aims and approach of the entire investigation. Case studies are described as studies of events or phenomena in an in-depth manner with specific emphasis on the context of these events or phenomena (Leedy & Ormrod, 2010). Thus a case study was deemed a suitable methodology to understand the perceptions of the employees regarding the use of ICT in their knowledge development activities in the banking sector. The three major Namibian financial institutions, which for the purpose of this study will be identified as Bank A, Bank B and Bank C, form part of the multinational institutions in the banking sector. These three institutions were selected based on their heavy regional presence especially in South Africa upon which the Namibian banking sector models itself and relies upon for expertise. This defined the delimiting criteria for the number of cases. According to Saunders, Lewis and Thornhill (2007), restrictions of time, money and often access may render large sampling impossible. Samples help reduce the amount of data to be collected by considering data from a subgroup rather than all the cases from which data may be collected.

In the current study a maximum variation sampling technique was employed and which Christensen et al. (2010) describe as the identification and selection of a wide range of cases for data collection and analysis. A minimum total of 23 staff members across the cases (banks) divisions were selected. Preference was given to collecting data from staff members who had been with the organisation for at least a year. Only staff members working with computer systems on a daily basis or having a dedicated PC at their work station were considered. These criteria were essential to ensure that the data collected would help to establish the true perceptions of the bank employees. It was thought that bank employees who had established experience in the institution (one year or more) would be well versed in the internal processes and policies applied in the institutions in the areas of knowledge development and support. The primary method for collecting data during qualitative research studies such as this one is by means of in-depth, semi-structured interviews. Such interviews provide a collection of expressions, knowledge, perceptions and feelings (Walliman, 2011). In keeping with the confidentiality and anonymity clauses in the consent form, all interviews were kept anonymous and participants were asked for their consent with regard to follow-up discussions. In addition,

no information collected from one participant was shared with another participant. All interviews were undertaken separately with the consent of the participant. Data collected was filed away in a password-protected folder on an external hard drive in a locked room. Lastly, all information that could be used to identify a particular participant from the recording was changed to codes in the transcripts. The original recordings were stored in password-protected folders.

In deciding on the research design, the researcher took cognisance of the fact that this research depended on the quality of the information collected from the research participants. This meant that it was crucial to corroborate the findings of the research in order to enhance the validity and the usefulness of the qualitative research output. “Research validity refers to the correctness or truthfulness of the inferences that can be made from the results of the research study” (Christensen et al., 2010, p. 246). One of the ways used to maintain the transactional validity (Cho & Trent, 2006) was the use of an iterative process during data collection. High levels of accuracy were maintained by ensuring member checks. This is an iterative process between the collected data and discussion between the researcher and participants during the data collection process. One of the challenges that qualitative research design faces is researcher bias. This can lead to contaminating the results with the researcher’s bias rather than extracting information from the participants (Johnson & Christensen, 2012). The debriefing strategy was one method applied to ensure the validity and trustworthiness of the inferences. Member checks were conducted with the participants after the analysis of the interview data. In the member check sessions, the discussions highlighted the purpose of the investigation, themes discussed, and some of the information they provided during the interview. The aim was to ensure that participants had an opportunity to reflect on the discussion that had taken place and identify with the process while receiving the opportunity to confirm the information they had provided. The process of verifying the data findings and data interpretation (development of themes) with the participants was one method of triangulation applied in this research study.

## **5. Findings and Analysis**

### **5.1 Data analysis approach**

The data analysis took place by preparing and organising the data, then organising the data into themes through a process of coding and condensing codes and finally representing the data (Creswell, 2007). Leedy and Ormrod (2010) summarise this process as organisation of details, categorisation of data, interpretation of single instances, identification of patterns in the data and synthesis and generalisations.

### **5.2 Biographical information**

The biographical information of the 23 participants related to age, gender, educational qualifications, and position in the bank, computer literacy level and years of experience, number of participants per case and nature of work (see Table 1).

<b>Position of participants</b>	<i>Managerial</i>	5	<b>Age</b>	<i>20-25</i>	3
	<i>Non-managerial</i>	18		<i>26-30</i>	6
<b>Gender</b>	<i>Male</i>	10		<i>31-35</i>	7
	<i>Female</i>	13		<i>36-40</i>	6
<b>Participants per case</b>	<i>Bank A</i>	9	<i>40+</i>	1	
	<i>Bank B</i>	7	<b>Computer Literacy Level</b>	<i>Basic</i>	1
	<i>Bank C</i>	7		<i>Moderate</i>	12
<b>Years of experience</b>	<i>&lt;1 year</i>	3		<i>Advanced</i>	10
	<i>1-2 years</i>	4	<b>Qualifications</b>	<i>Grade 12</i>	8
	<i>3-4 years</i>	3		<i>Certificate</i>	5
	<i>5-6 years</i>	5		<i>Diploma</i>	4
	<i>&gt;7 years</i>	8		<i>Degree</i>	5
<b>Nature of Work</b>	<i>Sales</i>	2		<i>Post Grad</i>	1
	<i>Internal Support Services</i>	7			
	<i>Administrative Work</i>	4			
	<i>Banking</i>	10			

**Table 1:** Biographical information

### 5.3 Main findings of the study

The themes that emerged from the data collected in the interviews are discussed under the research objectives of this study.

#### 5.3.1 Perceptions of staff about knowledge development in their line of work

All the participants agreed that their line of work required a constant need to acquire, use and share knowledge. The usage of knowledge is assumed to go hand in hand with the acquisition of knowledge. ICT is seen as an enabler for the development of knowledge aiding personnel to create, acquire, use and share knowledge on a regular basis. Declarative knowledge which is described as factual, implying a descriptive explanation by Yim et al. (2004) is common within the banking sector. Numerous references were made by the participants to declarative knowledge in the form of policies and procedures such as departmental processes and operations. Declarative knowledge was evident in the form of documented procedures and guidelines in online repositories in Namibian banks as discussed in the literature (Chigada & Ngulube, 2015). Some bank staff believed that ICT could assist in the transfer of knowledge and facilitate the search for and retrieval of knowledge in general rather than provide for support for a specific type of knowledge (declarative or procedural). It was found that collaboration and interaction were critical elements in order for bank staff to develop their knowledge processes and they placed great value on ICT that enabled them to collaborate and communicate. This finding is supported by the literature which mentions the need for social processes to take place in order for knowledge to be developed (Phang & Foong, 2010). The managerial staff expressed the views of the organisations. The study showed that both managerial and non-managerial personnel in the financial institutions believed that ICT aided them in the process of knowledge development and they could easily identify the various types of ICT they used on a daily basis to support their knowledge development processes. It was found that Namibian banks strategically deploy ICT for on-the-job training through online courses, the intranet, internet, and collaborative tools like Microsoft SharePoint, Easy Aides as well as online repositories in order to gain the most benefit from the already advanced infrastructure in place. It was found that the banks provide this supportive environment,



enabled by ICT, to ensure that the knowledge development needs of the staff are met, and that the staff are aware of this, “*banks create enabling environment for me to do my work by providing the necessary tools, etc. (C.2)*”. The underlying rationale for using ICT for knowledge development activities stems from the efficiency, speed of processing and ease of use of ICT. Although the participants believed that ICT added value to their knowledge development needs, there was a lack of understanding of the strategic application of ICT in the support of knowledge development and thus the full benefits of ICT could not be experienced by the bank employees in Namibia. In one of the cases a participant alluded to the duplication of services provided by ICT tools when asked which emerging tools they thought would be suitable for their knowledge development needs, “*I don’t know any of them but what I do find is that sometimes the stuff is duplicated ...I think for me, it’s really just finding the information that’s the problem to search for it. So if, yeah, if everything was in just one hub where I can find it.*”(A.6). The lack of strategic development and implementation of ICT across the institution means that the knowledge may not be stored within the organisation on organisational networks and may be disbursed across different platforms which the banks may not have access to or control over. This would make it difficult to access the knowledge when needed by its staff. Though the perceptions of the managers and non-managers showed a convergence in thinking regarding the value of using ICT for knowledge development activities, there appeared to be a difference with regard to the creation of knowledge with managerial staff being the knowledge workforce. It was found that managerial employees are the knowledge creators in Namibian banks and the non-managerial staff the consumers of knowledge, “*I would always speak to my manager ...If there is an issue we speak to our manager then he will guide us and that’s how we learn stuff.*” (B.3). This lack of appreciation of the value of knowledge development and an institutional understanding view or appreciation of knowledge development or knowledge management by non-managerial staff were further supported by the findings of the pilot study.

### *5.3.3 ICT tools that are best suited for supporting knowledge development activities for bank staff*

The literature describes the level of investment of ICT in banks as being very high (Abubakar & Tasmin, 2012; Kabiru & Farouk, 2015). This is usually because ICT is seen as an engine of growth in knowledge economies (Piget & Kossai, 2013) of which banks are an integral part. This view is supported by the findings of this study where a huge ICT investment was noticed in the three Namibian banks. The banks have online learning Intranets, Internet access and Email services as ICT-based services that facilitate knowledge development. Most of the ICT tools the bank staff are interested in for knowledge development are tools emanating from within the organisation. The email service and internet and intranet as well as online services and repositories are all infrastructure and services that the banks provide to staff. On the other hand, bank staff members make use of their own ICT services through mobile devices, namely WhatsApp and Short Message System (SMS). This is because of the response rate and collaborative abilities they offer to the bank staff. It appears that bank staff members find value in ICT that facilitates social aspects in knowledge development, namely collaboration and knowledge sharing with the speed of response being an important aspect. One of the participants said when asked about the reason they preferred SMS services, “*you get an instant response*” (A.7).

#### 5.3.4 Recommended strategies that will enhance their ICT adoption for knowledge development activities.

The need to support knowledge development through ICT is an important theme that is also expressed in the desires of bank employees for the knowledge development initiatives in the future. The suggested recommendations focused on the following:

1. *Training and awareness:* One critical aspect in driving the adoption of ICT for knowledge development is the awareness of staff about the tools. Banks need to present the tools and guide staff in using them.
2. *Blended approach to knowledge development strategies:* The participants indicated a preference of combining online training with formal forms of training like workshops and informal forms of training like on-the-job training.
3. *Ease of use:* The design aspects of the ICT tools should consider the preferences of staff and be easy to use.
4. *Embedding collaborative processes:* ICT tools that support collaboration and communication to aid the knowledge development process are considered effective and should be encouraged.
5. *Maintenance of services:* This suggestion relates to the maintenance of the ICT infrastructure and services that support knowledge development activities. These services need to be kept up to date and should be easy to access as discussed by one of the participants, *"I would advise them to upgrade and update on the ICT and find better, faster ways of doing things. And do research thoroughly."* (C.4)

## 6. Conclusion

The financial services sector is a shining example of progressive technology development in which processes are made efficient and influenced by ICT. The bank staff members are aware that their knowledge requirements are constantly changing as a result of the shifts in policies and practices in their line of work. ICT is a medium that can readily be used for the development of knowledge and practices that build the work force in the banking sector in Namibia. Although the value of knowledge development is appreciated among staff, at an organisational level, strategies to enhance awareness of knowledge development and knowledge management across the entire staff spectrum need to be implemented in order to encourage the adoption of knowledge development activities via ICT. This study found that subordinates may not agree with managers on which trends are the most effective. Although this study could not delve deeper into this issue, this difference in opinion may point to possible differences in experiences for management and for general staff. Therefore, a more detailed study of this difference in opinion, using the same methodology, may offer a deeper understanding of the underlying issues related to the use of ICT from the perspectives of bank management. The findings of this study show that ICT impacts on the knowledge development processes of banks positively; however, this study did not perform an evaluation of the ICT-based knowledge strategies used by the different banks. Such an evaluation would help to determine the actual impact of the different ICT approaches on the knowledge development processes of the banks and thus suitable recommendations could be made in this regard.

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