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Advancing knowledge sharing in development organisations: barriers, enablers and strategies

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1. INTRODUCTION

In today's knowledge-based economy, non-governmental organisations (NGOs) are recognised as knowledge-intensive organisations (Bloice and Burnett, 2016). They are also recognised as key third sector actors on development landscapes (Lewis, 2010). In the literature, various terms are used to refer to non-governmental organisations. For example, in the United States, NGOs are called private voluntary organisations, while in the UK, they are called 'voluntary organisations' or 'charity organisations'. In most African countries, they are called voluntary development organisations (World Bank, 1990). For this study, development organisations are considered as non-governmental organisations established to serve the public's interest, such as community assistance, education, science, literary, or religious work (Carroll, 2018).

Development organisations demonstrate substantial comparative advantages, especially their ability to reach the poor, facilitate local resource mobilisation, deliver services at a relatively low cost, and find innovative solutions to novel problems. However, they commonly demonstrate serious weaknesses, such as a limited technical capacity for complex projects, inability to scale up successful projects, inability to develop self-sustaining community organisations, over-focusing on the micro-level projects, and limited managerial and organisational capabilities (World Bank, 1990).

Despite the common use of the term 'knowledge sharing,' different researchers have used the phrase to mean different things. For example, Van Der Meer et al. (2009) defined knowledge sharing as the process of transferring or disseminating organisational knowledge. Lichtenstein and Hunter (2008) offered a more specific view of knowledge sharing, describing it as a 'complex process involving the contribution of knowledge by the organisation or its people, and the collection, assimilation and application of knowledge by the organisation or its people.' The operational definition of knowledge sharing adopted for this study was: 'activities of transferring or disseminating knowledge from one person, group or organisation to another (Lee, 2001). This definition emphasises the sharing of knowledge from one individual to another and the importance of sharing the knowledge that will be meaningful and useful to the recipient.

Several papers have been published on knowledge sharing hindrances and facilitators in the for-profit sector (Hewlitt et al., 2005). Some researchers have identified knowledge sharing barriers for development organisations (for example, Ondari-Okemwa and Smith, 2009; Ringel-Bickelmaier and Ringel, 2010; Ofori-Dwumfuo and Kommey, 2013; and Bloice and Burnett, 2016). However, most existing literature appears to have been derived from for-profit organisations' experiences rather than those of development organisations. In this context, this research fills that gap by examining the enablers and barriers of knowledge sharing in development organisations. To identify these organisations, the researcher consulted the list of members on the directory of development organisations. The development organisations were screened for participation based on their knowledge sharing activities by examining publicly available materials such as mission statements and annual reports. The analytical framework developed for the knowledge sharing barriers relies on Riege (2005) seminal review of barriers to knowledge sharing.

2. Literature review

Various researchers have examined factors that promote knowledge sharing from different perspectives. For example, a study by Huffaker and Lai (2007) identified motivation as one of the key enablers of knowledge sharing. The authors argued that younger workers and those new to an organisation were motivated to share knowledge for self-interest purposes. In comparison, older workers were motivated to share knowledge for selfless factors such as mentoring. Ma and Yuen (2011) explored factors that motivated knowledge sharing in online communities and found that perceived commitment to online relationships enhanced knowledge sharing. Similarly, Cheung et al. (2013) examined factors that motivated members to share knowledge in online communities. They found that both satisfaction and knowledge self-efficacy influenced members' intention to engage in knowledge sharing. Chiu et al. (2011) identified factors that motivated individuals to share knowledge in virtual communities and reported that knowledge supply posed a significant challenge in maintaining an online community. That study revealed that in open professional virtual communities, the quality of knowledge, social interaction and self-worth influenced individuals' likelihood of sharing knowledge.

Some studies have examined knowledge sharing factors from the social capital perspective. For example, Hsu (2015) measured the benefits and risks of social capital influence in online knowledge sharing community members. Data was collected from 626 virtual community members of the most popular and largest online community in Taiwan. The findings showed that social interaction and trust played essential roles in increasing knowledge sharing. Similarly, Li and Li (2010) investigated the impact of social capital on online communities' knowledge sharing behaviour. They reported that reciprocity and social interaction ties exerted a significant effect on knowledge sharing. Sheng and Hartono (2015) examined how social capital facilitated knowledge creation and sharing in online communities. The findings revealed that the three dimensions of social capital (structural, relational, and cognitive) accelerated knowledge sharing. They showed that social capital positively affected intrinsic and extrinsic motivation, which later positively influenced community users' intention to share knowledge.

Many scholars recognise the influence of culture on knowledge sharing practices. For example, (Li, 2010, Li, 2009, Li et al., 2007) investigated the national cultural factors that influence cross-cultural knowledge sharing in online environments. Similarly, Ardichvili et al. (2006) explored cultural factors influencing knowledge sharing strategies in virtual communities of practice and found that national culture impacts knowledge sharing differently. Findings revealed that three national cultural differences impacted knowledge sharing. These were language, individualism, and different levels of uncertainty avoidance.

Other researchers have investigated the impact of trust on knowledge sharing. For example, Ho et al. (2010) examined the effect of trust on organisational online knowledge sharing and found that trust in the workplace facilitated staff interest in online knowledge sharing. Chang et al. (2013) investigated factors influencing knowledge sharing behaviours and found that knowledge sharing's behavioural intentions were primarily associated with trust. Chen et al. (2014) surveyed 226 managers in major industrial parks in Taiwan and found that inter-organisational trust leads to better inter-organisational collaboration and knowledge sharing. Similarly, Kipkosgei et al. (2020) investigated the association between coworker trust and knowledge sharing among public sector employees. They carried out a survey of 255 employees of Kenyan public organisations and found an association between coworker trust

and knowledge sharing. Thus, organisations are likely to increase knowledge sharing by building trust among workers.

Other studies have identified technology as a knowledge-sharing enabler. Pan et al. (2001) noted that knowledge sharing is likely to be successful if specific information technologies are used, and an environment that enables knowledge-sharing is created. Chao et al. (2011) investigated the application of knowledge sharing strategies and found that learners who were assigned knowledge sharing interactive systems were likely to have better learning outcomes. Participation in online discussion forums can also benefit members by bringing them closer. Seliaman (2013) investigated the use of online discussion forums by Sudanese online communities. Findings revealed that online social skills had a positive influence on members' likelihood to share knowledge. Similarly, Saadatmand and Kumpulainen (2013) investigated the use of personal learning environments for sharing knowledge and found that the nature of content aggregation in a personal learning environment affected knowledge sharing. They concluded that learners should be actively involved in their own learning environment to maximise emerging technologies' benefits.

Some studies have sought to demonstrate an association between empowering leadership and knowledge sharing. For example, Xue et al. (2011) investigated the impact of team climate to determine whether leadership style influenced knowledge sharing. They revealed that team climate affected individual attitudes towards knowledge sharing. Similarly, an earlier study by Bock et al. (2005) found that team climate influenced individual attitudes to share knowledge. A survey by Srivastava et al. (2006) also reported an association between empowering leadership and knowledge sharing behaviour.

With regard to knowledge sharing barriers, numerous researchers have attempted to categorise the obstacles into different groups. For example, Riege (2005) examined over three dozen knowledge-sharing barriers and organised them into three main categories: individual, organisational, and technological barriers. The findings revealed that some obstacles were specific to the type of organisation (for example multinational corporations, small and medium-sized enterprises, private, public sector, and not-for-profit organisations). Similarly, Qureshi and Evans (2015) explored the deterrents of knowledge sharing and identified nine categories of barriers. These included information technology limitations, high cost of sharing knowledge, lack of socialisation, lack of trust, organisational politics, poor leadership and lack of time. Ardichvili (2008) developed a framework for identifying enablers and barriers to effective knowledge sharing. Findings revealed that lack of technological expertise together with disinterest in the use of ICT tools impaired knowledge sharing. Similarly, Loebbecke and Myers (2017) reviewed challenges associated with the deployment of knowledge portals and found that lack of sufficient participation, organisational culture and lack of knowledge integration affected implementation.

Asrar-ul-Haq and Anwar (2016) conducted a meta-review of factors that promote or obstruct knowledge sharing. Their findings revealed that lack of trust among individuals hindered knowledge sharing. In an analysis of factors that impacted knowledge transfer, Fong Boh et al. (2013) found that culture was one of the main obstacles. Yunduan (2011) investigated challenges associated with knowledge sharing in online learning communities and identified difficulty in extracting tacit knowledge and dominance by some members as the main barriers. Similarly, Gururajan and Fink (2010) found that heavy workloads were likely to deter individuals from sharing knowledge. As noted b, Hew and Hara (2007), organisations may fail to implement knowledge sharing strategies for a variety of reasons, such as lack of new

knowledge to contribute, lack of subject matter expertise, lack of time, poor technology and other competing priorities.

Although studies on the barriers and influencers of knowledge sharing in the not-for-profit sector are limited, few studies identify the obstruction factors. For example, Bloice and Burnett (2016) examined knowledge sharing barriers in a social service organisation and presented a set of knowledge sharing barriers specific to the not-for-profit sector. These were lack of confidence to share, not knowing that specific knowledge is available and ethical considerations. Ofori-Dwumfuo and Kommey (2013) investigated the use of ICT tools in knowledge management in a Ghanaian state organisation and identified knowledge sharing challenges which included lack of trained staff, poor ICT infrastructure, lack of policies and rapid changes in technology. Jensen (2005) explored knowledge sharing in 11 agencies and identified obstacles such as unplanned approaches to knowledge sharing, weak incentives to share knowledge, lack of user-oriented ICT solutions and lack of appraisal of knowledge sharing. Jain (2006) explored the role of information and communication technology in knowledge management and found that ICT infrastructure and political challenges affected ICT-based knowledge management in Africa. Besides, inadequate ICT policies, inadequate ICT literacy programmes, ineffective regulatory frameworks, and lack of empowerment of local people affected the use of ICTs in Africa's knowledge management processes.

David and Fahey (2000) examined cultural barriers to knowledge management and identified four ways that culture affects knowledge sharing. These included: determination of what knowledge is and which knowledge is worth sharing, defining the relationships between individual and organisational knowledge, creating the context for social interaction, and shaping the processes by which new knowledge is produced in organisations. Similarly, Ringel-Bickelmaier and Ringel (2010) noted that international development organisations hire internationally recruited specialists, and a majority are employed on fixed-term contracts. The high staff mobility rates imply that it is important to create a mechanism for sharing explicit and implicit knowledge to avoid knowledge drain. Ondari-Okemwa and Smith (2009) examined the role of knowledge management in supporting performance, governance, and service delivery in Kenyan government agencies. They found that the Kenyan civil service was entrenched in bureaucracy, which deterred the generation, distribution and sharing of knowledge.

Although there are many studies on knowledge sharing barriers and enablers, the majority of these studies focus on the for-profit sector. The findings of these studies cannot be generalised as knowledge sharing in non-for-profit organisations differs from that in for-profit organisations. For example, it is difficult for the not-for-profit sector to retain knowledge as most organisations operate with voluntary workers, and knowledge activities are not included in their job descriptions. Besides, development organisations work within stringent budgets that prevent long-term investment in knowledge sharing initiatives.

As revealed through the literature review, most of the studies on knowledge sharing barriers suggest the obstacles are largely due to individual barriers, poor organisational culture and technological issues. Therefore, Riege's list of individual, organisational, and technical obstacles forms the basis of this paper's analytical framework (Riege, 2005). The paper will present different types of barriers in the following sections, as viewed by development organisations, which emerged from the survey and interview data.

3. RESEARCH DESIGN

The population for this study comprised 331 development practitioners drawn from 500 development organisations. The directory of development organisations was used as the sampling frame. This directory categorises organisations into nine groups: international organisations, civil society organisations, government institutions, financial institutions, training and research centres, private sector support organisations, development consulting firms, information providers and grant makers (Directory of Development Organisations, 2011). For the interview, eleven key informants were selected: four information officers, two digital learning experts, a customer service officer, a communication manager, two knowledge managers, an ICT technician, a regional manager, and a project manager. The respondents were experts in their field and had been involved in knowledge sharing initiatives.

The quantitative survey had several questions of different knowledge sharing enablers such as motivation, trust, social capital, culture, leadership, and technology use. The obstruction factors were categorised as individual factors, organisational factors, and technological factors (Riege, 2005). The quantitative findings were used to determine the interview questions used in the second qualitative phase (Creswell, 2013). This approach enabled a deep understanding of the challenges and opportunities of knowledge sharing in development organisations in Kenya. The interview questions were designed to gather information on knowledge management practitioners' perceptions regarding knowledge sharing enablers and hindrances.

Two knowledge management practitioners, who are members of the *Knowledge Management for Development* social network, assessed the questionnaire's content validity. The experts reviewed each question's content, the flow of the questions, and the questionnaires' completeness. As the actual study involved a sample of development organisations, nine development practitioners were chosen from different categories of development organisations for a pilot study. The researcher conducted the pilot study through face-to-face, telephone and Skype meetings.

The quantitative data were collected and analysed first, and the findings informed the qualitative data collection and analysis (Fetters et al., 2013). The two sets of data were analysed separately and then integrated, as illustrated in Figure 1.
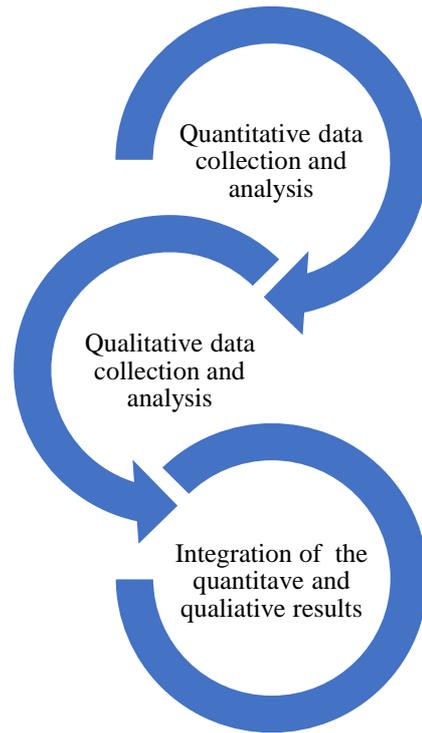
Figure 1: Integration through study design, Fetters et al. (2013)

There were two components to the data analysis:

1. Quantitative data related to the survey questionnaire; and
2. Qualitative data related to the key informant interviews.

Quantitative data was analysed to determine the knowledge sharing barriers and enablers and determine the organisation's correlation. The questionnaire covered demographic information (organisation category, size, respondents' experience) and the main questions. The researcher identified eight knowledge sharing enablers and three broad categories of knowledge sharing barriers, which were tested empirically. Several tools were used to examine the research questions: descriptive analysis included frequencies and percentage distribution, while inferential statistics involved the Chi-square test of association. The researcher used SPSS to analyse the quantitative data as this software has a broad coverage of formulas (Dudovskiy, 2016).

The qualitative data analysis was conducted in three steps: developing and applying codes, identifying themes, patterns and relationships, and summarising the data (Dudovskiy, 2016). Data were captured using an audio recorder and analysed through content analysis. During the interview sessions, notes were taken as a backup for the audio recording. After the interviews, the researcher verbatim transcribed the audio recordings. The transcripts and field notes were then read comprehensively to obtain a thorough understanding of the interview discussions' content. Coding was then performed, which included assigning labels to units identified in the transcripts. The text was then organised into themes and categories using NVivo QSR (version 11) for efficient data management.

The findings presented in the paper are based on the analysis of three questions that identified knowledge sharing enablers, barriers and strategies in development organisations in Kenya.

(i)   What factors promote knowledge exchange between practitioners in development organisations?

(ii)   What factors hinder knowledge sharing in development organisations?

(iii)   What strategies lead to successful knowledge sharing in development organisations?

4.   FINDINGS & DISCUSSION

For the quantitative phase, the majority of the respondents were men (n=199; 60.1%), with the remaining being women (n=132: 39.9%). Table 1 presents a summary of respondents' demographic characteristics in terms of gender, age, size of the organisation and job level.

Table 1: Sample characteristics

Characteristic	Total (n, %)	Women (n, %)	Men (n, %)	p-value[†]
Gender	331 (100)	132 (39.9)	199 (60.1)	
Age, years				
18–34	89 (26.9)	34 (25.8)	55 (27.6)	
35–54	203 (61.3)	79 (59.9)	124 (62.3)	0.483
55+	39 (11.8)	19 (14.4)	20 (10.1)	
Organisation size				
1–50	121 (36.6)	53 (40.2)	68 (34.2)	
51–100	26 (7.8)	14 (10.6)	25 (12.6)	0.247
101–250	39 (11.8)	6 (4.6)	20 (10.1)	
Over 250	145 (43.8)	59 (44.7)	86 (43.2)	
Current job levels				
Entry/intermediate	55 (16.6)	22 (16.7)	33 (16.6)	
Middle management	112 (33.8)	41 (31.1)	71 (35.7)	
Senior management	70 (21.2)	26 (19.7)	44 (22.1)	0.268
Owner/executive	17 (5.1)	6 (4.6)	11 (5.5)	
Consultant	59 (17.8)	25 (18.9)	34 (17.1)	
Others	18 (5.4)	12 (10.0)	6 (3.0)	

[†] Chi-square test of association

Respondents' demographic characteristics showed that the majority were aged 35–54 years (n=203; 61.3%), followed by 18–34 years (n=89; 26.9%). The demographic characteristics also revealed that a majority of respondents worked in organisations with over 250 employees (n=145; 43.8%). A majority of respondents occupied middle management (n=112; 33.8%) and senior management (n=70; 21.2%) positions. The lowest proportion of respondents worked at the executives' level (n=17; 5.1%).

4.1 Knowledge sharing enablers

Respondents were asked to indicate the extent to which they agreed or disagreed with pre-determined knowledge sharing enablers: knowledge sharing culture, knowledge sharing strategy, reward system, high level of trust among staff, strong social capital, motivation to share knowledge, inspiring leaders and training opportunities on knowledge sharing. The factors that promoted knowledge sharing are illustrated in Table 2.

Table 2: Knowledge sharing promotion factors

Factor	Quantitative results N=253			Qualitative results
	Strongly Agree/Agree n (%)	Slightly Agree/ Slightly Disagree n (%)	Strongly Disagree/ Disagree n (%)	Exemplar quote
Knowledge sharing culture	126 (50)	100 (39.7)	26 (10.3)	*'Creating an enabling knowledge sharing culture such as ad hoc meetings helps in identifying areas that need improving. Sometimes we document and escalate to higher levels'.* (KM9)
Knowledge sharing strategy	99 (39.9)	110 (44.4)	39 (15.7)	*'We have a programme called Knowledge Management Sharing Initiative that helps to create awareness to employees on knowledge and knowledge management in their day to day work. We encourage people to share knowledge as when one shares, one becomes more knowledgeable and productive'.* (KM8)
Reward system	31 (12.8)	84 (34.6)	128 (52.7)	*'The management has set up a departmental website. The department gives targets on the amount of information they are expected to put online. The department that performs well is rewarded according to the established reward system.* (KM10)
High level of trust	80 (32.0)	116 (46.4)	54 (21.6)	*'Creating a trust in a way that if I put my document in public, my document will not be used for other malicious things'.* (KM4) *'Creating trust is another key area. Sometimes the research findings you get may not auger well with a particular group, and you may not disseminate such information without auditing it. You can come up with findings that may not be favourable to some segments'.* (KM9)
Strong social capital	92 (37.1)	121(48.8)	35 (14.1)	*'Knowledge sharing is supported through linking similar professional from a different department to collaborate'.* (KM3)
Motivating staff to share knowledge	88 (35.1)	107(42.6)	56 (22.3)	*'Normally we have conferences and workshops where members of staff are encouraged to come up with presentations, papers and journal articles, where they could go and present and publish through our organisation'.* (KM4)
Inspirational leadership	91 (38.1)	98 (41.0)	12 (20.9)	*'Motivation from our bosses offers support to share knowledge. Team building also promotes sharing of knowledge.* (KM1)
Providing staff with training opportunities	73 (29.3)	99 (39.8)	77 (30.9)	*'My organisation creates awareness around knowledge sharing tools and how they increase efficiency. We equip people with skills on how to use the tools. We use that tactic to empower people to do things on their own'.* (KM2)

Results of the promotion factors showed that establishing a knowledge-sharing culture was the most important factor (n=126). This was followed by developing a knowledge sharing strategy (n=99) and strong social capital (n=92). The findings of the present study were similar to earlier findings from (Chao et al., 2011), who investigated the application of knowledge sharing strategies for achieving suitable interaction among members of an online learning environment. In contrast, earlier research suggested that the influence of the national culture was likely to be less manifested in online knowledge sharing (Ardichvili et al., 2005; Li et al., 2007; Li, 2009).

The study showed that social capital promoted knowledge sharing. This finding was consistent with that of Li and Li (2010), who showed that reciprocity and social interaction ties exerted a significant impact on knowledge sharing. In accordance with the present results, previous studies demonstrated that social capital positively affected intrinsic and extrinsic motivation, which subsequently positively influenced the intention of community users to share knowledge (Zhang et al., 2017).

4.2   Knowledge sharing hindrances

This study also sought to identify factors that hindered knowledge sharing in development organisations. Respondents were asked to indicate the extent to which they agreed or disagreed with pre-determined knowledge sharing barriers, categorised as individual, organisational and technical hindrances. The analysis of the individual knowledge sharing barriers is shown in Table 3.

Table 3: Individual knowledge sharing barriers

	Quantitative results (N=331)	Qualitative interviews (N=11)
Individual barriers	Lack of time to share knowledge: n=159 (63.6%) Low awareness of the benefits of sharing knowledge: n=107 (42.8%) Difference in culture: n=103 (41.2%) Lack of trust: n=91 (36.4%) Fear that sharing knowledge may put my job at risk: n=74 (29.6%) Lack of social network: n=44 (17.6%)	*'There are times when you have excess work, and you do not get time to update the knowledge base'.* (KM1) *'Some individuals are selfish. People get to know the information but they don't want to share it with others'.* (KM11) *'People want to remain experts in their areas and this acts as an inhibitor to knowledge sharing'.* (KM5) *'One of the barriers to knowledge sharing is lack of awareness of the benefit of sharing. Some people do not appreciate why they need to share knowledge'.* (KM8) *'Lack of motivation is another factor and this can result from poor response from knowledge sharing initiative'.* (KM1) *'There is lack of trust whereby you feel like the top management do not trust you or they think that the way of doing things is not the way you believe things should be done'.* (KM1) *'There is fear that if you share what you know, someone will hold that information as a powerful tool to advance their own agenda. Most of the time, when someone is knowledgeable, they do not want to share the knowledge with other people, especially with the newer staff. Older staff is not open enough to tell you this is how things work'.* (KM3) *'There is lack of self-esteem among individual members. We normally do not believe in ourselves when we have something to share. We tend to conceal not in a selfish manner, but we do not think that our knowledge will be accepted, especially if you think you are an inferior member. We lack confidence in sharing knowledge'.* (KM11)

Lack of time to share knowledge (63.6%), low awareness of the benefits of sharing knowledge (42.8%) and cultural differences (41.2%) were the most common individual obstacles. Other individual obstacles included: fear of what others would say, lack of priority from management, low level of capacity to disseminate knowledge and translate it into action, information silos, timely feedback, technological incompetence, lack of resources for packaging and dissemination of knowledge to the correct audience, language barriers, misunderstanding/misinterpretation/lack of sense of how value is created through knowledge sharing, lack of a platform, fear of losing influence/importance and misinterpretation of information.

This study also analysed the association between individual knowledge sharing challenges and the size of the organisation. For respondents working in organisations with over 250 employees, lack of trust was the most significant barrier (n=43; 47.3%). For individuals working in organisations with 1–50 employees, fear that sharing knowledge may put one's job at risk was the most significant obstacle (n=29; 39.2%).

Table 0: Individual barriers by organisation size

| Individual Barriers (n=250) | Organisation size, no. of employees | | | | Total |
	1–50 n (%)	101–250 n (%)	51–100 n (%)	>250 n (%)	
Lack of time to share knowledge	58 (36.5)	17 (10.7)	10 (6.3)	74 (46.5)	159 (63.6)
Fears that sharing knowledge may put my job at risk	29 (39.2)	8 (10.8)	5 (6.8)	32 (43.2)	74 (29.6)
Low awareness of the benefits of sharing knowledge	36 (33.6)	15 (14.0)	8 (7.5)	48 (44.9)	107 (42.8)
Lack of social network	16 (36.4)	7 (15.9)	3 (6.8)	18 (40.9)	44 (17.6)
Lack of trust	32 (35.2)	11 (12.1)	5 (5.5)	43 (47.3)	91 (36.4)
Differences in culture	33 (32.0)	13 (12.6)	9 (8.7)	48 (46.6)	103 (41.2)
None of the above	11 (50.0)	2 (9.1)	0	9 (40.9)	22 (8.8)

Regarding the organisational obstacles, lack of integration of knowledge sharing into organisational goals (58.3%), lack of organisation culture that supports knowledge sharing (58.3%) and lack of reward and recognition systems (50%) were reported as the most significant barriers. The analysis of the reported organisational obstacles is shown in Table 5.

Table 5: Organisational knowledge sharing barriers

	Quantitative survey (N=331)	Qualitative interviews (N=11)
Organisational barriers	Lack of integration of knowledge sharing into organisational goals: n=147 (58.3%) Lack of organisation culture that supports knowledge sharing: n=147 (58.3%) Lack of reward and recognition systems: n=126 (50.0%) Hierarchical structure that inhibits knowledge sharing: n=121 (48.0%) Lack of leadership in terms of communicating benefits of knowledge sharing: n=117 (46.4%) Restrictive work environment: n=77 (30.6%) Internal and external competitiveness: n=64 (25.4%)	*'Normally, knowledge sharing is not very possible and successful because of the organisation culture where everybody is believing in rumours'.* (KM11) *'Lack of management support is the most inhibiting factor to knowledge sharing'.* (KM10) *'Inadequate infrastructure (i.e. few computers) is a barrier in knowledge sharing in my organisation'.* (KM4) *'Lack of good policies and bureaucracies in the organisation is a challenge to knowledge sharing'.* (KM11)

Other organisational obstacles included lack of response after sharing knowledge, perception that people may not be interested in the knowledge, very low baseline for skilled use among colleagues, poor overall skills, poor value creation and constraint network of the organisation.

A majority of the respondents from organisations with over 250 employees (n=64; 50.8%) indicated that lack of reward and recognition systems was the most significant barrier. For organisations with 1–50 employees, the commonest barrier was restrictive work environments (n= 29; 37.7%). Table 6 outlines the organisational knowledge sharing barriers by organisation size.

Table 6: Organisational barriers by organisation size

Organisational obstacles (n=252)	Organisation size, no. of employees				Total
	1–50 n (%)	101–250 n (%)	51–100 n (%)	>250 n (%)	
Lack of integration of knowledge sharing into organisational goals	48 (32.7)	24 (16.3)	11 (7.5)	64 (43.5)	147 (58.3)
Lack of leadership in terms of communicating benefits of knowledge sharing	37 (31.6)	18 (15.4)	8 (6.8)	54 (46.2)	117 (46.4)
Lack of reward and recognition systems	39 (31.0)	15 (11.9)	8 (6.4)	64 (50.8)	126 (50.0)
Lack of organisation culture that supports knowledge sharing	47 (32.0)	24 (16.3)	10 (6.8)	66 (44.9)	147 (58.3)
Internal and external competitiveness	20 (31.3)	9 (14.1)	3 (4.7)	32 (50.0)	64 (25.4)
Restrictive work environment	29 (37.7)	8 (10.4)	8 (10.4)	32 (41.6)	77 (30.6)
Hierarchical structure that inhibits knowledge sharing	39 (32.2)	17 (14.1)	8 (6.6)	57 (47.1)	121 (48.0)
None of the above	8 (42.1)	0	1 (5.3)	10 (52.6)	19 (7.5)

Respondents indicated that lack of integration of ICT systems and processes (n=133; 53.6%), lack of training on new ICT systems and processes (n=107; 43.2%) and mismatch between individuals' needs and integrated ICT systems (n=99; 39.9%) were the most common technical obstacles to knowledge sharing. The technical batteries are analysed in table 7.

Table 7: Technical knowledge sharing barriers

	Quantitative results (N=331)	**Qualitative interviews (N=11)**
Technical barriers	Lack of integration of ICT systems and processes: n=133 (53.6%) Lack of training on new ICT systems and processes: n=107 (43.2%) Mismatch between individuals' needs and integrated ICT systems: n=99 (39.9%) Lack of communication on the advantages of new ICT systems: n=92 (37.1%) Reluctance to use ICT systems due to lack of familiarity: n=86 (34.7%) Lack of technical support: n=85 (34.3%)	*'There is resistance to new technology. People trust their old ways of doing things and it becomes hard when the organisation introduces new technology for knowledge sharing'.* (KM11) *'Accessibility to Internet connectivity hinders knowledge sharing. Some of our staff is located in remote areas'.* (KM2) *'Unreliable Internet and power connection present some challenges when it comes to knowledge sharing. Technical know-how is also a challenge in my organisation'.* (KM4)

Other obstacles included internet connectivity and speed, poor search technology, lack of awareness about where to access information, reluctance to use ICT, Internet irregularities, low-quality ICT platform, slow network, downtime, poor maintenance, Internet cost and poor alignment of ICT development to organisational goals.

Majority of respondents from organisations with over 250 employees (n=58; 54.2%) indicated that lack of training on new ICT systems and processes was the most common barrier. For organisations with 1–50 employees, the most significant barrier was mismatch between individuals' needs and integrated ICT systems (n=37; 37.4%).

Table 8: Technical knowledge sharing barriers by organisation size

Technical obstacles (n=248)	Organisation size, no. of employees				
	1–50 n (%)	101–250 n (%)	51–100 n (%)	>250 n (%)	Total n (%)
Lack of integration of ICT systems and processes	45 (33.8)	21 (15.8)	11 (8.3)	56 (42.1)	133 (53.6)
Lack of technical support	30 (35.3)	11 (12.9)	5 (5.9)	39 (45.9)	85 (34.3)
Mismatch between individuals' needs and integrated ICT systems	37 (37.4)	11 (11.1)	7 (7.1)	44 (44.4)	99 (39.9)
Reluctance to use ICT systems due to lack of familiarity	30 (34.9)	14 (16.3)	1 (1.2)	41 (47.7)	86 (34.7)
Lack of training on new ICT systems and processes	31 (29.0)	13 (12.2)	5 (4.7)	58 (54.2)	107 (43.2)
Lack of communication on the advantages of new ICT systems	27 (29.4)	15 (16.3)	7 (7.6)	43 (46.7)	92 (37.1)
None of the above	9 (25.0)	3 (8.3)	4 (11.1)	20 (55.6)	36 (14.5)

Previous studies showed that both profit-making organisations and not-for-profit organisations faced similar knowledge sharing challenges (Collison and Parcell, 2007). The present study found that lack of trust, leadership, social networks, integration of ICT systems and time obstructed knowledge sharing in development organisations. These results appeared to be consistent with the findings of Qureshi and Evans (2015), which identified nine categories of deterrents to intra-organisational and inter-organisational knowledge sharing. These included limitations of information technology, high cost of sharing knowledge, lack of socialisation, lack of trust, organisational politics, poor leadership and lack of time.

In this study, the quantitative data indicated that lack of time to share knowledge was the main inhibitor to knowledge sharing. This was also reported in the qualitative data, as one key informant noted that '*there are times when one has excess work and do not get time to update the knowledge base*' (KM1). An earlier study by Gururajan and Fink (2010) found that heavy workloads were likely to deter individuals from sharing knowledge. These results were consistent with those obtained by Asrar-ul-Haq and Anwar (2016), which suggested that lack of trust among individuals hindered knowledge sharing in an organisation, and interpersonal mistrust deterred sharing of knowledge in both inter- and intra-organisational contexts.

Organisational culture was also highlighted as a factor that obstructed knowledge sharing. This was reported in both the survey results and by key informants, indicating that lack of supportive culture in an organisation hinders knowledge sharing. Similarly, Fong Boh et al. (2013) showed that organisational culture was an inhibitor to knowledge sharing. According to their findings, culture hindered knowledge sharing when transferring knowledge from a parent organisation to its branches when the source and recipient do not share a common culture.

In summary, the empirical study confirmed the presence of most, but not all, of the knowledge sharing barriers and enablers that had been identified through the literature review. These factors are summarised in Figure 2 and Figure 3 below.
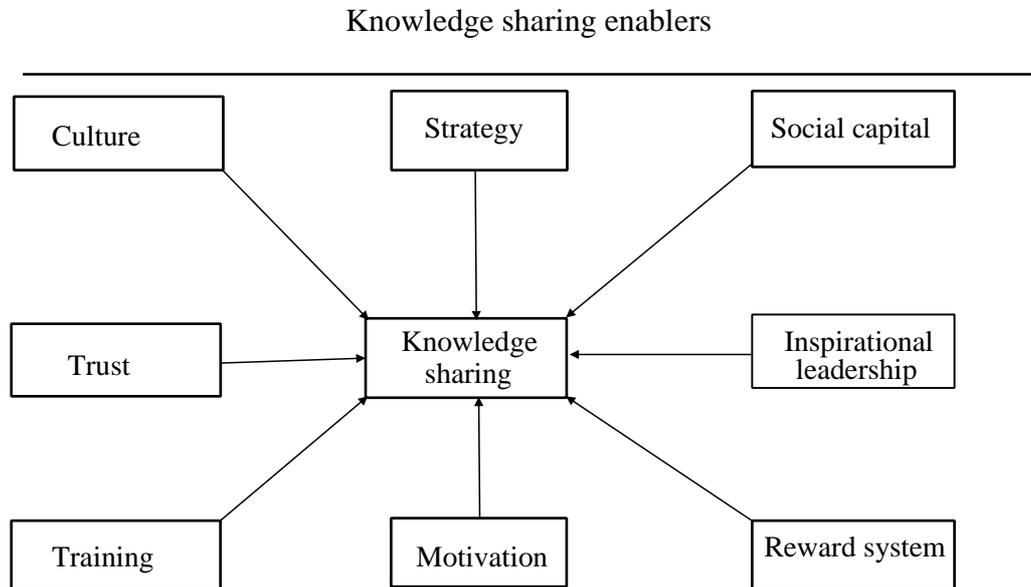
Knowledge sharing enablers

Figure 2. The potential knowledge sharing enablers for development organisations
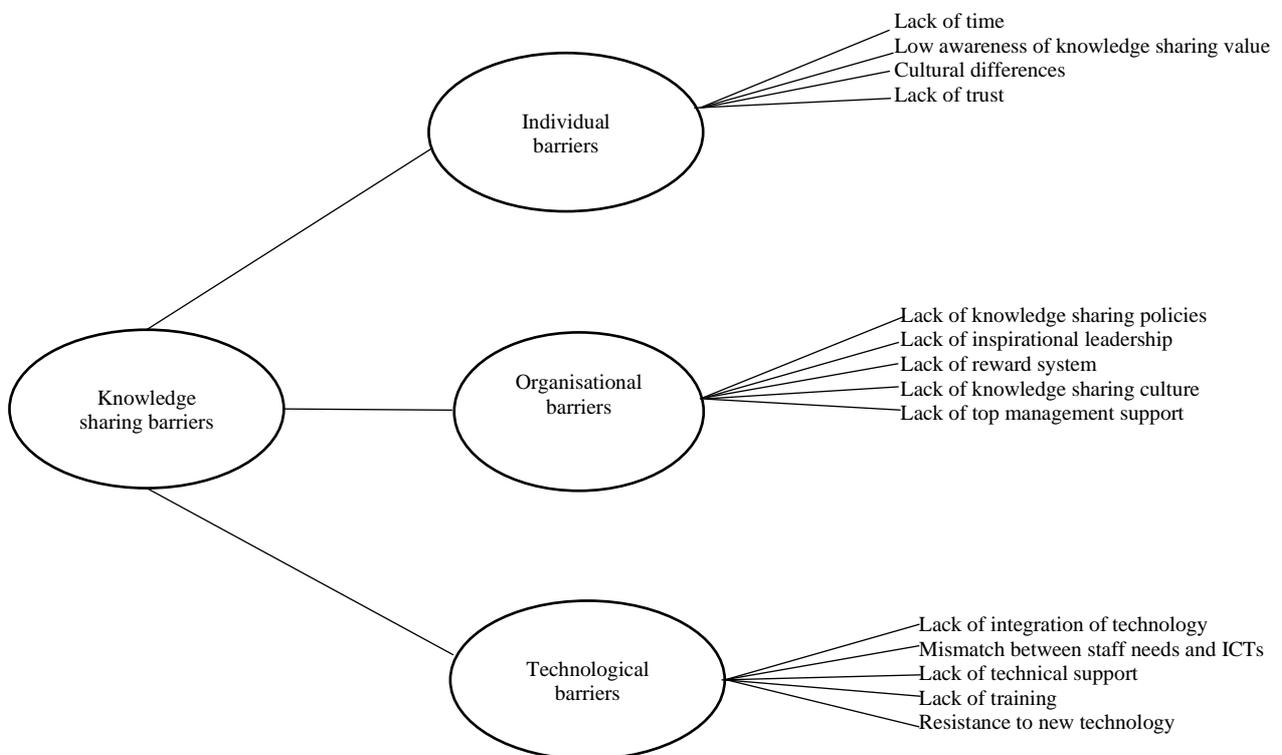

Figure 3. The potential knowledge-sharing barriers for development organisations

4.3 Knowledge sharing strategies

This study examined the strategies that can be used to enhance knowledge sharing in development organisations. Respondents were asked to respond to closed-ended questions and the responses were on a five-point Likert scale: very important, important, moderately important, slightly important and not important. The frequencies and percentages were computed as presented in Table 9.

Table 9: Knowledge sharing strategies

Strategies (n=253)	Very Important n (%)	Important n (%)	Moderately/ Slightly Important n (%)	Not important n (%)
Getting support from top management	184 (73.6)	55 (22.0)	10 (4.0)	1 (0.4)
Developing knowledge sharing policies	158 (63.5)	64 (25.7)	23 (9.2)	4 (1.6)
Fostering a knowledge sharing culture	171 (68.4)	71 (28.4)	7 (2.8)	1 (0.4)
Establishing a reward system	120 (48.0)	72 (28.8)	50 (20.0)	8 (3.2)
Embracing a learning organisation culture	159 (63.4)	81 (32.3)	9 (3.6)	2 (0.8)
Implementing communities of practice	130 (52.4)	82 (33.1)	32 (12.9)	4 (1.6)
Implementing an online knowledge portal	144 (58.1)	67 (27.0)	31 (12.5)	6 (2.4)

As indicated in Table 9, the most significant strategies for development practitioners included getting support from top management (n=184; 73.6%), fostering a knowledge sharing culture (n=171; 68.4%) and developing knowledge sharing policies (n=158; 63.5%). The most prevalent strategies echoed by the key informants were management support, developing knowledge sharing policies and implementing online portals.

Both quantitative and qualitative findings indicated that developing knowledge sharing policies was very important. These findings were comparable with the results of a study conducted in Ghana by Ofori-Dwumfuo and Kommey (2013), which investigated the use of ICT tools in knowledge management in the Ghanaian state organisation, Volta River Authority. That study used the SECI model of knowledge creation and found that support from top leadership, developing policies and integrating knowledge sharing with the organisational strategic plan was essential. The present study results were also congruent with a previous study by McNichols (2010) that explored strategies, processes, and methods for enhancing knowledge transfer. That study reported that support from management enabled the creation of a knowledge sharing culture.

The quantitative findings showed that fostering a knowledge sharing culture in an organisation enhances knowledge sharing. Surprisingly, the qualitative interviews with key informants did not show culture was a key knowledge sharing influencer. However, earlier studies suggested that a knowledge-centred culture is an important antecedent to knowledge sharing (Ajmal et al., 2010, Ferreira Peralta and Francisca Saldanha, 2014). This was also consistent with

previous observations that revealed a correlation between culture and knowledge sharing (Cavaliere and Lombardi, 2015).

It has been suggested that linking a reward system to the organisation culture could increase knowledge sharing (Durmusoglu et al., 2014). However, this did not appear to be the case in the present study, as almost half of the survey respondents were not in favour of a reward system. A reward system was also not supported in the discussions with key informants. However, previous research showed that intrinsic and extrinsic motivation predicted knowledge sharing behaviours (Tangaraja et al., 2015).

The survey results also demonstrated that implementing communities of practice was significant in the use of ICTs for extracting, sharing and disseminating knowledge. However, this was not recognised in the interviews with knowledge management experts. Earlier research by Pan and Leidner (2003) recommended the expansion of networks of practice as a strategic initiative. Although this was not supported by the key informants, a previous study showed that online environments can have direct or indirect effects on knowledge sharing (Charband and Navimipour, 2016).

In addition to the knowledge sharing strategies, the key informants identified some best practices for using ICTs to enhance knowledge sharing. Some of these best practices were collaboration, providing quality information, management support, using the latest technology and engaging knowledge management professionals. The most significant practices are reported in Figure 4.
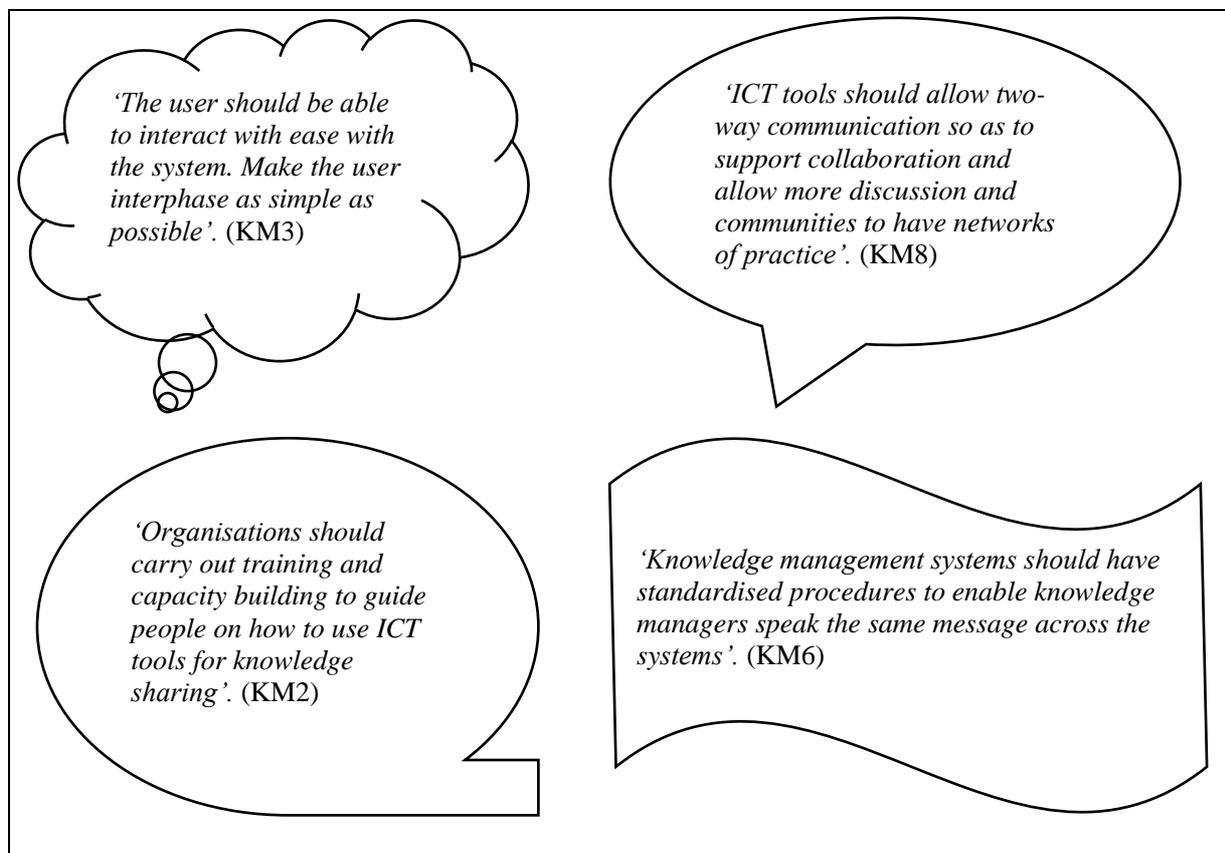

Figure 1: Best practices in using ICTs to extract, share and disseminate knowledge

5. CONCLUSION

In the knowledge sharing literature, several researchers such as Riege (2005); Ardichvili (2008), Chao et al. (2011); Fong Boh et al. (2013); and Zhang et al. (2017) have conducted studies to examine knowledge sharing enablers and obstacles, but mainly from the for-profit organisations perspective. Although both profit making organisations and not-for-profit organisations face similar knowledge sharing challenges, obstacles are specific to not-for-profit organisations (Quaggiotto, 2005). This paper makes contribution to the knowledge sharing literature, particular to the development sector by identifying specific knowledge sharing obstacles and enablers for development organisations.

The paper using mixed methods approach, examined three broad categories of obstacles and identified multiple subcategories that are commonly experienced in development organisations. The major categories are individual, organisational and technical challenges. Individual challenges that development practitioners encountered included: lack of time to share knowledge, low awareness of the benefits of sharing knowledge, difference in culture and lack of trust. Organisational barriers included: poor integration of knowledge sharing with organisational goals, poor organisational leadership, failure to reward and recognise knowledge sharing initiatives, lack of knowledge sharing culture and lack of management support. Technical barriers included: lack of integration of ICT systems, lack of technical support, mismatch between individuals' needs and ICT systems, lack of training and resistance to new technology.

The most significant enablers of knowledge sharing were culture, knowledge sharing strategy, strong social capital, inspirational leadership, motivating staff to share knowledge, high level of trust among staff, providing staff with training opportunities and establishing a reward system. A common view among the key informants was that creating a knowledge sharing culture would lead to successful knowledge sharing. The other factors included: having a knowledge sharing promotion strategy, rewarding those who shared knowledge, creating trust, embracing communities of practice, leadership support and creating awareness of ICT tools.

The results of this study suggest that knowledge sharing barriers affect organisations of all sizes. However, the manner in which the obstacles affect knowledge sharing differs slightly depending on organisation size. For example, lack of trust was identified as the most significant individual barrier in large organisations. On the other hand, fear that sharing knowledge may put jobs at risk was the most significant individual barrier in small organisations. Interestingly, lack of training on new ICT systems was identified as the most significant technical barrier in large organisations. For small organisations, mismatch between individuals' needs and integrated ICT systems was the most significant barrier.

While conducting this study, several gaps were identified. The population of this study was mainly development practitioners and knowledge management experts. A similar study could be conducted to compare the perceptions of professionals in other disciplines with those of development practitioners. The limitation of the online survey was the structured questions that forced respondents into specified response categories. This might have limited the respondent to the options provided, and locked out any other information that they might have intended to share that was not conceptualised in the questionnaire. However, the researcher combined the use of structured questions in the survey with in-depth individual interviews with key informants to help gain more information that might not have been captured in the questionnaire responses.

REFERENCES

Ardichvili, A. (2008). Learning and Knowledge Sharing in Virtual Communities of Practice: Motivators, Barriers, and Enablers. *Advances in Developing Human Resources,* 10**,** 541-554.

Ardichvili, A., Maurer, M., Li, W., Wentling, T. & Stuedemann, R. (2006). Cultural influences on knowledge sharing through online communities of practice. *Journal of Knowledge Management,* 10**,** 94-107.

Ardichvili, A., Maurer, M. & Wentling, T. (2005). Knowledge Sharing Through Online Communities of Practice: The Impact of Cultural Variations. *Online Submission.*

Asrar-Ul-Haq, M. & Anwar, S. (2016). A systematic review of knowledge management and knowledge sharing: Trends, issues, and challenges. *Cogent Business & Management,* 3.

Bloice, L. & Burnett, S. (2016). Barriers to knowledge sharing in third sector social care: a case study. *Journal of Knowledge Management,* 20**,** 125-145.

Bock, G.-W., Zmud, R. W., Kim, Y.-G. & Lee, J.-N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organisational climate. *MIS quarterly***,** 87-111.

Chang, Y.-S., Hsu, S.-F., Liao, C.-H. & Lin, S.-C. Knowledge sharing in online communities: Subjective norm, trust, media richness, and the individual's role in knowledge sharing. EdMedia: World Conference on Educational Media and Technology, 2013. Association for the Advancement of Computing in Education (AACE), 801-806.

Chao, C.-Y., Hwu, S.-L. & Chang, C.-C. (2011). Supporting Interaction among Participants of Online Learning Using the Knowledge Sharing Concept. *Turkish Online Journal of Educational Technology-TOJET,* 10**,** 311-319.

Chen, Y.-H., Lin, T.-P. & Yen, D. C. (2014). How to facilitate inter-organisational knowledge sharing: The impact of trust. *Information & Management,* 51**,** 568-578.

Cheung, C. M., Lee, M. K. & Lee, Z. W. (2013). Understanding the continuance intention of knowledge sharing in online communities of practice through the post-knowledge-sharing evaluation processes. *Journal of the Association for Information Science and Technology,* 64**,** 1357-1374.

Chiu, C. M., Wang, E. T. G., Shih, F. J. & Fan, Y. W. (2011). Understanding knowledge sharing in virtual communities: An integration of expectancy disconfirmation and justice theories. *Online Information Review,* 35**,** 134-153.

Collison, C. & Parcell, G. (2007). *Learning to fly: practical knowledge management from leading and learning organisations*, John Wiley & Sons.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*, Sage publications.

David, W. & Fahey, L. (2000). Diagnosing cultural barriers to knowledge management. *The Academy of management executive,* 14**,** 113-127.

Directory of Development Organisations (2011). *Directory of Development Organisations* [Online]. Available: http://www.devdir.org [Accessed 02/02/2017.

Dudovskiy, J. (2016). The Ultimate Guide to Writing a Dissertation in Business Studies: A step by-step assistance. *Research-methodology. net*.

Fetters, M. D., Curry, L. A. & Creswell, J. W. (2013). Achieving integration in mixed methods designs—principles and practices. *Health services research,* 48**,** 2134-2156.

Fong Boh, W., Nguyen, T. T. & Xu, Y. (2013). Knowledge transfer across dissimilar cultures. *Journal of Knowledge Management,* 17**,** 29-46.

Gururajan, V. & Fink, D. (2010). Attitudes towards knowledge transfer in an environment to perform. *Journal of knowledge Management,* 14**,** 828-840.

Hew, K. F. & Hara, N. (2007). Empirical study of motivators and barriers of teacher online knowledge sharing. *Educational Technology Research and Development,* 55**,** 573.

Hewlitt, A., Horton, D., Russell, N., Staiger-Rivas, S. & Lamoureux, L. (2005). Approaches to promote knowledge sharing in international organisations. *Knowledge Management for Development Journal,* 1.

Ho, L.-A., Kuo, T.-H., Lin, C. & Lin, B. (2010). The mediate effect of trust on organisational online knowledge sharing: An empirical study. *International Journal of Information Technology & Decision Making,* 9**,** 625-644.

Hsu, C.-P. (2015). Effects of social capital on online knowledge sharing: positive and negative perspectives. *Online Information Review,* 39**,** 466-484.

Huffaker, D. & Lai, J. Motivating online expertise-sharing for informal learning: The influence of age and tenure in knowledge organisations. Advanced Learning Technologies, 2007. ICALT 2007. Seventh IEEE International Conference on, 2007. IEEE, 595-599.

Jain, P. (2006). Empowering Africa's development using ICT in a knowledge management approach. *The Electronic Library,* 24**,** 51-67.

Jensen, A. (2005). A joint donor training approach to knowledge sharing. *Knowledge Management for Development Journal,* 1**,** 76-87.

Kipkosgei, F., Son, S. Y. & Kang, S.-W. (2020). Coworker Trust and Knowledge Sharing among Public Sector Employees in Kenya. *International journal of environmental research and public health,* 17**,** 2009.

Lee, J.-N. (2001). The impact of knowledge sharing, organisational capability and partnership quality on IS outsourcing success. *Information & Management,* 38**,** 323-335.

Lewis, D. (2010). Non-governmental organisations, definition and history. *International encyclopedia of civil society*, 1056-1062.

Li, G. & Li, Y. Knowledge sharing behavior in learning online communities: A social capital perspective. Management of Innovation and Technology (ICMIT), 2010 IEEE International Conference on 2-5 June 2010 2010. IEEE, 910-915.

Li, W. (2009). Online knowledge sharing among Chinese and American employees: explore the influence of national cultural differences. *International Journal of Knowledge Management (IJKM), 5*, 54-72.

Li, W. (2010). Virtual knowledge sharing in a cross-cultural context. *Journal of Knowledge Management, 14*, 38-50.

Li, W., Ardichvili, A., Maurer, M., Wentling, T. & Stuedemann, R. (2007). Impact of Chinese culture values on knowledge sharing through online communities of practice. *International Journal of Knowledge Management (IJKM), 3*, 46-59.

Lichtenstein, S. & Hunter, A. (2008). Toward a receiver-based theory of knowledge sharing. *Current Issues in Knowledge Management*, 86.

Loebbecke, C. & Myers, M. D. (2017). Deploying internal knowledge portals: three major challenges. *Information & Management, 54*, 491-505.

Ma, W. W. & Yuen, A. H. (2011). Understanding online knowledge sharing: An interpersonal relationship perspective. *Computers & Education, 56*, 210-219.

Ofori-Dwumfuo, G. & Kommey, R. (2013). Utilisation of ICT in knowledge management at the Ghana Volta River Authority. *Current Research Journal of Social Sciences, 5*, 91-102.

Ondari-Okemwa, E. & Smith, J. G. (2009). The role of knowledge management in enhancing government service-delivery in Kenya. *South African Journal of Libraries and Information Science, 75*, 28-39.

Pan, S. L., Hsieh, M.-H. & Chen, H. (2001). Knowledge sharing through intranet-based learning: a case study of an online learning center. *Journal of Organizational Computing and Electronic Commerce, 11*, 179-195.

Quaggiotto, G. (2005). Elective affinities? Reflections on the enduring appeal of knowledge management for the development sector. *Knowledge management for development journal, 1*, 41-45.

Qureshi, A. M. A. & Evans, N. (2015). Deterrents to knowledge-sharing in the pharmaceutical industry: a case study. *Journal of Knowledge Management, 19*, 296-314.

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of knowledge management*.

Ringel-Bickelmaier, C. & Ringel, M. (2010). Knowledge management in international organisations. *Journal of Knowledge Management, 14*, 524-539.

Saadatmand, M. & Kumpulainen, K. (2013). Content aggregation and knowledge sharing in a personal learning environment: Serendipity in open online networks. *International Journal of Emerging Technologies in Learning (iJET),* 8**,** 70-77.

Seliaman, M. E. Exploring the adoption of online discussion forums for knowledge sharing and social relations among virtual communities. Computer and Information Technology (WCCIT), 2013 World Congress on, 2013. IEEE, 1-5.

Sheng, M. & Hartono, R. (2015). An exploratory study of knowledge creation and sharing in online community: A social capital perspective. *Total Quality Management & Business Excellence,* 26**,** 93-107.

Srivastava, A., Bartol, K. M. & Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of management journal,* 49**,** 1239-1251.

Van Der Meer, R., Torlina, L. & Mustard, J. (2009). Knowledge sharing by organisations in sustainable development projects.

Xue, Y., Bradley, J. & Liang, H. (2011). Team climate, empowering leadership, and knowledge sharing. *Journal of knowledge management,* 15**,** 299-312.

Yunduan, F. (2011). Sharing tacit knowledge in online learning communities: obstacles and solutions. *Distance Education in China,* 3.

Zhang, X., Liu, S., Chen, X. & Gong, Y. (2017). Social capital, motivations, and knowledge sharing intention in health Q&A communities. *Management Decision,* 55**,** 1536-1557.