
Knowledge sharing in the banking sector: a systematic literature review and research agenda

Darci de Borba*, Marcirio Silveira Chaves and
Mírian Oliveira

Pontifical Catholic University of Rio Grande do Sul – Business School,
Ipiranga 6681 – Building 50 – Partenon,

Porto Alegre – RS, Brazil

Email: darci17@gmail.com

Email: mschaves@gmail.com

Email: miriano@pucrs.br

*Corresponding author

Abstract: Knowledge sharing (KS) has been gaining the attention of researchers, including the banking sector, for decades. Current research on KS in this sector covers various sources and repositories, making a systematic literature review necessary for a better understanding of the subject. The aim of this article is to understand how studies on KS in the banking sector are characterised. This research contributes to the literature in three ways: 1) it characterises the studies on KS in the banking sector; 2) it presents new insights into KS in the banking sector, for example the influence of digital media, hypercompetitiveness, the hiding of knowledge, and social, structural and technological factors in KS; 3) it proposes a research agenda to investigate constructs aligned to the recent changes in the banking sector.

Keywords: knowledge sharing; banking sector; knowledge management; systematic literature review.

Reference to this paper should be made as follows: de Borba, D., Silveira Chaves, M. and Oliveira, M. (2022) ‘Knowledge sharing in the banking sector: a systematic literature review and research agenda’, *Int. J. Knowledge Management Studies*, Vol. 13, No. 1, pp.55–70.

Biographical notes: Darci de Borba is a PhD student in Business Administration at UNISINOS and a Master in Business Administration from PUCRS. He has research interests in knowledge management, organisational learning, leadership, organisational behaviour and fintechs. He specialises in corporate education management and corporate finance. He graduated in business administration. He acts as general manager in the banking segment and as a business consultant. He has experience in the areas of private and public management, working mainly in strategic planning, budgeting, team development and business plan.

Marcirio Silveira Chaves is an Associate Professor in the Business School at the Pontifical Catholic University of Rio Grande do Sul (PUCRS), Brazil where he leads the research group Managing Projects and Information Technology – MProTech. He holds a PhD in Informatics at the University of Lisbon, Portugal. His areas of interest in teaching and research are project management, information systems, social media, and knowledge management. He has supervised 17 master’s students. His research accomplishments have been published in over 100 peer-reviewed papers with more than 1,300 citations in reputed outlets and conferences. His current h-index is 19.

Mirian Oliveira is a Professor and researcher at the Business School, Pontifícia Universidade Católica do Rio Grande do Sul (PUCRS), Brazil and an Invited Professor at the Lisbon School of Economics and Management, Universidade de Lisboa, Portugal. She obtained her Doctoral in Business Administration from the UFRGS in 1999. Her current research interests include knowledge management, knowledge sharing, knowledge hiding, knowledge hoarding and research method. Her research on these topics has been published widely (e.g., in *Journal of Knowledge Management*, *Knowledge and Process Management*, *Computers in Human Behaviour*, and *Journal of Business Research*).

1 Introduction

The digital transformation is a trend, companies are forced to adapt to the changes imposed by emerging technologies and new demands from users and consumers (Alsafi and Fan, 2020). The ability to understand and predict such changes is important to guide the processes of planning, implementing and evaluating business decisions (Omar et al., 2017). In the financial services market, which is considered relatively conservative, external pressure is reinforced due to the performance of financial technology start-ups (fintechs). They threaten to occupy the space left by banks guided by a traditional model, which does not keep up with the agility and customisation of start-ups (Klus et al., 2019). In this sense, some paths, such as the alliance between start-ups and traditional banks, have proven to be a viable alternative for sharing knowledge and converging the goals of both sides (Klus et al., 2019).

Knowledge management (KM) has emerged as an objective to help organisations use knowledge in a more productive way (Hosseini et al., 2014). Efforts to encourage the behaviour of sharing knowledge are considered to be critical components of KM. The offer of opportunities for mutual learning, the promotion of best practices and a reduction in the costs of redundant learning are aspects associated with the sharing of knowledge and skills among workers (Chennamaneni et al., 2012). Knowledge sharing (KS) has become one of the most widely researched processes in the literature, with the factors that can facilitate or inhibit KS already identified. One of the currents identifies such critical factors as: ownership of shared knowledge, beliefs and attitudes, individual motivation and culture (Liao et al., 2012; Rasoulinezhad, 2011; Rao and Kumar, 2011; Uğurlu and Kizildağ, 2013; Pinjani and Palvia, 2013). Another current point to a combination of multiple factors (Islam et al., 2012), for example the theory of social capital, which brings together three dimensions: relational, structural and cognitive (Nahapiet and Ghoshal, 1998). Among the factors that affect KS, a point discussed in the literature involves the perception of the cost of affective commitment related to the investment in trust in the relations between colleagues for KS. Casimir et al. (2012) seek to understand whether a direct relation exists between affective commitment and KS, and whether the relation can be moderated by the affective trust between colleagues.

Academic interest in banking business models was renewed in the banking sector after the last financial crisis. The rise in payment default and by the banks in the eyes of customers are aspects that created unprecedented managerial challenges in the banking sector (Esteban-Sanchez et al., 2017). Armed with the recognised aggressivity of the sector, which seeks to reach and maintain the profitable levels that characterise it, banks are betting on knowledge as an asset with the potential to furnish solid competitiveness

(Tan et al., 2010). In this sector, KS and the use of knowledge have great significance, but an indirect effect, though these processes are contributing to the improvement of innovation in the banking sector (Nawab et al., 2015).

In the field of strategic alliances, these should be composed of relations of cooperation and trust, considering the need for KS, which is well worth the effort, since strategic alliances have shown positive relations with profitability. However, it is advisable to use secondary data of financial demonstrations to analyse the influence of strategic alliance on profitability and on the development of banking business (Wahyudi, 2014). Alliances with start-ups are a new phenomenon in this field, the topic of banking and financial alliances is highly relevant in practice and science. The practical implications include identifying the motivations that precede an alliance, identifying potential synergies and conflicts of interest (Klus et al., 2019). Gewald et al. (2019) argue that innovation is based on the exchange and combination of different types of knowledge, declaring that existing assets must be recombined to create innovation and human beings are the agents of this recombination. It turns out that when traditional banks get involved with fintechs, they make use of a complete set of options to obtain innovation that bring with them distinct characteristics, including specific advantages, disadvantages and effects in relation to innovation and knowledge transfer. The investigation into the interference of Social Capital (SC) on KS has permeated the field of strategic alliances, whose SC can generate influence in the fusion of various elements. The influence of SC takes place through trust and commitment when it comes to strategic alliance.

The authors decided to restrict the focus to banks because of the importance that they hold in the world economic scenario. Such importance was triggered by the collapse of the Lehman Brothers bank, which, although there may have been several reasons for the company's failure, was largely caused by the housing crisis in 2008. However, the company itself was one of the many factors that contributed to the economic collapse of 2008, being pointed out by many experts as the catalyst for the collapse in the banking sector (Sraderssep, 2018).

Considering the need for alliances between traditional banks and fintechs to face the pressure for digital transformation, the objective of increasing knowledge productivity and efforts to encourage KS, the need for KS in banks is growing. Therefore, an investigation into the main contributions of KS research in the banking sector seems to be timely. To analyse the contributions of KS research in the banking sector, we propose the following research questions: RQ1: How is research into KS in the banking sector characterised?

- RQ1.1 What are the methodological approaches adopted to investigate the problems of research into KS in the banking sector?
- RQ1.2 What are the main variables used in articles on KS in the banking sector?
- RQ1.3 What are the theories used in the banking sector research?
- RQ1.4 What are the problems and main findings on KS in the banking sector?
- RQ1.5 What is the research agenda proposed in the articles on KS in the banking sector?

The answer to these research questions will allow the following academic and managerial contributions to be made:

- 1 Understand whether the variables studied in the banking sector are up to date with the new challenges listed.
- 2 Assess whether the proposed models are capable of explaining the relationships between constructs in the context of banks.
- 3 Identify potential research gaps to increase research on the topic.
- 4 Propose a research agenda for KS in the banking sector. The term ‘construct’ is used in this article to identify a variable or a set of variables.

2 Method

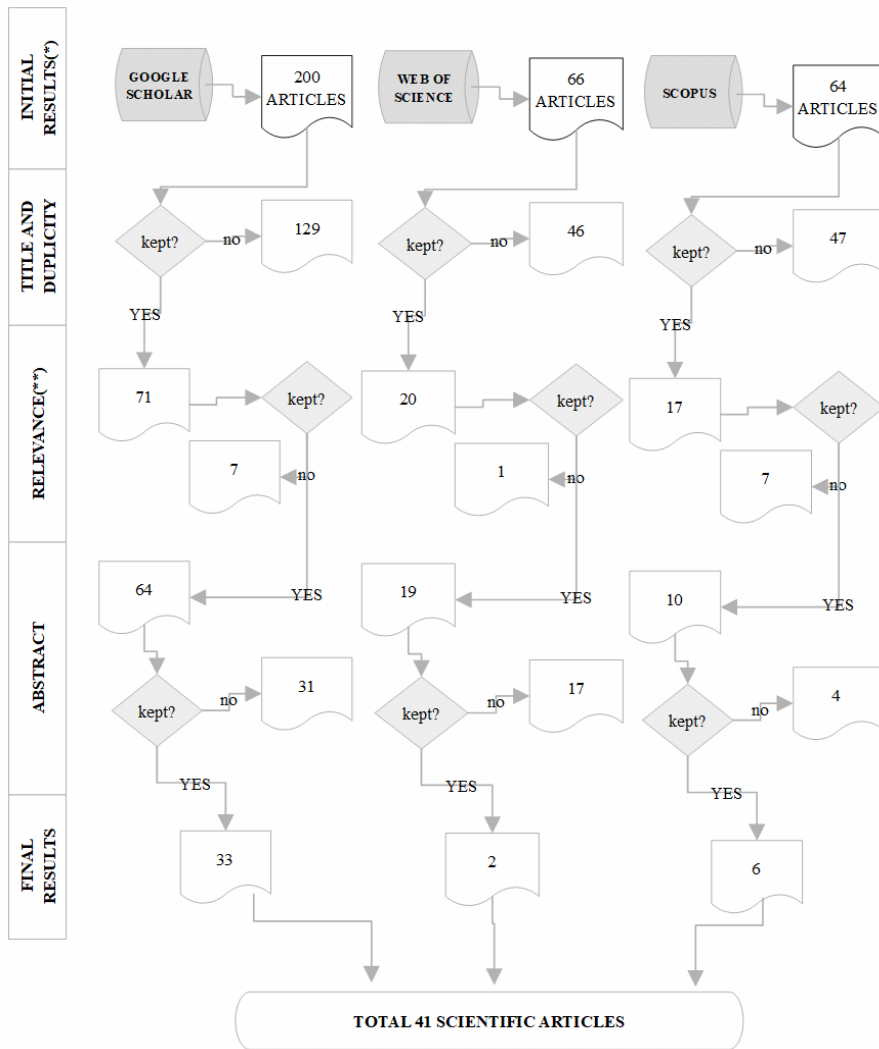
To investigate what research there is on KS related to the context of the banking sector, we analysed scientific production in periodical indexes. The method utilised was a systematic literature review which, inspired by the work of Wolfswinkel et al. (2013), was carried out in three stages:

- 1 systematic search
- 2 systematic analysis of the literature
- 3 content analysis.

The scientific repositories Web of Science, Scopus and Google Scholar were used for the search through the articles. The English terms ‘KS’ and ‘banking’ were used in the search, keeping the words between inverted commas to restrict the results. The results were limited to publications from 2010 onwards and only studies in article format were considered. Document search on Scopus covered the following fields: article title, abstract and key words. In Web of Science, a basic topic search was utilised, which restricts the search to title, abstract and key word fields. Selection in the Google Scholar Indexer was carried out manually by title due to the lack of advanced filter tools.

Figure 1 represents the flowchart of literature review activities. Adding together the results from the three databases, 330 articles were found, 200 in Google Scholar, 66 in Web of Science and 64 in Scopus. We removed duplicated articles, keeping a record of the repository with the highest number of citations. This procedure resulted in a greater base of articles from Google Scholar compared to the other repositories. We carried out selection by title of publication, removing from the base those that were unaligned with the research aim, leaving a total of 107 articles. 66 articles were eliminated from this total after reading the abstract, leaving a total of 41 articles for analysis. The eliminated articles adopted a focus distant from the proposal of this research, such as: radical innovation, KS in open communities, KS between members of on-line business communities, perceptions of individual technology users and their relation with KM, motivation for use of a knowledge repository, impact of KM on risk management, KS on social media, as well as those that directed studies outside the banking sector.

Figure 1 Literature review flowchart



Notes: *The search parameters used were ‘KS’ and ‘banking’, between 2010 and 2019, only articles published in scientific journals.

**The article was considered relevant when: the Journal’s H index was greater than 10, except for articles with more than five citations; for articles published until 2015, the number of citations should be greater than or equal to 5.

Utilising a qualitative and exploratory approach, as in Malhotra (2001), we sought to identify the main focuses and variables analysed in the articles published in which the relation between the themes KS and banking was explored. In this way, the main insights were related regarding the research question. Using recommendations by Bardin (2006) for content analysis, the findings were codified and categorised according to their nature.

3 Results analysis

The results analysis permeated both the quantitative and the qualitative data in the articles. A spreadsheet was used to obtain direction regarding the information that should be sought. The columns were related to their respective research questions.

- (RQ 1.1) methodology
- (RQ 1.2) variables
- (RQ 1.3) theories
- (RQ 1.4) research problem/research question/objective
- (RQ 1.4) main findings
- (RQ 1.5) further works
- (RQ 1.5) limitations.

3.1 *Distribution and relevance of the publications*

As mentioned, one of the article selection criteria was academic relevance. This was measured by the number of citations of the article and/or by the Scimago H-Index. Consequently, this systematic literature review (SLR) concentrates on articles published in the main periodicals in diverse areas of knowledge. The publications are taken from 34 different periodicals from 18 areas of knowledge. The main magazines with more than one publication within the scope of the research are: *Journal of Knowledge Management* (5), *Journal of Knowledge Management Practice* (2), *Electronic Journal of Knowledge Management* (2) and *Management Science Letters* (2). The relevance of the articles used in this SLR was attributed according to the H-index and/or the number of citations. To illustrate the characteristics of the texts in relation to these variables, the data are described statistically. In the case of the H-index, the following data were obtained in the sample: median 58.37, highest index 162 and lowest index 4. Regarding the number of citations, the following data were obtained: median 45.07, mode 11 and standard deviation 60.17.

3.2 *Methods used in the articles*

This section answers the following research question: *RQ1.1: what are the methodological approaches adopted to investigate the problems of research into KS in the banking sector?*

There is a predominance of empirical studies (88%) in the group of articles researched, with 63% of the total of articles being of a quantitative nature, using the Survey method. The approaches used were descriptive in the majority of the articles (70%) and exploratory in the others (30%). The level of analysis was predominantly micro in the majority of articles analysed (68%), followed by middle at 27% and macro at 5%. Just two of the sample studies are longitudinal, with the others cross-sectional. The samples present a median of 180 and an average of 543.33, considering three outliers of 8, 5.306 and 5.587. If we remove the outliers, the average is 212.25. As for data analysis,

considering that most of the sample used quantitative methods, the most used analysis methods were correlation (11), Cronbach’s alpha (9) and content analysis (5).

3.3 Variables studied

This section answers the following research question: *RQ1.2 what are the main variables used in the articles on KS in the banking sector?*

Among dependent variables in the study we found performance as the main choice, followed by KS and innovation. Banks work in a context of extreme competition, choosing access to information and the creation of knowledge as the main competitive resources (Gangi et al., 2019). Consequently, adopting this more pragmatic view, the studies related in the SRL reveal the interest of the sector in measuring the influence that KS can have on company results. KM has a positive impact on organisational performance, above all when we analyse the process of KS (Ahmed et al., 2015).

In their study on KM and Innovation, Nawab et al. (2015) also concluded that such KM processes as storing, sharing and the use of knowledge have a significant impact on the banking sector and contribute to the improvement in innovation in this same sector.

In the face of technological advances, KS is an important tool for service organisations. A lack of KS makes it more difficult for organisations to survive in a competitive global environment (Islam et al., 2011). Table 1 relates the main variables studied in the articles and the frequency of each type of variable.

Table 1 Types of variables studied and their frequency

<i>Variables most used in research</i>	<i>Total</i>	<i>Independent</i>	<i>Dependent</i>	<i>Mediating or moderating</i>
Knowledge sharing	16	2	9	5
Performance	13	0	11	2
Culture	9	7	1	1
Innovation	9	0	6	3
Trust	9	4	0	5
Others	30	21	2	7

3.4 Theories

This section answers the following research question: *RQ1.3: what are the theories used in the banking sector research?*

For purposes of analysis, the term ‘theory’ was used to designate knowledge consolidated in the literature. On analysing the use of theories, we noticed that a great part of the articles (31%) did not make use of any structure already consolidated; the three most used theories were: knowledge-based view (KBV) (4), social capital (4), social exchange (4) and multiple criteria decision making (2). These structures usually appear as related to the theme of KM. The theory of absorptive capacity, which was used very little by the articles analysed, usually appears associated with research focused on innovation. Other theories were also used by just one of the articles as follows: leadership theory, share capital, social dilemma, emotional intelligence, social intelligence, transactional memory theory and banking knowledge management model (BKMM).

3.5 Research problems and findings on sharing knowledge in the banking sector

The analysis of the articles in this SLR allowed for the categorising of research problems involving KS in the banking sector in the three traditional KM dimensions: people, processes and technology. This section answers the following research question: *RQ1.4: what are the research problems and main findings on KS in the banking sector?*

During the analysis of the articles that comprise this SLR, we noticed that some works had a similar direction and therefore we grouped the analysis of research structures according to the focus of the study. Formed by patterns of interaction between people, technologies and processes, KM involves methods to obtain, generate, organise, share and transfer knowledge. When it was proposed, the focus of KM was to help organisations to use knowledge in a more productive way (Hosseini et al., 2014). We therefore divided the following analysis according to the KM pillars: people, processes and technology.

3.5.1 People

The literature on KS in the banking sector has concentrated principally on the role of people in the success of KM, given the relation of dependence that exists in the willingness of people to share their knowledge (Hosseini, et al., 2014). In this sense, the search for a model that explains the relations between variables related to people and their influence on KS in banking and insurance sectors in Taiwan stimulated the investigation of the relations between organisational culture, knowledge acquisition, organisational learning and organisational innovation by Liao et al. (2012). The research results indicated that organisational learning serves as a partial mediator between organisational culture and innovation. In addition, this article discovers that organisational culture affects organisational learning and innovation through the acquisition of knowledge.

The social and relational factors between teams in financial institutions were studied from different perspectives. The relation of hypercompetition and transactive memory in KS and in performance was investigated by Tsai et al. (2016). The researchers found indications that hypercompetition moderates the relation between KS and bank performance in a negative way. Investigating the perception of the cost of affective commitment related to the investment in trust in the relations between colleagues for KS, Casimir et al. (2012) sought to understand if there is a direct relation between affective commitment and KS, and if the relation can be moderated by affective trust between colleagues. It was possible to identify that an indirect relation exists between affective commitment and KS via the perceived cost of KS.

The effects of collaboration to supply the banking system with the information that will make for an increase in access to credit were the gap studied by Peruta et al. (2014). They developed in theory the idea that the intangible value of collaboration between companies and the banking system can influence the probability of payment default on the part of companies and therefore their classification. The existing gap in research that helps to understand how trust and commitment can help to build a strategic alliance between Islamic banks and the Baitul Maal Wa Tamwil (BMT) helped Wahyudi (2014) to illustrate theoretically and empirically the decision and the result of the strategic

alliance between BMT and the Islamic banks as a relationship based on trust, mutual reliability and commitment.

In an attempt to explain and test empirically the dependence of organisational processes related to knowledge of the nature on the presupposed operatives in human resource management (HRM) processes in organisations, the authors Figueiredo et al. (2016) proposed the intersection analysis of HRM and KM. The results gave support to the proposed model and showed the predictive capacity of HRM practices in relation to KM processes, revealing a strong direct relation between the two constructs.

3.5.2 Processes

Regarding processes, the literature on KS in the banking sector has researched models of evaluation that explain the influence of the factors of KM on organisational processes. Because it is a pillar that envisages a wider, multifaceted ambit, the perspective of the process covers more wide-ranging research, analysing the other KM processes, given the difficulty in isolating the analysis exclusively in KS.

In an attempt to understand the real application of KM in a banking institution, Cebi et al. (2010) questioned the relations existing between the benefits acquired from the application of KM and their impact on organisational performance. Exploring the dimensions knowledge activities performance, process performance, employee performance, market performance and organisational performance, they were able to conclude that the relation between performance and KM is significant and they are positively related. It is also suggested that a mediation model for KM results be created.

Elements of organisational culture were the target of interest for researchers in Bangladesh. For Islam et al. (2011), cultural elements can affect KS in an organisation. They identified that a reward system has no impact on KS, whereas trust, communication between members of staff and leadership had a positive and significant effect on KS in the sample studied. The size of the sample, the sector and the country of application are the main limitations of this research. Future researchers could take measures to test the research structure in different industries and countries.

3.5.3 Technology

Regarding technology (IT), the literature on KS in the banking sector aims to understand how IT can improve KS and, if to any degree, the use of technological tools can inhibit KS. The articles cited in this SRL treated IT as a secondary element, showing that it is supported by other research axes. Thus, on this topic, we presented some studies that used the IT pillar in a more evident way, even though in the background.

As for the problems related to virtual teams, and the need to understand the relations established in this way, a framework was designed by Pinjani and Palvia (2013) to assist organisations in understanding the relation between diversity, mutual trust and KS among virtual teams, as an additional focus in understanding the moderating impact of collaborative technology and of the characteristics of tasks. The article contributed in the exploration of relation between mutual trust, KS and diversity. Moreover, it showed the moderating effects of collaborative technology and task interdependence.

Organisational factors were also researched. Among these are organisational culture, leadership and IT infrastructure. For Mushtaq and Bokhari (2011), the cumulative effects of cultural factors and leadership styles were not adequately identified in the ambit of KS

in the banking sector. Do organisational culture and transformational leadership style actually have an impact on KS? To answer this question, they used the theory of transformational and transactional leadership as a support. After data collection and analysis, they concluded that organisational culture, transformational leadership and KS are important variables in KM research, but their relation is not verified in this way. Culture can be understood as an influencing factor, just as they found greater potential for the development of KS in an environment in which transformational leadership takes place. They suggest that in future research factors other than these should be explored.

4 Discussion and research agenda

Among the research problems most investigated in this SRL, KS evaluation models stand out, along with KM implantation models in the banking sector. Because it is a multidisciplinary theme and there are particularities in bank knowledge flow, the evaluation and application models do present indefinite variables. There are some currents that identify different influences regarding KS, such as: social factors, cultural aspects, IT infrastructure and leadership. However, the constructs culture, innovation capacity, trust and leadership are also more researched than others we can consider emerging and relevant to the current context, such as information technology, social media and hiding knowledge. However, few studies have been identified that refer to alliances between companies and, in none of the articles studied; there was a concern with the relationship between fintechs and traditional banks, for example. The demands of IT received little attention in the studies, as described by Alsafi and Fan (2020), digital transformation in the banking context is an urgent agenda.

Regarding the theories adopted to investigate KS research problems in the banking sector, it was possible to identify that, in addition to the necessary the model of converting tacit knowledge to explicit and vice versa, socialisation, externalisation, combination and internalisation (SECI) proposed by Nonaka (1994), assumes that the most valuable knowledge is contained in the minds of individuals in the tacit form and can only aggregate some value to the organisation from the moment it is converted into explicit. And, the KBV that emerged as a relevant topic with regard to the recognition of knowledge as a generator of sustainable competitive advantage, especially with regard to KS (Lee et al., 2005). The presence of the social capital theory and the social exchange theory indicates that KS depends on social and relational aspects for your driving. Despite the relevance of these constructs, in the current technological scenario it must be considered that a significant number of knowledge teams are operating in a remote way and are supported by diverse technological solutions to share knowledge. In this context, it remains to be seen whether such models offer adequate support or such theories as affordance can gain space as a theory for aid us to understand the interaction of knowledge workers with technologies.

Regarding the methodological approaches adopted to investigate problems of research into KS in the banking sector, the majority of these are quantitative. As a rule, the quantitative approach is used to test recognised models and scales, though in the face of a lack of identified constructs, some more exploratory research is necessary to open up the field more in the sense of seeking adaptation to the social and technological changes that have taken place in the past ten years. An alternative would be a case study or action research with banks applying good KS practices, especially in cases where you already

have some kind of relationship with fintechs and have IT management applied to the best developed KM.

We need to recognise that some of the findings in the articles on KS in the banking sector are important contributions to the academy. Information technology was the variable with the greatest influence on KS, followed by learning, generating an evaluation model of motivational factors associated with technology applicable to banks in the work by Tan et al. (2010). Organisational culture and transformational leadership have always been perceived as important variables in KM, even though their verification should be carried out in way that is different to what has been done, for the impact of the independent constructs culture and transformational leadership are verified in KS, according to Mushtaq and Bokhari (2011). Considering the current competitive and hostile banking environment, the signalling of hypercompetition as a negative moderator of the relation between KS and bank performance was a relevant contribution by Tsai et al. (2016). This leads us to consider the conclusions obtained by Danish et al. (2014) when they verified that bank leaders are the main channel for supporting knowledge flow within and between organisations. The common ground in the findings of the two last articles lies in the fact that hypercompetition can be controlled by team leaders. This finding is directly related to the need for a new stance in the face of the competitive dynamics that permeate the relationships between banks and fintechs, since, in view of the contributions of Gewald et al. (2019), the alliance with the main intention of KS is a more productive path for both sides.

One of the emerging studies in terms of KS is hiding knowledge, which, contrary to common sense, is not naturally prejudicial to KS. However, it has become a relevant point of inflection for study, for hiding knowledge can reflect the insecurity of some professionals regarding the company and their colleagues, since the retention of knowledge can be seen as a guarantee. Knowledge is considered a strategic asset for organisations, especially those that are considered intensive in knowledge, such as those in the banking sector, according to Jha and Varkkey (2018). The study identified factors that trigger the behaviour of hiding knowledge among employees, such as: mistrust, competitive work environment, perceived professional insecurity, lack of recognition, lack of reciprocity and lack of confidence in one's own knowledge. In the face of this, we can suppose that the theme interests the banking sector because of its technological nature, which is intensive in knowledge.

The findings by Casimir et al. (2012) are also worth attention. They found moderation of trust based on affect for the construction of foundations for social capital and exchanges, promoting a better understanding of the role of social relations for the behaviour of KS. Just as Abbas et al. (2013) concluded that when the subject is KS, the factor of socialisation is at the top, followed by trust, and the motivational factor appears only in third place. Another study that helped in the understanding of the relation between mutual trust and KS, besides demonstrating the moderating effects of collaborative technology and task interdependence, was the article by Pinjani and Palvia (2013). The findings of the three articles reflect the perception of ownership that individuals have over the knowledge they hold, so it is up to managers to understand these dynamics in order to establish reliable relationships that allow a feeling of greater security so that employees can share knowledge with the company.

Regarding the system of rewards, it can be inferred that there is no impact on KS. This is an interesting finding to be analysed, since, in practice, there are several actions that encourage the participation of employees with new ideas and projects, so this

moderator should be better investigated in other sectors and contexts. Whereas trust, communication between employees and leadership had a positive and significant relation with KS (Islam et al., 2011), reinforcing the importance of the participation of top management in KM processes and, especially leading the initiatives and contributing to a more inclusive communication.

Other studies support in a succinct way the technology question in the ambit of KS. Like Mohammed and Jalal (2011), who identified that IT infrastructure, associated with human resources, can interfere in the KS process, affecting decision making. Just as the adequate integration of business intelligence (BI) with KM can help the bank to obtain ample benefits (Rao and Kumar, 2011). These considerations directly affect the banking sector, which is recognised for implementing technological solutions and, as already mentioned in the article, has challenges to be overcome due to the need for better integration with fintechs to generate learning through KS.

One of the findings that demonstrates practical, interesting relevance is in the research by Gangi et al. (2019), which found indications that customers prefer banks with a better reputation, even though their costs are higher, above all, when they manage to make a synergetic connection between corporate social responsibility (CSR) and KM, thereby also increasing opportunities for knowledge creation in banks and thus improving their competitiveness. These findings are in line with the recent study by Alsafi and Fan (2020) that identified that, due to the big data analysis and because it has a restricted focus on consumer needs, fintechs are able to deliver personalised solutions that generate value perception and, therefore, they tend to be better evaluated by users. Such a perception of value can be converted over time into larger margins, releasing fintech from the initial low cost logic.

The research developed in the sample analysed presents some limitations and some of these limitations were turned into suggestions for future research, which leads to the answer to *RQ1.5: What is the research agenda proposed in the articles on KS in the banking sector?*

We can cite the following as a future research agenda proposed in the articles regarding KS in the banking sector: the exploration of other variables (Al-Ammary, 2014; Liao et al., 2012; Rasoulinezhad, 2011); the use of bigger samples (Cader et al., 2013; Alsam et al., 2016; Li, 2012); studying how KS and km impact the last line of the result (Tanaji, 2012; Imran, 2014); using more objective measures (Cebi et al., 2010); widening research to other regions and industry segments (Wahyudi, 2015; Nattapol et al., 2010; Rasoulinezhad, 2011; Hong et al., 2011; Oluikpe, 2012; Islam et al., 2011); and carrying out longitudinal studies (Figueiredo et al., 2016; Chennamaneni et al., 2012).

Arising from a discussion grounded in the analysis of the results and to structure the research distributed in the literature better, we propose the research agenda on KS in the banking sector presented in Table 2. Each line in the table proposes a construct or research question that could be the basis of academic studies with the aim of widening understanding of the phenomena related to KS in the banking sector. In this sense, it was possible to identify research gaps on the type of knowledge shared and on the way it is shared. The relevant contracts for KS in the highly technological context of banks can also be better defined. The fields of study in KS lack specific studies, since traditional banks and fintechs may have different approaches to KS. Most of the studies were qualitative. Associated with the fact that the context in which the banks are inserted is changing rapidly, it is possible to suggest the lack of qualitative exploratory studies that allow updating the variables and understanding the mechanisms of KS. Finally, the

research agenda aims to provide ways for the development of the field of study with a focus on generating value for managers and academics.

Table 2 Research agenda on the behaviour of KS in the banking sector

<i>Research construct or question</i>	<i>Methodological approach</i>	<i>Sector</i>	<i>Practical and/or theoretical implications</i>
What type of knowledge is shared and how is it shared?	Exploratory, case study (single or multiple)	Traditional banks	Understanding the differences in mechanisms, motivations and effects in the sharing of different types of knowledge, such as technical knowledge and managerial knowledge. This difference can lead to the selection of tools and constructs related to KS, seeing that these can vary depending on the content shared.
What constructs are relevant to KS in the highly technological context in which banks are operating?	Exploratory, case study (single or multiple)	Traditional banks and digital banks	Investigating whether the scales and models developed over the past 10 years also serve to explain the phenomena related to KS in banking institutions. This research could guide the updating of models as well as the creation of new ones, and also the construction of perspectives more adapted to the present context.
How do social media support KS activities in banking organisations?	Exploratory, case study (single or multiple)	Traditional banks	Investigating the effects that social media have on KS. The objective is to evaluate how they influence KS.
Does the influence of the hiding of knowledge in KS exist in the environment of financial institutions?	Deductive, quantitative	Traditional banks and digital banks	Considering the technology utilised in the banking sector and that, in the face of the belief that they can gain some potential advantage, professionals in the technology segment are known for hiding knowledge, it is important to understand how these dynamics can influence the flow of knowledge and how this interference can reflect on company strategy.
What are good KS practices in traditional banks?	Exploratory, case study (single or multiple)	Traditional banks	Serving as a base for a new exploratory wave on the variables and constructs that help to explain the relations that occur in the banking industry regarding KS.
How do KS occur between traditional banks and fintechs?	Exploratory, case study (single or multiple)	Traditional banks and fintechs	Proposing models applicable to the new demands of the banking sector which, after fighting against fintechs, has begun to envisage new partnerships.
What constructs are relevant for KS between banks and fintechs?	Exploratory, case study (single or multiple)	Traditional banks and fintechs	Applying different models and comparing their adherence to the inter-organisational relations that involve traditional banks and fintechs.

In addition to the contributions pointed out, the need to widen the bases of study to other regions, such as Europe and America, is understood, since the research still concentrates on Asia and the Middle East.

5 Final remarks

This SLR's main aim is to understand how research into KS in the banking sector is characterised. This research contributes to the literature in three ways:

- 1 It characterises the studies on KS in the banking sector
- 2 It presents new insights into KS in the banking sector, such as the influence of digital media, hypercompetitiveness, of hiding knowledge, and social, structural and technological factors in KS.
- 3 It proposes a research agenda to investigate constructs aligned to recent changes in the banking sector.

In addition to this, the absence of studies on KS in a scenario of alliances between fintechs and traditional banks was revealed. Such studies are shown to be essential, since alliances like these are formed because of the asymmetry of knowledge.

The study contained some limitations, such as:

- 1 In the method, the backward search phase was not carried out, which could limit the scope of the articles analysed.
- 2 The restriction of the search to articles in English.
- 3 It presented diverse results on KM instead of the initial objective, KS, which could show a natural association of themes in the research, or even the need for a better narrowing of the research terms and filters so as to separate the results more precisely.

References

- Abbas, F., Rasheed, A., Habiba, U. and Shahzad, I. (2013) 'Factors promoting knowledge sharing and knowledge creation in banking sector of Pakistan', *Management Science Letters*, Vol. 3, No. 2, pp.405–414.
- Ahmed, S., Fiaz, M. and Shoaib, M. (2015) 'Impact of knowledge management practices on organizational performance: an empirical study of banking sector in Pakistan', *FWU Journal of Social Sciences*, Vol. 9, No. 2, pp.147–167.
- Al-Ammary, J. (2014) 'The strategic alignment between knowledge management and information systems strategy: the impact of contextual and cultural factors', *Journal of Information and Knowledge Management*, Vol. 13, No. 1, p.1450006.
- Alsafi, T. and Fan, I.S. (2020) 'Investigation of cloud computing barriers: a case study in Saudi Arabian SMEs', *Journal of Information Systems Engineering and Management*, Vol. 5, No. 4, p.em0129.
- Alsam, U., Rehman, C.A. and Imran, M.K. (2016) 'Intelligence and managerial performance: an interactive role of knowledge sharing culture', *Pakistan Business Review*, Vol. 18, No. 3, pp.598–617.
- Bardin, L. (2006) *Análise de conteúdo. 2. tiragem*, p.70, Edições, Lisboa/Portugal.

- Casimir, G., Lee, K. and Loon, M. (2012) 'Knowledge sharing: influences of trust, commitment and cost', *Journal of knowledge management*, Vol. 116, No. 5, pp.740–753.
- Cebi, F., Aydin, O.F. and Gozlu, S. (2010) 'Benefits of knowledge management in banking', *Journal of Transnational Management*, Vol. 15, No. 4, pp.308–321.
- Chennamaneni, A., Teng, J.T. and Raja, M.K. (2012) 'A unified model of knowledge sharing behaviours: theoretical development and empirical test', *Behaviour and Information Technology*, Vol. 31, No. 11, pp.1097–1115.
- Danish, R.Q., Asghar, A. and Asghar, S. (2014) 'Factors of knowledge management in banking sector of Pakistan', *Journal of Management Information System and E-commerce*, Vol. 1, No. 1, pp.41–49.
- Esteban-Sanchez, P., de la Cuesta-Gonzalez, M. and Paredes-Gazquez, J.D. (2017) 'Corporate social performance and its relation with corporate financial performance: international evidence in the banking industry', *Journal of Cleaner Production*, Vol. 162, No. 1, pp.1102–1110.
- Figueiredo, E., Pais, L., Monteiro, S. and Mónico, L. (2016) 'Human resource management impact on knowledge management', *Journal of Service Theory and Practice*, Vol. 26, No. 4, pp.497–528.
- Gangi, F., Mustilli, M. and Varrone, N. (2019) 'The impact of corporate social responsibility (CSR) knowledge on corporate financial performance: evidence from the European banking industry', *Journal of Knowledge Management*, Vol. 23, No. 1, pp.110–134.
- Gewald, H., Wagner, H.T. and Wolff, B. (2019) 'The catalyzing role of fintechs for innovation sourcing in financial services', in *PACIS*, p.34.
- Hong, D., Suh, E. and Koo, C. (2011) 'Developing strategies for overcoming barriers to knowledge sharing based on conversational knowledge management: a case study of a financial company', *Expert systems with Applications*, Vol. 38, No. 12, pp.14417–14427.
- Hosseini, M.R., Tahsildari, H., Hashim, M.T. and Tareq, M.A. (2014) 'The impact of people, process and technology on knowledge management', *European Journal of Business and Management*, Vol. 6, No. 28, pp.230–241.
- Imran, M.K. (2014) 'Impact of knowledge management infrastructure on organizational performance with moderating role of KM performance: an empirical study on banking sector of Pakistan', *Information and Knowledge Management*, Vol. 4, No. 8, pp.85–98.
- Islam, T., Anwar, F., Khan, S.U.R., Rasli, A., Ahmad, U.N.B.U. and Ahmed, I. (2012) 'Investigating the mediating role of organizational citizenship behavior between organizational learning culture and knowledge sharing', *World Applied Sciences Journal*, Vol. 19, No. 6, pp.795–799.
- Islam, Z.M., Hasan, I., Ahmed, S.U. and Ahmed, S.M. (2011) 'Organizational culture and knowledge sharing: empirical evidence from service organizations', *African Journal of Business Management*, Vol. 5, No. 14, pp.5900–5909.
- Jha, J.K. and Varkkey, B. (2018) 'Are you a cistern or a channel? Exploring factors triggering knowledge-hiding behavior at the workplace: evidence from the Indian R&D professionals', *Journal of Knowledge Management*, Vol. 22, No. 4, pp.824–849.
- Klus, M.F., Lohwasser, T.S., Holotiuk, F. and Moormann, J. (2019) 'Strategic alliances between banks and fintechs for digital innovation: motives to collaborate and types of interaction', *The Journal of Entrepreneurial Finance*, Vol. 21, No. 1, p.1.
- Lee, K.C., Lee, S. and Kang, I.W. (2005) 'KMPI: measuring knowledge management performance', *Information and Management*, Vol. 42, No. 3, pp.469–482.
- Li, R.Y.M. (2012) 'Knowledge management, sharing and creation in developing countries banking industries', *Advanced in Network and Communications (ANC)*, Vol. 1, No. 1, pp.13–26.
- Liao, S.H., Chang, W.J., Hu, D.C. and Yueh, Y.L. (2012) 'Relationships among organizational culture, knowledge acquisition, organizational learning, and organizational innovation in Taiwan's banking and insurance industries', *The International Journal of Human Resource Management*, Vol. 23, No. 1, pp.52–70.

- Malhotra, N.K. (2001) *Pesquisa de Marketing: Uma Orientação Aplicada.*, Bookman Editora, São Paulo - SP, Brazil.
- Mohammed, W. and Jalal, A. (2011) 'The influence of knowledge management system (KMS) on enhancing decision making process (DMP)', *International Journal of Business and Management*, Vol. 6, No. 8, p.216.
- Mushtaq, R. and Bokhari, R.H. (2011) 'Knowledge sharing: organizational culture and transformational leadership', *Journal of Knowledge Management Practice*, Vol. 12, No. 2, pp.1–9.
- Nahapiet, J. and Ghoshal, S. (1998) 'Social capital, intellectual capital, and the organizational advantage', *Academy of Management Review*, Vol. 23, No. 2, pp.242–266.
- Nattapol, N., Peter, R. and Laddawan, K. (2010) 'An investigation of the determinants of knowledge management systems success in banking industry', *World Academy of Science, Engineering and Technology*, Vol. 71, No. 1, pp.588–595.
- Nonaka, I. (1994) 'A dynamic theory of organizational knowledge creation', *Organization Science*, Vol. 5, No. 1, pp.14–37.
- Oluikpe, P. (2012) 'Developing a corporate knowledge management strategy', *Journal of Knowledge Management*, Vol. 16, No. 6, pp.862–878.
- Omar, A., Weerakkody, V. and Sivarajah, U. (2017) 'Digitally enabled service transformation in UK public sector: a case analysis of universal credit', *International Journal of Information Management*, Vol. 37, No. 4, pp.350–356.
- Pinjani, P. and Palvia, P. (2013) 'Trust and knowledge sharing in diverse global virtual teams', *Information and Management*, Vol. 50, No. 4, pp.144–153.
- Rao, G.K. and Kumar, R. (2011) *Framework to Integrate Business Intelligence and Knowledge Management in Banking Industry*, arXiv preprint arXiv: 1109.0614.
- Rasoulinezhad, E. (2011) 'Measuring the role of knowledge management processes in the commercial banks of Iran', *Electronic Journal of Knowledge Management*, Vol. 9, No. 4, p.353.
- Sraderssep, A. (2018) 'The Lehman Brothers collapse and how it's changed the economy today', *The Street*. Access, September 12 [online] <https://www.thestreet.com/markets/lehman-brothers-collapse-14703153> (accessed 12 June 2020).
- Tan, N.L., Lye, Y.H., Ng, T.H. and Lim, Y.S. (2010) 'Motivational factors in influencing knowledge sharing among banks in Malaysia', *International Research Journal of Finance and Economics*, August, Vol. 44, No. 1, pp.191–201.
- Tanaji, B.S. (2012) 'Benefits of knowledge management system for banking sector', *Benefits*, Vol. 3, No. 1, pp.133–137.
- Tsai, Y.H., Joe, S.W., Chen, M.L., Lin, C.P., Ma, H.C. and Du, J.W. (2016) 'Assessing team performance: moderating roles of transactive memory, hypercompetition, and emotional regulation', *Human Performance*, Vol. 29, No. 2, pp.89–105.
- Uğurlu, Ö.Y. and Kizildağ, D. (2013) 'A comparative analysis of knowledge management in banking sector: an empirical research', *European Journal of Business and Management*, Vol. 5, No. 16, pp.12–19.
- Wahyudi, I. (2014) 'Commitment and trust in achieving financial goals of strategic alliance', *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 7, No. 4, pp.421–442.
- Wahyudi, I. (2015) 'Realizing knowledge sharing in strategic alliance: case in Islamic microfinance', *Humanomics*, Vol. 31, No. 3, pp.260–271.
- Wolfswinkel, J.F., Furmueller, E. and Wilderom, C.P. (2013) 'Using grounded theory as a method for rigorously reviewing literature', *European Journal of Information Systems*, Vol. 22, No. 1, pp.45–55.