Knowledge Sharing in Financial Institutions to Assist with IT Service Management: A Thematic Analysis

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Abstract: The applications and services provided by financial institutions are important to individuals and economies. These applications and services are fragile because of service failures that are inherent in technology. The purpose of this article is to show how knowledge management can mitigate service disruption in financial institutions. By using bibliometric analysis and a structured literature review based on the PRISMA 2020 guidelines, we identified five major themes that drive knowledge management (KM) practices in information technology (IT) management in financial institutions. These themes identified are centered on the organizational environment, the motivation of employees, the people profile for example gender and race, and lastly the use of technology. By bolstering these KM practices in the IT service management (ITSM) of financial institutions we hope to shorten the time between system failures and shorten the actual time to repair failures. Knowledge management in IT management and especially ITSM is under-researched in financial institutions, and the KM themes identified provide some signposts to improved collaboration and better theorisation.

1 INTRODUCTION

Digital systems go down. The results range from mild irritation to catastrophic failure. In today's financial institutions most, interactions are through digital channels, be that the web, phone, or ATM. Invisible to the users are all the back-end systems that glue everything together and integrate the banking ecosystems of countries and the world (Khiaonarong et al., 2022; Klee, 2010; Merrouche & Schanz, 2010; Mishchenko et al., 2022).

It is not only a single financial organization that is prone to these types of outages but the financial ecosystem. For example, a system outage at a payment provider (that could be a bank or non-bank) is amplified in unexpected ways as the outage at one provider interacts with other providers as the technology outage ripples through the payment ecosystem. In worst-case scenarios, a cascading outage could cause significant parts of retail payment systems to shut down and eventually, that could harm the broader economy (Allen, 2021; Sillito & Kutomi, 2020).

System failures are not only mentioned in academic literature but also in popular literature. During black Friday in 2016, one of the payment providers to the largest online shopping portal in South Africa had an outage because of a high load. The payment processing was then passed to another bank as a fall-back mechanism. The new bank then had to process its payments, together with the payments of the original bank which caused a payment outage at the new bank. Eventually, the online platform had to shut down until these issues could be resolved (MyBroadband, 2017). Thousands of customers of Halifax, Bank of Scotland, and Lloyds were prevented from accessing their accounts for eight hours on New Year's Day 2020 because of a system outage. The system outages at financial firms have increased since a series of high-profile problems at companies like TSB and Visa in 2018. The UK Treasury also noted that there was an

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"unacceptable" level of IT failures among banks (Binham, 2020).

Software and hardware faults are inherent properties of computer systems. The huge complexity of software and hardware makes statistical outages unavoidable. Modern software consists of millions of lines of code and in many cases reaches a hundred million lines of code. (Domingos et al., 2021). Even though software complexity causes issues the main reason for software failure is change caused by human error. Sillito et al (2020) report that the major causes of software outages (in order of frequency) are deployments (software changes), infrastructure changes, exceeding scaling limits, and software and hardware failure. A major theme in their analysis is that incidents grow in scope as an initial failure cascades through a system exposing ways systems are not resilient to failure. (Sillito & Kutomi, 2020).

For clarity, an incident is when a software system experiences an outage or is degraded in functionality or performance, and engineers are notified to investigate and mitigate the problem. The work of the engineers in this context is seen as incident response. After the incident is resolved or mitigated a post-mortem is generally conducted (ISO, 2015; Sillito & Kutomi, 2020). The ISO 27043 standard divides the process into pre-incident response, during-incident response, and post-incident response. (ISO, 2015)

The current process frameworks that guide this in the financial sector are the IT Infrastructure Library (ITIL) and to a lesser extent Google's Site Reliability Engineering (SRE) framework (Langerman & Joseph, 2023). ITIL focuses primarily on processes and SRE on automation to reduce human error (Axelos, 2020; Beyer et al., 2016).

Both frameworks incorporate aspects of knowledge management, for example, ITIL 4 advocates for the capturing of knowledge at the source of an incident. This allows organizations to build a repository of institutional knowledge that may be of use for future incident resolution and problem-solving activities. Unfortunately, the implementation and use of the core knowledge management principles as outlined by the frameworks are limited.

In the context of the brief discussion of the frameworks guiding the financial sector, knowledge may be regarded as a strategic resource to assist managers and engineers in decision-making during the pre-incident, during-incident, and post-incident response cycle and can help mitigate the effect of an outage. Knowledge management can enhance the process of incident management, by ensuring the availability and accessibility of accurate and reliable information when required, through effective lesson learning (Ammirato et al., 2021). Ammirato et al (2021) and Seneviratne et al (2010) make the case for the importance of knowledge management during a disaster. Similarly, the researchers make the case in this paper for the use of knowledge management during an IT disaster or system outage. Despite the critical role of knowledge management in IT service management that can inform and enable decision-makers the literature on this is poor. Service management is addressed in IT journals but only marginally addressed by the knowledge management fraternity. A significant exception to this is the work of Baradari et al. (2023) which focus specifically on the role of knowledge management in ITIL. ITIL as a methodology is not specific to any industry but covers service management across all information technology industries.

As literature on the overlap between knowledge management, service management and information technology is so scant we restricted our literature survey to that of knowledge management and information technology in financial services. As service management is a subset of IT management (MacLean & Titah, 2023), this broadening makes sense for this research project.

1.1 Knowledge and the Sharing of Knowledge

The Merriam–Webster dictionary defines knowledge as "fact or condition of knowing something with familiarity gained through experience or association". For this research, two types of knowledge may be identified, i.e., tacit knowledge and explicit knowledge.

According to Polanyi, (1967) in Khan and Zaman (2020:2), "Tacit knowledge is embedded in the minds of people, accumulated during their career through experience, and is only visible through their actions…the other type is explicit knowledge which exists in written or other transferrable form". Some examples of explicit knowledge dimension are any form of knowledge that is in a written form, like policies, organizational strategies, operating procedures, vision, and mission statements with related rules governing them.

It should be noted that capturing and sharing explicit knowledge is deemed easier than capturing and sharing tacit knowledge. The capturing of explicit knowledge usually takes the form of a simplified and structured approach. The management of the two types of knowledge results in the concept of knowledge management.

Asrar-Ul-Haq & Anwar, 2016; Yeboah, 2023 in Kim and Hang (2024:1) state that "One essential element of the knowledge management system is knowledge sharing." For this research, knowledge sharing may be defined as the process of both internal and external transfer of both tacit and explicit knowledge for decision-making to ensure the longevity and profitability of the organization. The aforementioned is confirmed by Abbas, Hussain, Hussain, Akram, Shaheen, and Niu (2019:2) stating that "… knowledge-sharing strategies significantly influence a firm's success through their innovative performance processes." The aforementioned is echoed by Darroch and McNaughton (2003) in Alshwayat et al. (2021), stating that employing knowledge-sharing activities in an organization will create more creativity resulting in better economic performance, i.e. profitability.

Financial institutions are not exempt from the current economic climate and thus also be proactive in their stance to remain competitive in an ever-changing business environment. According to Abbas, Hussain, Hussain, Akram, Shaheen, and Niu (2019:2) "Realizing the importance of knowledge management, especially knowledge sharing, the banking sector has initiated the development of knowledge management (KM) teams in their institution."

2 METHODOLOGY

The current economic perspective is an economy based on knowledge, where individual, group, and societal existence are dependent on the use of and sharing of knowledge. Within modern-day organizations, knowledge sharing may be regarded as the new core capability that can increase the longevity of the organization as a provider of goods and services.

The main research question focuses on understanding the themes driving research in knowledge sharing, specifically in financial institutions, considering that these institutions and functions within the institutions are often characterized by individuals hoarding and not willing to share what they know.

To this end, the researchers adopted a pragmatic ontological stance, based on the practical application of the results of the study to achieve what Sekaran and Bougie (2013:30) coin as "intelligent practice".

As stated, pragmatism is the chosen ontological stance for the study and pragmatism may be attributed to Charles Sanders Peirce, the nineteenth-century American mathematician and logician. In an attempt to understand how researchers come to know, Jacobs (2010:725) postulates that "Peirce argued for abduction" as an epistemological assumption. Reichertz (2014:126-127) points out that the research activity starts when the researcher realizes that there is an imbalance between expectation and reality. The imbalance between expectation and reality can be described as the "surprise" factor, necessitating the researcher to de- and re-contextualize data and understanding about a specific phenomenon, and in so doing arrive at a new idea about the phenomenon under investigation.

The premise of this study is based on the fact that there is an imbalance between organizations' expected ability to manage knowledge sharing and the reality thereof. Abductive reasoning as an epistemological stance therefore makes sense in terms of this study.

The methodological assumptions focus on the process of research design. Kelemen and Rumens (2011) state that "by pragmatism's theoretical cornerstone, the pragmatist researcher is most likely to adopt research practices that will allow him/her to solve a practical problem efficiently". From the epistemological stance of the study, it is evident that the pragmatist researcher needs to be able to acknowledge all interactions between knowledge and action within a specific area of investigation. This research employed a systematic literature review approach, which is considered popular in qualitative research studies. The actual methodology employed in the review followed the PRISMA 2020 updated guideline for reporting on systematic reviews allowing for the reporting of "sufficient detail to allow users to assess the trustworthiness and applicability of the review findings (Page et al 202).

The protocol provides clear steps for the identification, screening, and inclusion of literature as part of the systematic literature review. Each of the following main points will be elaborated on:

- inclusion and exclusion criteria,
- the search strategy,
- The data sources, and
- the analysis and reporting elements.

2.1 Inclusion and Exclusion Criteria

The selection criteria identified in this section define what to include and what to exclude in the review of the sources. It should be noted that the inclusion and exclusion criteria aim to identify relevant research that will answer the main research question as postulated in section 2. The review was limited to scholarly peer-reviewed journal articles on the topic of knowledge sharing in the domain of financial institutions.

It should be noted that resources in the form of books, book chapters, and grey literature were not considered for inclusion in the review.

2.2 The Search Strategy

The identification of keywords and use of Boolean operators governed the creation of a search string that was used in searching for relevant sources to include in the review.

The search string used was:
((("knowledge sharing")) (Title) and ((("financial institution*")) or ((("bank*")) or ((("financial service provider*")) (All Fields) and ((("information technolog*")) or ((IT)) or ((system*)) (All Fields).

2.3 The Data Source/s

The search string as identified in section 2.2 was used to conduct a search for scholarly literature on the Clarivate Web of Science. The use of Clarivate Web of Science was deemed suitable for the database is a multi-disciplinary database covering a variety of different subjects within a large data range.

2.4 The Analysis and Reporting Elements

Applying the search string identified in section 2.2 yielded the following results (based on the Prisma 2020 protocol).

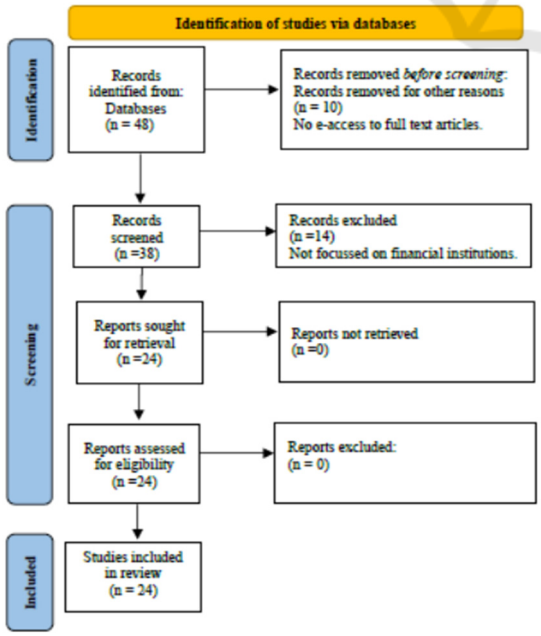

Figure 1: The analysis and reporting elements.

A total of 48 scholarly peer-reviewed journal articles were retrieved utilizing the identified search string. It should be noted that ten articles were removed before the screening process. The researchers did not have full-text access to the identified articles and were subsequently removed from the review process.

The resulting sources, i.e. the 38 articles were screened for inclusion in the review. Of the 38 articles, 14 articles were not deemed to fit into the review due to a lack of focus on knowledge sharing in financial institutions. The 14 articles were subsequently removed from the review.

The resulting 24 articles were downloaded and stored for further analysis.

2.4.1 Bibliometric Analysis of the Results of the Systematic Literature Identified

To position and enhance the relevance of the systematic literature review based on the Prisma 2020 protocol, the researchers conducted a bibliometric analysis of the results of the sources identified for inclusion in the review.

As identified in section 2.3, 24 scholarly peer-reviewed journal articles were identified for inclusion in the systematic literature review.

The researchers employed Bibliometrix, a powerful R package designed specifically for bibliometric analysis of sources. At its core, Bibliometrix analyzes three types of knowledge structures in the sources. These include:

- conceptual structure
- Intellectual structure, and
- Social structure.

Because Bibliometrix relies heavily on code commands a more user-friendly interface, i.e. Biblioshiny, which is an extension of Bibliometrix was employed to provide a more visual and interactive approach to the bibliometric analysis of the sources. Some of the main results of the bibliometric analysis are presented below:

Figure 2: Bibliometric overview of sources included in the review.

The most important findings from Figure 2 are:

- The sources included in the review cover a 10-year time frame, from 2014-2024
- 80 authors contributed to the topic at hand
- There is an average of 21.96 citations per article.

The annual scientific production per year during the said period reached a peak in 2021 with a total of five units produced. This is evident in Figure 3 below.

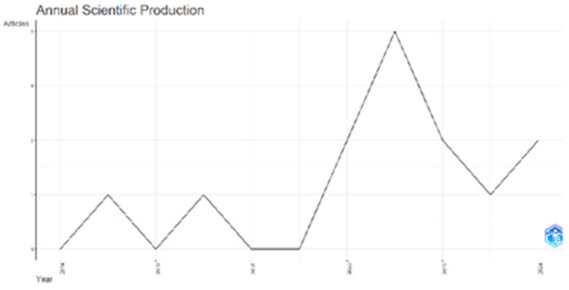

Figure 3: Annual scientific production.

The average article citations per year also followed a similar trend as in Figure 3, with peak citations in 2019 and 2021. These trends are illustrated in Figure 4.

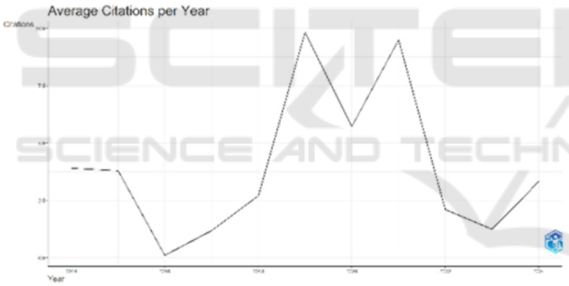

Figure 4: Average citations per year.

One of the most important elements to consider in a bibliometric analysis is the "vehicles" of dissemination of the research results, i.e. the sources of publications. The bibliometric analysis of the 24 articles revealed that the top 5 most relevant sources of publications are:

- Journal of Knowledge Management = 6 publications
- Employee relations = 2 publications
- Journal of Public Affairs = 2 publications
- Sustainability = 2 publications
- Applied Psychology – an International Review = 1 publication

When considering the countries where the scientific production originates from, it is interesting to note that Asia and India are the leaders in producing research on the topic.

A visual overview of the countries contributing to the scientific production on the topic is offered in Figure 5.

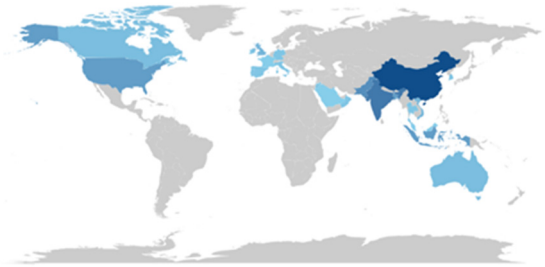

Figure 5: Countries' scientific production.

The following section will provide a discussion of the results of the systematic literature review.

3 ANALYSIS OF THE RESULTS

Out of the systematic literature review, five clear themes emerged. The themes are represented in Figure 6.

Figure 6: Results of the thematic literature review.

Each of the themes will be described in more detail to align the themes to answer the main research question as outlined in section 2.

3.1 Environment

The most prominent theme identified in the literature review is the creation of a suitable knowledge-sharing environment in financial institutions.
The driving concepts identified in this theme include but are not limited to:

- organizational attributes
- collaboration
- trust
- rewards

According to Kim and Hang (2024:2), the major catalyst for creating an environment fostering knowledge sharing is the organizational commitment and support towards creating such an environment for the staff members. Enwereuzor (2021) in Kim and Hang (2024:2) furthermore postulates that the commitment and support from organizational management be accompanied by elements and constructs such as diversity, respect, and engagement, specifically shown and driven by the management of the organization.

Abbas, Hussain, Hussain, Akram, Shaheen, and Niu (2019:2) extend the notion of organizational attributes to the extent that the organization should become a learning organization resulting in "…enhance knowledge sharing among employees within the organizations and empowering business firms to initiate critical actions and behaviors to gain the organizational settings to identify the real situation."

Gold et al (2001) believe that collaborations within the organizational environment should constitute interactions between the staff members of the organization. The authors furthermore state that collaboration is the result of open communication channels, participative activities, and interactions among the staff members.

This sentiment is echoed by Abbas, Hussain, Hussain, Akram, Shaheen, and Niu (2019:2) stating that "…new employees tend to develop relations with colleagues, creating a channel for knowledge sharing"

Von Krogh, Nonaka, and Rechsteiner (2012) believe that although management might create and facilitate an environment that enables collaboration, communication, and sharing of ideas, without trust in this collaborative space staff members will not be willing to share any knowledge. The lack of trust is highlighted by other authors including Bock et al., 2005, who states that a lack of trust in the organizational environment may be regarded as the main barrier to knowledge sharing and transfer.

Kim and Hang (2024:10) clearly state that although monetary and other rewards might not be a focal point for managers of knowledge, the impact thereof to stimulate the sharing of knowledge should not be underestimated.

3.2 Motivation

Motivation in terms of the literature reviewed may be considered as a descriptive concept, defining motivation within the construct of knowledge, knowledge sharing, and the environment. Nguyen and Malik (2022:1987) state that "motivation theorists posit that motivation drives employees' behavior"

The driving concepts identified in this theme include but are not limited to:

- Organizational motivation and strategies
- individual motivation
- emotional intelligence

Organizational motivation and strategies are driven by the formulation, implementation, and management of performance appraisals.

Fong et al (2011) in Gillani, Iqbal, Akram, and Rasheed (2017:180) believe that the use of performance appraisals may be regarded as positive reinforcement to shape the behaviors of the staff members of the organization. If knowledge sharing is defined as a key performance area and indicator, can contribute to staff members' improved performance in this specific area and contribute to the organizational environment and culture of sharing of knowledge.

It should be noted that the use of performance appraisals should be handled with great care and responsibility. According to Currie and Kerrin, (2003) in Gillani, Iqbal, Akram, and Rasheed (2017: 180) performance appraisals can hamper and choke the sharing of knowledge within the organizational context because there might be conflicts between the different individuals, and functional departments, and or sections in the organization.

One way to mitigate the negative impact of performance appraisals is to ensure that fair feedback is provided to the staff members thus strengthening the desired outcomes (Gillani, Iqbal, Akram, and Rasheed, 2017:180).

Motivation on an individual level is very closely related to organizational motivation. The literature reviewed for this research indicates that individual motivation is influenced and defined by various intrinsic and extrinsic factors.

When considering the intrinsic factors, it is important to note that each staff member's intrinsic motivation will differ based on their frame of reference, i.e. background. Furthermore, the literature indicates that intrinsically motivated staff members are more prone to sharing knowledge for the satisfaction it brings to the education of others.

Sathitsemakul and Calabrese (2017:81) identified the following examples of intrinsic factors:

- interpersonal trust,
- organizational commitment,
- and self-efficacy.

In contrast to intrinsic motivation, extrinsic motivation may be defined when external reasons

drive an individual to perform a specific task. These reasons include but are not limited to:

- reward in any form,
- negative consequences or punishment,
- to increase individual self-worth and importance,
- or goal-orientated.

It should, however, be noted that according to Muqadas et al. (2017) in Kim and Hang (2024:2) believe that an over-emphasis on rewarding extrinsic motivation does not necessarily stimulate knowledge-sharing activities within the organizational context.

Emotional Intelligence (EI) may be regarded as a very important motivating factor. Sathitsemakul and Calabrese (2017:82) indicated that emotional intelligence "…is the ability to perceive emotions and cognitive processes such as reasoning with emotions, understanding their meaning, assimilating and locating relationships between the emotions". Research indicates that EI can potentially influence both the intrinsic and extrinsic motivation of staff members. It should be noted that EI has proven to develop individual motivation which influences knowledge-sharing behavior Sathitsemakul and Calabrese (2017:82). Shyh et al., (2006) contend that EI has the ability and impact to raise the propensity to share knowledge even if the individual is reluctant to do so.

3.3 People

Inkpen and Tsang, (2005) state that in essence an organization and more specifically financial institutions may be regarded as a social network where the organizational hierarchy will influence the social capital, i.e. the staff members. According to the authors, it is the social capital of the organization that underpins all knowledge-sharing activities and exchanges and the communication thereof.

The driving concepts identified in this theme include but are not limited to:

- profile
- gender

An interesting observation from the systematic literature review, reveals a close relationship to individual staff member profiles and knowledge sharing. Abbas, Hussain, Hussain, Akram, Shaheen, and Niu (2019:2) state that "qualifications, work experience, working relationships, and individual income might meaningfully impact knowledge sharing, motivation, and willingness" .

In addition to the initial observations from Abbas et al (2019), it should also be interesting to note that staff members with little job experience and staff members with an established and a "...greater professional level..." will have a higher propensity towards knowledge sharing activities.

Although most of the academic literature about knowledge, knowledge management, and knowledge sharing perceives that the activity of sharing knowledge is a gender-neutral activity, research suggests a negative imbalance towards female knowledge-sharing activities. According to Colley, 2003; Meelissen and Drent, 2008; Volman et al., 2005 in Nguyen and Malik (2022:1997) this imbalance may be attributed to assumed higher levels of technology anxiety among women. This assumed technological anxiety will impact of perceived usefulness of knowledge-sharing activities using knowledge-sharing online platforms in the organizations resulting in less knowledge being shared.

3.4 Technology

As alluded to in the introduction, (section 1), technology, specifically in the financial sector, plays a mission-critical role in facilitating financial transactions. The researchers would even state that no financial transactions in the current hyper-connected business environment will be possible without the use of the information technology backbone. The nature of the review did not focus on specific elements, specifications, or requirements of technology, but rather on what basic features or characteristics will enhance the use of technology for knowledge sharing.

In considering and analyzing the literature from a financial institution perspective the following main technological agnostic themes that drive research in technology were identified:

- online platforms
- human sensory feedback system

Nguyen and Malik (2022:1986) state that "…online platforms in an organization refers to using social networking, intranet, and other platforms to enhance knowledge sharing via communication and collaboration." It should be noted that the online platforms and integration of applications via the platforms (for example the Internet) form the backbone of all interaction and communication in modern business. Financial institutions are not exempt from the use of online platforms in every form or protocol, with more and more emphasis on the integration of Artificial Intelligence (AI) as an advanced communication and workflow platform.

The authors contend that the use of AI and AI-enabled technologies has resulted in a higher level of management of people, experiences, and talent

management specifically within the financial sector. Thus, it may be deduced that AI and the related technologies on the agnostic platforms are not only used for knowledge sharing, but without said agnostic platforms knowledge sharing cannot happen.

An interesting theme emerged from the systematic literature review on knowledge sharing in financial institutions, with specific reference to technology, i.e. the delicate interplay between human information processing and technology. According to Chen, Ye, and Huang (2022:1) "Knowledge-sharing through ICT is a form of computer-mediated communication (CMC)." Scholl et al., 2020 in Chen, Ye, and Huang (2022:1) think that the notion of CMC provides a substantial advantage of communicating across vast distances but limits the sensory feedback for humans in this communication process.

According to Freitas-Magalhaes (2020) in Chen, Ye, and Huang (2022:1) sensory feedback may be defined as the non-verbal cues that humans add to the communication process, i.e. facial expressions, body language, or changes in emotions.

The non-verbal communication cues may be regarded as an essential part of the knowledge-sharing process, specifically in the financial sector. A lack of sensory feedback in this context may leave the communicating partners with a lack of trust in the communication process and what is shared in the communication, i.e. the knowledge that should be transferred. "Consequently, this situation constrains knowledge-sharing, leading to poor resilience". Chen, Ye, and Huang (2022:3).

A possible solution to the sensory deprivation issue that is a by-product of the use of current-day technology, is the incorporation of the notion of a virtual world, a metaverse, using a combination of Artificial Reality, Virtual Reality, and Artificial Intelligence elements.

4 CONCLUSION

Considering the main research problem as discussed in section 2, i.e. understanding the themes driving research in knowledge sharing, specifically in financial institutions, considering that these institutions and functions within the institutions are often characterized by individuals hoarding and not willing to share what they know, the systematic literature review conducted, yielded the following main themes, i.e. environment, motivation, people and technology.

The authors further analyzed each of the main themes to understand the concepts in each of the elements and their link to the notion of sharing knowledge in financial institutions, with specific emphasis on the use of technology.

The resulting analysis revealed that the concepts of organizational attributes, collaboration, trust, and rewards drive the research in terms of the environment. In summary, the management of organizations and more specifically the financial sector should create and maintain an environment that allows for the alignment of organizational and personal objectives, while fostering collaboration between staff members, based on mutual trust. This environment should be driven by a combination of both monetary and non-monetary rewards.

The next main theme identified by the researcher was that of motivation, i.e. what drives an individual staff member to participate in knowledge-sharing activities. The main concepts driving the theme of motivation are organizational motivation and strategies, individual motivation, and emotional intelligence.

Motivation may be regarded as one of the fundamental drivers of knowledge sharing within financial institutions. Organizations should endeavor to align organizational objectives with staff member motivation, both on an intrinsic and extrinsic level. Extending the notion of intrinsic and extrinsic motivation, the literature revealed that both factors may be influenced by the individual staff members' emotional intelligence. It is postulated that individual staff members with a higher EI will have a greater propensity to share knowledge within the organizations with specific reference to the financial sector, employing highly intellectual capital.

When considering the theme of people in the analysis of the literature, two interesting concepts in terms of knowledge sharing in financial institutions were identified, i.e. profile and gender.

According to the literature, the profile of the individual staff member within the financial institution will be a good indicator of the individual's willingness to participate in knowledge-sharing activities. The profile of the individual staff member refers specifically to the individual's qualifications, work experience, working relationships, and individual income.

Although knowledge sharing is considered a gender-neutral activity, some research suggests that there might still be some imbalance in the use of technology by females to share knowledge.

The final theme identified relates to technology and its use in financial institutions for knowledge-sharing purposes. The researcher identified two concepts that are deemed important considerations in

driving research in this specific theme, i.e. online platforms and human sensory feedback systems.

The two concepts, as identified in the literature are closely related. The online platforms provide the necessary backbone to support daily activities with a specific emphasis on communication. Although the platforms provide and facilitate communication and connection over great distances, they cannot provide essential sensory feedback that allows individual staff members to trust the communication and knowledge-sharing activity.

Visually the results of the analysis may be presented in figure 7.

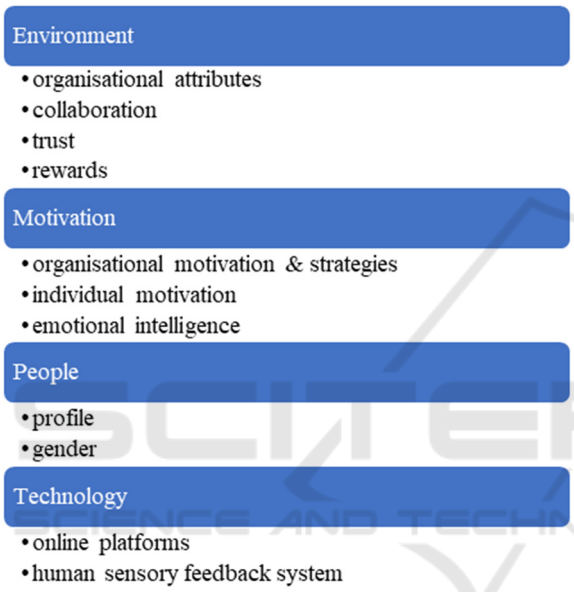

Figure 7: Conclusion of the study.

The constant changes in Information Technologies and the necessity for managing them especially in financial institutions, ITSM would benefit from KM to address the demands of the fourth industrial revolution.

The following section will provide an overview of future research directions.

5 FUTURE RESEARCH DIRECTIONS

The researchers propose that the identified themes be tested and confirmed in a financial institution. The test and confirmation should focus on institutions in both developing and developed countries. The results of the proposed future research should then be extrapolated to other sectors and environments.

ETHICAL CONSIDERATIONS

Ethical clearance for the proposed research was reviewed by the School of Consumer Intelligence and Information Systems Research Ethics Committee of the University of Johannesburg. Ethical clearance was granted with ethical clearance code 2024SCiiS011, with a rating CODE 01(Approved).

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