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## At the mercy of our emotions? A multi-dimensional analysis of emotions in knowledge management research

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RESEARCH ARTICLE

# At the mercy of our emotions? A multi-dimensional analysis of emotions in knowledge management research

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## Abstract

Emotions are deeply rooted in the human mind and vital to many knowledge processes, such as knowledge creation and knowledge sharing. Nonetheless, the knowledge management (KM) discipline largely approaches KM from a rational rather than an emotional standpoint. Therefore, starting with a broad view on emotions in general as well as several discrete emotions, our paper presents a structured review of existing evidence on emotions and their role in KM research. We use a structured literature review approach to examine research on emotions as a general concept as well as several discrete emotions in KM research. We recognize and incorporate an integrative emotions-in-KM framework, dividing KM into enablers, processes, and intermediary outcomes as well as organizational performance, and connected emotions with each of these parts. After identifying 72 relevant research publications, we analyze and assign these publications to our initially developed integrative review framework. We present several research opportunities to inspire and encourage further research on emotions in KM. Our analysis reveals a strong focus on empirical approaches; we suggest future research employs further qualitative research to incorporate profound theories and models for further exploring emotions in KM. Furthermore, emotions as the intermediary outcome or during knowledge creation and knowledge use could be investigated in further research endeavors. By showing in which KM contexts and processes emotions are displayed, organizations can draw conclusions to trigger positive emotions for better KM as well as reducing barriers caused by emotions.

## 1 | INTRODUCTION

Knowledge management (KM) is a valuable contributor to successful organizational performance. Employee work performance and productivity—by means of encouraging interaction and collaboration—are positively influenced by KM (Cao et al., 2012; Urbach et al., 2010). Thus, organizations as well as researchers have recognized and taken interest in knowledge and KM processes for many years now (Serenko et al., 2010). Topics investigated range from knowledge and KM definitions, theories and technologies (Kane et al., 2006; Timbrell et al., 2005),

to knowledge types, KM processes, as well as managerial issues regarding KM (Fteimi & Lehner, 2016). Knowledge cannot be detached and planted anywhere within the organization as it is composed of experience, values, and information (Davenport & Prusak, 1998) and is part of an emotional economy that cannot be viewed and predicted merely from a rational point of view (Peng et al., 2020).

Therefore, knowledge clearly includes human additions and is context-specific (Nonaka, 1994). Just as humans unconditionally attach knowledge to themselves, emotions are inseparable from human action since “there is no action without affect” (Izard, 2013).

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Transferring knowledge is not free of value as it is tied to the knowledge carrier's emotions (Aldrich, 1999), and exactly those emotions such as fear or trust enable others to gain meaning of someone else's knowledge (Davenport & Prusak, 1998). Furthermore, emotions serve as a primary motivational system for humans (Leeper, 1948; Mowrer, 1960), making them a key component of the human experience interacting with other humans or objects—such as information systems (IS) and other technologies (Norman, 2004). Emotions can be involved in any part of managing knowledge, from the KMS interface and usability (Wang et al., 2017) to the way employees interact and share or hide their knowledge (Abdillah, 2021; Ain et al., 2021; Peng et al., 2020).

The interweaving of emotions and knowledge, as well as emotions being the primary motivation for action, make research on emotions in KM intriguing (Caya et al., 2012; Tenório et al., 2017). There is some research on the role of emotions (Kelly & Barsade, 2001) and on the existence of an emotional component in tacit knowledge (Reus & Liu, 2004), and how it can benefit or harm KM and KM systems (KMS). Nonetheless, there is no multi-dimensional analysis of emotions in KM research relating to the motivation why KM is used or hindered as well as which KM processes are overlooked. This makes research in this field difficult to overlook, leaving room for speculation where further research is required.

In this study, we aim at investigating the current state of KM and KMS research on emotions and taking a first step in identifying their respective roles by reviewing previous research that covers emotions or any synonyms as well as selected discrete emotions. We chose to include all types of studies, regardless of their basis being existing literature or empirical data to gain a comprehensive overview of this specific research field. Furthermore, we examine how emotions are presented and, if applicable, conceptualized in these studies. To ultimately arrive at showing the role emotions play in KM research, we derive the following research question (RQ):

RQ: How and in which KM contexts and processes are emotions displayed?

By answering this research question, we aim to show previous focus areas in KM research regarding emotions' role as well as to identify research opportunities for future KM research on emotions. Thereby, we contribute to research by exposing research gaps, which may serve as a source for inspiration regarding future research undertakings—especially working towards a taxonomy of emotions in KM. This way, organizations can gain a deeper understanding of how to successfully manage knowledge and the respective knowledge bearers as a part of an emotional economy.

## 2 | THEORETICAL BACKGROUND

### 2.1 | Emotions

Emotions have been recognized and conceptualized early on within the psychology discipline. However, the path to obtaining a generally valid definition of emotions has been paved with conflicting theories

(English & English, 1958). Even further, some researchers have argued that the disagreement (Chaplin & Krawiec, 1979) over definitions has altogether stood in the way of finding an acceptable theory of emotions. Nonetheless, researchers of several domains amongst which psychology was the starting domain, but sociology and economics also followed, have tried to provide not only definitions and theories of emotion but also emotion taxonomies and frameworks. The most popular definition was provided by Leeper (1948), who states that emotions primarily have motivational character; they are “processes which arouse, sustain, and direct activity” (p. 17), which is similar to the way Plutchik (1984) views emotions. Other authors take a more general approach in that emotions direct all cognitive activities (Clark & Fiske, 1982; Mandler, 1975) by being specific neuropsychological phenomena, which are shaped by natural selection to organize and motivate physiological, cognitive and action patterns (Izard, 1977). For our purposes, we will use the definition provided by Salovey and Mayer (1990) given in the context of research on emotion-related skills. They state that emotions can be seen as organized responses that cross the boundaries of many psychological subsystems, typically in response to an internal or external event, which has been assessed as positive or negative for the individual (Salovey & Mayer, 1990). Here, the researchers clearly suggest the distinction between positive and negative emotions, a common distinction many emotion scales provide (Izard, 1977; Mowrer, 1960; Roseman et al., 1996).

While there are somewhat clear definitions and conceptualizations of emotions, there is disarray regarding the alleged synonymy of emotion, mood, feeling, and perception, and whether they really are the same or falsely used in a synonymous manner. Research suggests that emotions and moods are related but distinct phenomena (Beedie et al., 2005), with emotions being generally more short-lived and intense than moods (Salovey & Mayer, 1990). Nonetheless, they both are cognitive elements that humans can distinguish from purely physical sensations (Fredrickson & Joiner, 2002). Perception, however, incorporates these physical sensations as it can be defined as recognizing and interpreting sensory information (Scherer, 2005). We decided to approach the lack of distinction of the described terms in research, which could be due to a large number of different definitions, by including all three search terms (emotion, mood, and feeling) in order not to exclude relevant research.

As previously touched upon, researchers have established many theories, frameworks, and scales, which not only make the important distinction of positive and negative (and sometimes neutral) emotions (Aviezer et al., 2012). Some researchers focus on very few but distinct emotion constructs in their emotion models and scales, such as Kay and Loverock (2008), who incorporate anger, anxiety, happiness, and sadness in their computer emotion scale, or Mowrer (1960), who presents hope, relief, fear, disappointment, anger, and sadness in his situational structure of emotions. Others aim to incorporate as many emotions as possible in their scales, leading to 32 different emotions in Plutchik's (1980) wheel of emotions or 20 overarching emotion constructs with a total of 47 sub-emotions in Richins' (1997) consumption-related emotion model. In order to also include research on discrete positive and negative emotions, we decided to choose an emotion scale that includes both types of emotions to rather equal parts without strong compartmentalization. Thus, we included the

basic emotions included in the hypothesized structure of the emotion system as suggested by Roseman et al. (1996), which we will elaborate on in the section on our research process.

## 2.2 | Knowledge management

Since the mid-1990s, KM has gained importance and popularity both amongst organizational strategy and as a research topic. It is now an established discipline including its own journals within many domains, for example, the IS domain (Jennex, 2007) as well as the management domain (Nonaka & Krogh, 2009). Regardless of the domain, knowledge can be viewed mixture of experience, values, and information, oftentimes comprised in documents, repositories, and routines as well as processes and norms within organizations (Davenport & Prusak, 1998). Understanding and experience regarding the context as well as surrounding conditions existing during knowledge generation and use are necessary in order to make sense of knowledge (Jennex, 2007).

The most popular knowledge taxonomies in research are Polanyi's (1967) and Nonaka's (1994) taxonomies which differentiate between explicit and tacit knowledge. While explicit knowledge generally refers to codified knowledge (found in documents or other media), tacit knowledge is more complicated to apprehend since it is not codified, but mostly personal and based on experience. Therefore, we can only attempt to express tacit knowledge through socialization or document it through externalization and thereby turn it into explicit knowledge (Nonaka & Takeuchi, 1995). Explicit knowledge is combined to create new explicit knowledge, but can also turn into implicit knowledge through internalization (Nonaka & Takeuchi, 1995).

Since both types of knowledge represent an important organizational asset and add value, not only practice but also research took interest in managing this asset. This leads to establishing the KM domain. As per the definition by Holsapple and Joshi (2004), KM is an organization's systematic and conscious effort to enhance, maintain and use knowledge in a value-adding manner to fulfill tasks and improve the organization's position. Although KM is not purely technical in nature, managing organizational knowledge is often supported by KMS (Jennex, 2007). These KMS, in turn, support the social perspective of KM, which entails an organizations' culture, structure, and people, as well as the technical perspective, represented through information technology (IT) (Lee & Choi, 2003). While researchers have suggested different KM process models, knowledge creation or acquisition and knowledge use or application are generally at the core of it (Alavi & Leidner, 2001; Gold et al., 2015; Kakabadse et al., 2003), since both processes are vital for successful KM.

In order to take a sequence of different KM processes into account, going forward we will generally adhere to processes that (Gold et al., 2015) used when researching knowledge process capability: acquisition, conversion, application, and protection. While acquisition refers to any type of knowledge creation, conversion is the ability to make the acquired knowledge useful by structuring, combining and transforming it—and is, therefore, strongly related to knowledge

sharing. Thus, we have four processes at the core of KM: knowledge acquisition/creation, knowledge conversion/sharing, knowledge application/use, and knowledge protection, while the latter refers to security-oriented processes to protect and preserve acquired knowledge (Gold et al., 2015).

## 2.3 | An emotions-in-KM framework

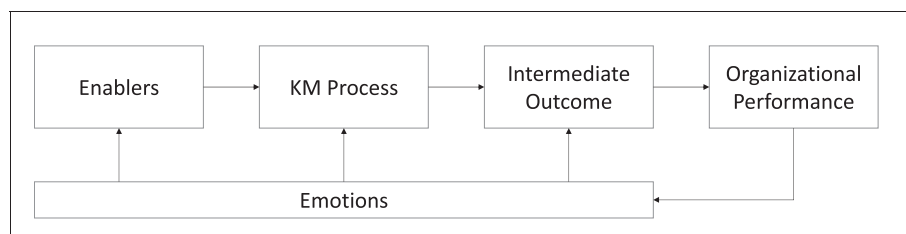
Knowledge is not an object, but rather a process (Stacey, 2001)—a similarity that it shares with emotions. Emotions are chronologically unfolding after someone is exposed to a stimulus, experiences a state of “feeling” with consequences leading to externally visible behaviors and outputs which, in turn, become input for interaction partners (Elfenbein, 2007). And just like emotions and knowledge, KM also follows a sequence that unfolds chronologically and can be observed from several perspectives. Aside from playing a role in the different individual knowledge processes of creation, sharing, use, and protection, researchers have previously often investigated the relationship between the organizational KM factors enablers, processes, intermediate outcome, and organizational performance (Lee & Choi, 2003). The latter can, in turn, have an influence on the emotions that are passed back into the first three factors as it can trigger positive as well as negative emotions related to KM—if the company performs well by sharing knowledge, employees might be more motivated to partake in KM or to use KMS (see Figure 1).

Input can be of tangible as well as intangible nature. In order for any KM process to be triggered, an employee has to be motivated to start it—thus making motivation our enabler. Processes can be any type of process related to KM (Gold et al., 2015). The intermediate outcome—“capturing the right knowledge, getting the right knowledge to the right user, and using this knowledge” (Jennex et al., 2009)—is the step between the process and organizational performance. If the intermediate outcome is positive, it contributes towards a greater goal, which is successful organizational performance in this case. A negative intermediate outcome will likely worsen organizational performance.

Emotions as the overarching concept can potentially directly influence any of the first three steps of the KM sequence. Therefore, we choose the framework presented in Figure 1 to logically cluster the literature we analyze.

## 3 | RESEARCH PROCESS AND METHOD

In this section, we explain our research process including the criteria we used to find relevant papers for analysis. To gain a full understanding of the identified literature on emotions in KM research, before we elaborate on the papers' thematic focus, we also conducted a scientometric analysis. Here, the year of publication as well as the applied research method are taken into account. Thus, we can already identify first research gaps regarding the applied methods in KM research on emotions.



**FIGURE 1** An integrative emotions-in-KM framework (based on Lee & Choi, 2003)

We base our study on the recommendations of Webster and Watson (2002) for conducting a comprehensive structured literature review. Our focus lies on KM and KMS. Hence, we started our search by browsing the IS domain's leading journals belonging to the Association of Information Systems (AIS) Senior Scholars' Basket of Journals, which comprise the discipline's major contributions (Webster & Watson, 2002).

Since we aim to comprise and present the state-of-the-art of emotions in KM and KMS research, we decided not to limit our search to the AIS Senior Scholars' Basket of Journals. Thus, we included the leading KM journals rated A+ and A in the latest update of Serenko's and Bontis' global ranking of KM and intellectual capital academic journals (Serenko & Bontis, 2017) in our search. These seven journals are the Journal of Knowledge Management, the Journal of Intellectual Capital, The Learning Organization, Knowledge Management Research & Practice, Knowledge and Process Management: The Journal of Corporate Transformation, VINE: The Journal of Information and Knowledge Management Systems, and the International Journal of Knowledge Management.

Additionally, we amplified our findings by also searching the proceedings of the five leading international IS conferences, namely the International Conference on Information Systems (ICIS), the European Conference on Information Systems (ECIS), the Hawaii International Conference on System Sciences (HICSS), the Americas Conference on Information Systems (AMCIS), as well as the Pacific Asia Conference on Information Systems (PACIS). Wherever possible, we searched literature through the EBSCOhost or ScienceDirect databases as well as AIS eLibrary. If publications were not available in these databases, we directly searched the respective websites. Due to the exploratory nature of our study, we decided to limit the sample to the fifteen aforementioned journals and five conferences' proceedings to be adequate for our study.

Where possible, we searched within the metadata, more specifically the title, keywords, and abstract for the words *emotion*, *mood*, and *feeling* or a discrete emotion in combination with *knowledge management*. We searched for *knowledge* instead of *knowledge management* within the KM journals as the thematic focus of these journals already requires a KM context. The discrete emotions that we chose to search for represent basic emotions of the full spectrum from positive to negative according to Roseman et al. (1996). Positive emotions on this spectrum are *hope*, *joy*, *relief*, *liking*, and *pride*, while *surprise* can be both positive and negative. Negative emotions are represented by *fear*, *sadness*, *distress*, *dislike*, *anger*, *shame/guilt*, and *regret*.

With this study being the first step towards an extensive taxonomy of emotions in KM, we wanted to capture all papers since the emergence of the term "knowledge management" in IS research. Hence, we did not limit the search to any specific period. Our search left us with a total of 201 publications matching our search terms as of mid-2021, of which we omitted

17 papers due to not using any of our keywords as a part of their research, but rather as an aspect of the English language's vocabulary. Here, especially the words *hope* (e.g., "...the authors hope to show...") and *liking* (often replaced with "like," which also means "such as") were often used in contexts not relevant for our research. Furthermore, several journals did not allow a search within title, keywords, and abstract, but only a full-text search. In these cases, we manually screened the metadata for our search items. This process caused us to omit further 112 more papers from our sample. As presented in Table 1, the final sample consists of 72 papers.

While the first relevant paper was already published in 1992, only a few papers—if any—were published until the 2000s. This might also be due to the fact that some of the journals were not established until the 2000s, but further momentum on KM publications regarding emotions was not reached until the 2010s.

## 4 | EMOTIONS IN KM RESEARCH

Researchers in the domain of emotions in KM used a vast array of different research methods, but it is notable that 59 of the 72 publications incorporate some type of empirical data. The scientometric analysis in Figure 2 reveals that the most popular research method of qualitative data collection is the case study and the most frequent quantitative research method used is a survey—frequently followed up by structural equation modeling. Such surveys are exceptionally useful when a single emotion or other clearly defined construct is tested for, but do not offer vast avenues for exploratory research. Other methods are historical analyses or commentaries based on very few sources, not providing a strong scientific background. There are five studies focusing on conceptual development, showing it is possible to build theories on emotions in KM or introduce existing theoretical conceptualizations of emotions to KM or KMS research in general.

But since emotions in KM are not vastly researched, it is necessary to add more explorative research, leaving a major opportunity for qualitative researchers. With 30 papers using confirmatory survey-based research, a research opportunity (RO) for qualitative researchers using interview studies and ethnographies choosing to explore emotions in KM can be presented:

RO1: Future research should develop or adapt emotions-in-KM theories through qualitative research methods.

Adhering to the integrative emotions-in-KM framework in Figure 1, we will now elaborate on the papers according to the role emotions play in their research: as enablers, in the process, or as an

**TABLE 1** Literature sources and number of included papers

| Journal/conference proceedings   | Initial sample | Final sample |
|--|----------------|--------------|
| <i>European Journal of Information Systems</i>                                   | 0              | 0            |
| <i>Information Systems Journal</i>   | 1              | 1            |
| <i>Information Systems Research</i>  | 0              | 0            |
| <i>Journal of the Association for Information Systems</i>                        | 4              | 3            |
| <i>Journal of Information Technology</i>   | 1              | 1            |
| <i>Journal of Management Information Systems</i>                                 | 6              | 3            |
| <i>Journal of Strategic Information Systems</i>                                  | 3              | 0            |
| <i>MIS Quarterly</i>   | 3              | 1            |
| <i>Journal of Knowledge Management</i>   | 47             | 19           |
| <i>Journal of Intellectual Capital</i>   | 17             | 1            |
| <i>The Learning Organization</i>   | 32             | 12           |
| <i>Knowledge Management Research &amp; Practice</i>                              | 8              | 8            |
| <i>Knowledge and Process Management: The Journal of Corporate Transformation</i> | 9              | 5            |
| <i>VINE: The Journal of Information and Knowledge Management Systems</i>         | 21             | 4            |
| <i>International Journal of Knowledge Management</i>                             | 1              | 1            |
| <i>International Conference on Information Systems (ICIS)</i>                    | 3              | 0            |
| <i>European Conference on Information Systems (ECIS)</i>                         | 4              | 1            |
| <i>Hawaii International Conference on System Sciences (HICSS)</i>                | 22             | 6            |
| <i>Americas Conference on Information Systems (AMCIS)</i>                        | 8              | 2            |
| <i>Pacific Asia Conference on Information Systems (PACIS)</i>                    | 11             | 4            |
| Total  | 201            | 72           |

intermediate outcome. Furthermore, we will discuss how organizational performance can influence employees' emotions.

#### 4.1 | Emotions as enablers

The first step of our content analysis was to review the final sample for studies conceptualizing emotions and emotive variables as motivators for behavior, more specifically as enablers for participation in KM in general. Approximately 30 percent of our sample, in particular 22 of the 72 included publications, regards emotions as a motivational force for KM.

Overall, we can find several reoccurring discrete emotions as enablers or disablers for KM. Besides enabling emotive concepts, general hindrances also play into account. Figure 3 summarizes the analysis' results according to different clusters. The arrows in Figure 3

represent contribution. Positive contribution is shown with + while negative influence is indicated by -. Different aspects contribute to a cluster (while fear is a discrete emotion, the line here is dotted to indicate it actually contributes to negative emotional experiences). In turn, the three clusters, namely emotive concepts, hindrances, and discrete emotions, all contribute positively or negatively to enablers of KM.

The analysis reveals that there are researchers making out a strong case for KM, finding that amongst different qualities of mind that organizations can develop, emotions are of high value as they expand learning capacities (Marshall, 2000). They also argue that emotions are seen as part of the mindset and KMS needs to be designed accordingly in order to foster emotions (Smith, 2003). Malhotra et al. (2008) study endogenous motivations influencing user intention of KMS and find that user intentions can best be predicted and explained through feelings. When making a decision and predicting future outcomes, emotional information triggers confidence in information use and valuation (Holland et al., 2012).

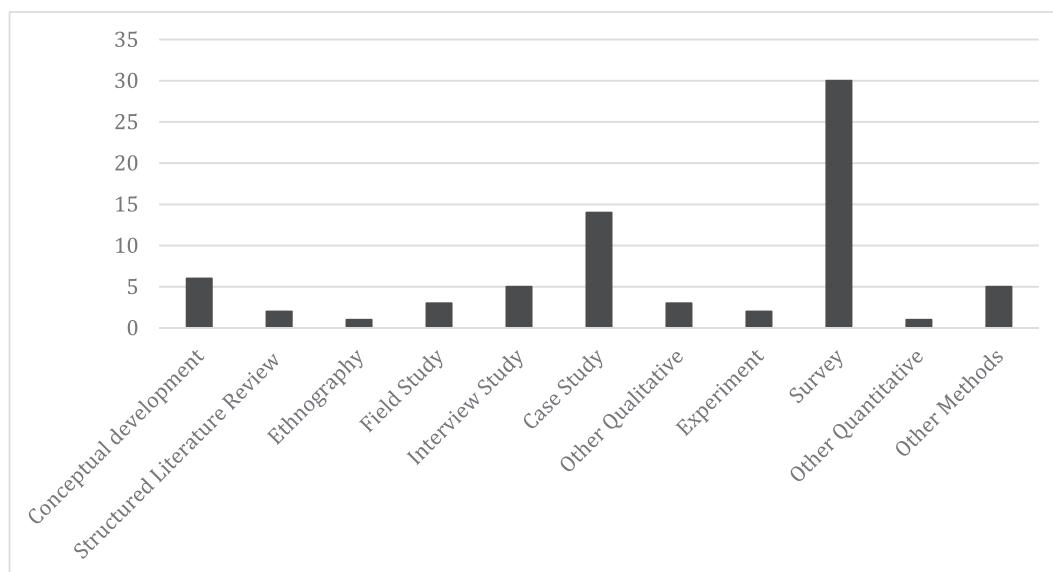
Especially since the workforce is currently becoming younger and more diverse, KM needs to enable several generations to create, share and use knowledge according to their needs and preferences, which can largely be met through honest communication as well as respectful and trusting relationships (McNichols, 2010), political skill, and emotional intelligence (Priyadarshi & Premchandran, 2019). Overall, an appealing emotional climate in the learning organization (Tran, 1998) is supportive for the generational transition of knowledge (Bandera et al., 2018), especially when management specifically promotes emotional resonance in knowledge networks (Xie et al., 2021).

Nevertheless, emotions are not always enabling KM on individual or organizational levels. Past negative experiences can carry through and lead to strong risk-aversion and anxiety regarding KM. Additionally, perfectionism and the fear of mistakes and losing face can cause hindrances (Tsui et al., 2009; Wang & Chang, 2018). Emotional containment, especially in groups, can have a negative impact before knowledge creation even starts (Pemberton et al., 2007); so does fear of knowledge revelation (Khalil & Shea, 2012). For the studies critical of emotions enabling KM, the emotion mentioned most frequently was fear.

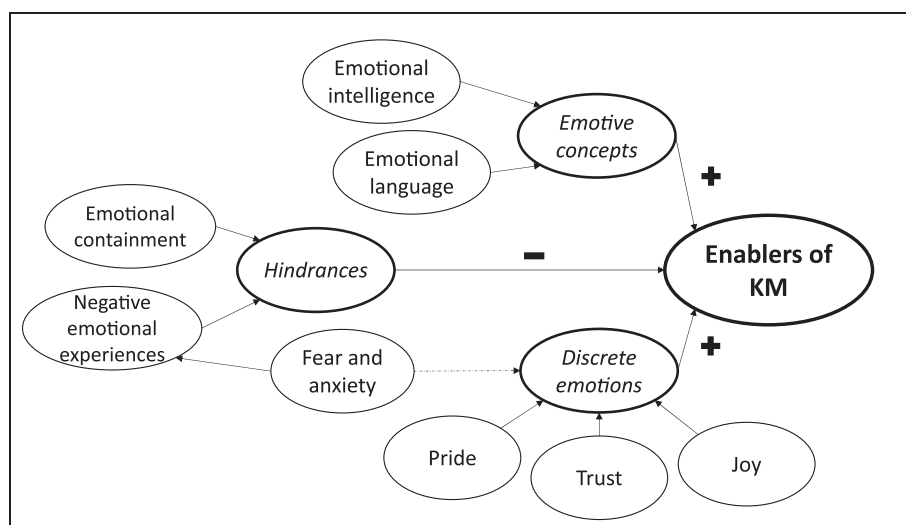
We also reviewed publications that use a specific emotional theory or emotive concepts as influential factors. Tuan (2016) argues that emotional intelligence can strongly trigger collective KM processes while Rechberg (2020) proves there is a positive effect of emotional intelligence on individuals' participation in KM practices. Moreover, emotions are part of organizational culture (Glaser & Halliday, 1999) and have to be taken into account especially when organizational changes occur (Richards, 2010) since appropriate transitional objects in these phases provide emotional support (Wastell, 1999), also making a case for appropriate emotional language (Michell & McKenzie, 2017).

Van den Hooff et al. (2012) operate with more specific emotions, investigating which emotions most influence attitudes and intentions towards knowledge sharing and finding that pride and empathy influence KM attitude. Linden (2009) even calls this pride a "heroic mood." Singh et al. (2018) see the need to reinforce intrinsic motivators such as the joy of sharing. Overall, narrowing down a research endeavor to





**FIGURE 2** Number of publications per applied research method



**FIGURE 3** Results of the analyzed literature regarding KM enablers

a specific emotion could deepen and specify the results. Whereas negative emotions, especially fear and anxiety, have already received KM researchers' attention, positive emotions have yet to be investigated in detail. Additionally, emotion scales as underlying frameworks could help conceptualize emotions for KM research, since using such an analytical framework captures as much as possible of emotions (Mauss & Robinson, 2009). Thus, we propose as follows:

RO2: Future research could examine one or several positive emotions and their role within KM.

## 4.2 | Emotions in the KM process

The second step of our content analysis was to review the final sample for studies showing emotions and emotive variables directly in KM

processes, more specifically as an occurrence within specific KM processes. The largest part, in particular 33 of the 72 included publications, addresses emotions in KM processes. The processes as well as the number of studies assigned to each of them are displayed in Figure 4.

There are three publications that specifically relate to the knowledge acquisition/creation process. In her research, Hafner (2015) refers to a two-sided theory of technological upset versus technological ease during unlearning, an important concept and specific kind of knowledge acquisition. Different from Hafner (2015), Aarrestad et al. (2015) find that the emotional intensity occurring during knowledge creation leads to intensified collaboration in high-quality connections, whereas Gabriel and Griffiths (2002) warn to attempt actively managing emotions during knowledge creation as they can be the key to success and shall, therefore, not be suppressed.

The most popular amongst KM processes in research is knowledge sharing/conversion with 17 publications specifically attempting

to provide insights into how emotions influence this process. Here, one of the most recurring themes is trust. According to Plutchik (1980), trust qualifies as a discrete emotion—stronger than acceptance, but weaker than admiration. Trust is a prerequisite for a sharing culture in the context of an organizational learning environment (Hsu & Chang, 2014; Swift & Hwang, 2013), especially when an organization wants to encourage to share mistakes and learn from them (Kumar et al., 2007). In contrast, fear—generally due to a lack of trust (Assem & Pabbi, 2016)—strongly inhibits knowledge sharing, especially when employees fear that they might be made redundant when sharing their knowledge or that others might take ownership of their knowledge (Hsiao et al., 2006). A company culture not reinforcing those positive emotions poses a severe threat to knowledge sharing (Carrillo et al., 2009), also due to the uncertainty that is created amongst employees (Hsu & Chang, 2014). Thus, the importance of reinforcing strong positive emotion (Tenório et al., 2017) such as passion (Sié & Yakhlef, 2013) or solidarity (Song & Teng, 2008) becomes vital and can even lead to knowledge spillovers resulting in entrepreneurial activities (Ratten, 2021). Fehrenbacher (2017) even found that merely having a happy facial expression when asking others for their knowledge already highly increases the chances of obtaining the requested information. This is in line with other findings that suggest an employee's mood has the potential to impact the way they might share or withhold knowledge (Resca, 2006). Especially when new team members enter a team, they have to be “welcomed emotionally as valuable contributors to a common task” to make knowledge sharing more likely (Sackmann & Friesl, 2007).

Emotional intelligence can also directly increase knowledge sharing through knowledge-oriented leadership, which is supported through emotionally intelligent leaders (Shariq et al., 2018). Furthermore, emotionally intelligent employees make use of a vast array of knowledge transfer methods (Decker et al., 2009) and are more likely to see the benefits of sharing knowledge (Ansari & Malik, 2017), especially in the tacit knowledge conversion processes (Byosiére & Luethge, 2008).

We were able to assign five papers specifically to the knowledge use/application process. Task-relevant knowledge is more likely to be used when it contains richer media, which facilitate socio-emotional perceptions (Kahai & Cooper, 2014). Additionally, different social power bases within a group influence an employee's knowledge

utilization (Lee et al., 2014), since fear especially impacts types of knowledge that are very dynamic, such as formative knowledge (Takahashi & Vandenbrink, 2004). Particularly, feeling incompetent leads to avoidance of knowledge as well as KMS use (Lin et al., 2006) whereas hedonism and positive basic human values increase KMS use (Tams et al., 2020).

Eventually, eight studies discuss knowledge protection. Again, fear and trust, but also guilt and shame, are the emotions associated with protecting—and sometimes overprotecting—individual and organizational knowledge. Generally, it is sensible and understandable that knowledge needs to be protected, especially to avoid unauthorized access from outside the organization as well as contribution loafing within the organization (Sun et al., 2020). But strong ownership feelings (Peng, 2013) as well as envy—especially when employees have low cooperative but high competitive goal interdependence (Weng et al., 2020)—can lead to hiding knowledge altogether, which is a rather undesirable outcome for any organization, since they wish to see knowledge as a public good belonging to the whole organization (Ardichvili et al., 2003). Nonetheless, as soon as there are hints that a learning organization may not be used for what it was intended for, knowledge protection increases (Marsick & Watkins, 1999). Additionally, knowledge may be protected due to shame in case it is deemed inadequate or based on personal failure (Nagayoshi & Nakamura, 2017). High emotional intelligence (de Geofroy & Evans, 2017) as well as leader-triggered positive emotions (Abdillah, 2021), in turn, reduce the likeliness that knowledge is overly protected from fellow employees.

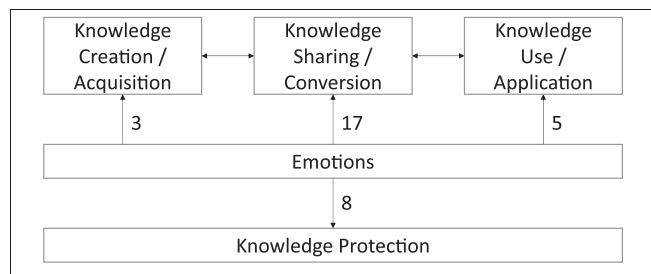
While our analysis has shown that there are many papers on emotions in KM processes in general, most of them specifically address knowledge sharing/conversion, whereas knowledge creation, which is usually regarded as a highly emotional knowledge process, as well as knowledge use, have yet to receive more of researchers' attention. Thus, we arrive at another research opportunity:

RO3: Future research should focus on emotions during knowledge creation or knowledge use processes.

### 4.3 | Emotions as an intermediate outcome

The third step of our content analysis was to review the final sample for studies conceptualizing emotions and emotive variables as intermediate outcomes of KM processes, more specifically as indicators leading to KM success or failure. A small part, in particular 13 of the 72 included publications, regards emotions as an intermediary outcome. Unlike emotions as enablers or in KM processes, we could not cluster the previous publications due to the low number of papers specifying emotions as an intermediary outcome of KM.

Overall, the emotions that are an intermediate outcome, and, thus, also beneficial for organizational performance, are positive. Trenck et al. (2015) state that there are massive emotional benefits from knowledge sharing, which strongly increase the employees' perceived value of knowledge sharing. Öztel and Hinz (2001) come to the



**FIGURE 4** KM processes and number of accordingly assigned studies



conclusion that metaphors, which are often particularly used as a way of transferring tacit knowledge, create emotions. Even stronger is an emotional epiphany, achieved by an employee or a team creating something new through the combination of knowledge and capabilities (Newell et al., 2006). These positive sentiments, achieved through one or several KM processes, can also increase employees' emotional attachment to the organization (Naim & Lenka, 2017). Furthermore, the emotional characteristics that consultants display lead to a benevolent trust, which is critical to project and KM success and, consequently, leads to re-hiring from the client side (Ko, 2010). Once again, the concept of emotional intelligence is presented—this time in the form of team emotional intelligence, which is built up and increased as an outcome of KM (Jamshed & Majeed, 2019). But also individual emotional intelligence and, along with it, individual network intelligence is supported through knowledge-based work (Palmer, 1997).

Further studies display a critical view on KM processes by showing that team arousal and stress (Caya et al., 2012) as well as emotional exhaustion (Parayitam et al., 2021)—also as a result of knowledge hiding (Ain et al., 2021)—can be a negative outcome of KM, lowering performance of business process teams and preventing KM success. Styhre et al. (2001) have a rather ambivalent result in that only emotions conceived less feminine are accepted and, thus, expressed in organizations and can also be a result of KM processes.

In general, emotive designs in IS are becoming a norm (Davern et al., 2012), considering that emotions play a significant role in the use of IS such as KMS, and both human- and machine-oriented computer professionals appreciate taking into account a socio-emotional environment (McLeod, 1992). Overall, the findings reveal that the vast majority of research on the relationship between emotions and KM displays emotions as enablers for KM use or non-use or in KM processes such as knowledge creation and sharing. But especially as part of initial outcomes, they are under-researched and constitute an interesting future research endeavor; thus:

RO4: Future research should investigate emotions as an intermediate outcome of enabling and conducting KM processes.

#### 4.4 | Organizational performance influencing emotions

Albeit our primary research being the investigation of emotions in KM, we also briefly want to elaborate on how an organization's current state and performance can influence the emotions that will then flow into enabling KM or KM processes. An organization's performance heavily relies on its employees and how well they understand the organization, its business, and the practices that are required to succeed. Therefore, not only rational analysis but also other cognitive components are required, amongst which are intuition and emotion, in order to avoid uncertainty entering KM (Bolisani & Bratianu, 2017). Oftentimes, organizational change processes take place in order to enhance the performance. Here, the willingness to apply a “soft”

approach can leverage emotional connectedness (Lacoste & Dekker, 2016) flowing back into the KM process. Once the organization is performing well, focusing on corporate social responsibility and emotional intelligence might start a chain effect and increase organizational learning and competitive intelligence (Trong Tuan, 2013). Eventually, the supreme discipline is recognizing the relevance of emotive knowledge as a key knowledge asset to shape its organizational KM capabilities (Schiuma & Lerro, 2011) through having high performers in management and amongst its workforce. Thus, we arrive at the final research opportunity:

RO5: Future research should establish and investigate the relationship between emotive knowledge and its direct impact on organizational performance.

## 5 | CONCLUSION

In our study, we performed a structured literature review of emotions and their role in KM research. We recognized and incorporated an integrative emotions-in-KM framework, showing how emotions relate to enablers, KM processes, and intermediary outcomes as well as organizational performance. As a result, we identified five specific research opportunities. Eventually, this multi-dimensional analysis of emotions in IS research already provides a starting point for integrating and classifying KM research on emotions. Nevertheless, there is a need for further consolidation of the way we view and display emotions in KM research. Therefore, we have the opportunity to direct research towards creating a taxonomy of emotions in KM, much like the taxonomies that have been established for KM strategies (Earl, 2001) or KM software tools (Tyndale, 2002).

Some limitations of our research should be considered. Biases might occur in our review due to our choice of keywords and the inclusion of only leading IS journals and conference proceedings as well as leading KM journals, and the subjective influences possibly affecting the selection and classification of incorporated studies. Other researchers could possibly have undertaken a different selection and classification of studies. Additionally, we also included papers about moods and feelings in addition to publications explicitly dealing with emotions. As discussed in the sections on emotions, these concepts are not the same, but are often used synonymously, which is why omitting them would suggest an incomplete picture of the chosen topic. To improve and extend the significance of our results, all major databases could be searched to conduct a more comprehensive literature review. Nonetheless, we have faith that our results are replicable and would successfully withstand an extended literature review.

Eventually, our research accounts for several contributions to the theoretical body of knowledge. This is one of the first efforts to structure literature and analyze emotions' role in KM research and constitutes a valuable cornerstone towards the development of a taxonomy of emotions in KM. Besides, we exposed several research opportunities, which can inspire other researchers to undertake research concerning emotions and KM. Additionally, by contributing to research

within the KM discipline, we ultimately also contribute to IS research that deals with the influence of emotions on KMS and, ultimately, on IS. From a practical standpoint, our research can help organizations to vastly improve their KM by focusing on enhancing positive emotions to promote participation in KM as well as reducing emotions that hinder KM and KMS usage.

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