

KNOWLEDGE RISK MANAGEMENT IN ORGANISATIONS: FINDINGS FROM LATIN AMERICA

GESTIÓN DEL RIESGO DEL CONOCIMIENTO EN LAS ORGANIZACIONES: HALLAZGOS EN AMÉRICA LATINA

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Abstract

This exploratory study aims to provide initial insight into knowledge risk management. More precisely, it describes whether and to what extent knowledge risk management is practiced in organisations in different selected Latin American countries. A sample of organisations located in different Latin American countries is surveyed in order to understand how knowledge risks are managed, which knowledge risks are managed, and what tools and methods are used to manage these knowledge risks. The study presents information regarding knowledge risk management, as well as knowledge risks that are addressed in public and private organisations in different Latin American countries. Additionally, overviews of the methods used to manage those knowledge risks and the consequences of missing management of knowledge risks are shown. Based on the findings, decision-makers may identify and initiate actions to improve their approach to knowledge risk management. To the best of the author's knowledge, no quantitative study on the practice of knowledge risk management dedicated to public and private organisations in Latin America has yet been published in academic journals.

Keywords: Knowledge Risk Management, Knowledge Risks, Knowledge Management, Knowledge, Latin America.

Resumen

Este estudio exploratorio tiene como objetivo proporcionar una visión inicial de la gestión de riesgos del conocimiento. Más precisamente, describe si y en qué medida se practica la gestión del riesgo del conocimiento en organizaciones de diferentes países seleccionados de América Latina. Se encuesta una muestra de organizaciones ubicadas en diferentes países de América Latina para comprender cómo se gestionan los riesgos del conocimiento, qué riesgos del conocimiento se gestionan y qué herramientas y métodos se utilizan para gestionar estos riesgos. El artículo presenta información sobre la gestión del riesgo del conocimiento, así como los riesgos del conocimiento que se abordan tanto en organizaciones públicas como privadas en diferentes países de América Latina. Además, se muestran descripciones generales de los métodos utilizados para gestionar los riesgos del conocimiento y las consecuencias debido a la falta de gestión de estos. Con base en los hallazgos, los tomadores de decisiones pueden identificar e iniciar acciones para mejorar su enfoque de la gestión de riesgos del conocimiento. Hasta donde el autor tiene conocimiento, no se ha publicado en revistas académicas ningún estudio cuantitativo sobre la práctica de la gestión del riesgo del conocimiento dedicado a organizaciones públicas y privadas de América Latina.

Palabras clave: gestión del riesgo del conocimiento, riesgos del conocimiento, gestión del conocimiento, conocimiento, América Latina.

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Introduction

Today's world is exposed to a great number of risks, old ones, and completely new ones, such as COVID-19. Particularly the latter has revealed the vulnerability of organisations regardless of size and type. Additionally, with the progressing digital integration of organisations, entire supply chains bear a number of additional risks and threats, e.g., in the form of cyberattacks, which organisations have to address. The Allianz Risk Barometer 2020, for example, published before the pandemic, ranked cyber incidents as the number one business risk for the first time. Many of these risks and threats are increasingly related to knowledge which, in turn, not only underlines the need for risk management in general but also an updated approach to risk management, i.e., one that covers knowledge risks, as well. Having access to knowledge that is relevant and up-to-date is critical for all organisations (Spender, 1996), yet it is also important to understand that knowledge is not always positive, i.e., something of value, but has a risky side as well (Durst & Wilhelm, 2013). For example, recent developments, such as progressive digitalisation, as well as the current pandemic, have increased the probability that knowledge that once had been an organisation's asset, that is, something of value, has become something of reduced value or has become entirely worthless. Thus, a lack of updated and relevant knowledge can hamper the sustainable development of organisations.

Although the role of knowledge in organisational performance is generally acknowledged and has been explored extensively, the study of risks related to knowledge or knowledge risk management (KRM) is still in its infancy (Durst & Zieba, 2020; Massingham, 2010). Recently, researchers have started to examine various types of knowledge risks, such as the risk of knowledge loss (Durst & Wilhelm, 2011; Joe et al., 2013; Martins & Martins, 2011; Treleaven & Sykes, 2005), knowledge leakage (Ahmad et al., 2014; Mohamed et al., 2007; Parker, 2012), knowledge hiding (Cerne et al., 2014; Connelly et al., 2012; Connelly & Zweig, 2014), or risks related to outsourcing (Hoecht & Trott, 2006; Williams & Durst, 2019). These efforts are to be welcomed; these studies have addressed very specific issues and thus produced only fragmented insight into the topic. What is missing is empirical insight into how organisations perceive and manage possible risks related to knowledge; a situation that refers to all regions of the world. Against this background, the present exploratory paper aims to provide an initial understanding of knowledge risks management in organisations from different Latin American countries by describing whether and to what extent knowl-

edge risk management is practiced in these organisations. Thus, the present study makes the following contributions. First, by focusing on knowledge risks and knowledge risk management it contributes to a more balanced study of knowledge management. Second, it contributes to recent research efforts that investigate knowledge risk management in organisations in its entirety (Durst et al., 2019), thus it tries to tackle the fragmentation identified in the current study of knowledge risks and knowledge risk management. Finally, by focusing on organisations located in Latin America, the present study contributes to the diversity of the study of knowledge (risk) management which still has a tendency to be carried out in the Western World (i.e., North America and Europe), Oceania and Asia, predominately in Japan and China.

Theoretical Background

Generally, risks can be divided into financial and non-financial risks. The word "financial" signals that the former classification refers to a relationship with something monetary and quantifiable, whereas the latter does not. Risks related to knowledge can be assigned to both financial and non-financial risks.

More precisely, knowledge risks, which is the main focus of this study, constitute a wide category of knowledge-related challenges that organisations, regardless of size and type, may face. Currently, there are not many definitions of knowledge risks found in the literature. One of the exceptions is the definition proposed by Zieba & Durst (2018) who define knowledge risk as "a measure of the probability and severity of adverse effects of any activities engaging or related somehow to knowledge that can affect the functioning of an organisation on any level" (p. 256). This definition stresses that knowledge risks can have an adverse influence on an organisation's operations. All organisations are exposed to (knowledge) risks, but not always to the same type or intensity (Kim & Vonortas, 2014). Even more important, there is an interdependence of risks, i.e., one risk can lead to various other risks (Venkatesh et al., 2015). Thus, there is a need for systematic risk management that continuously identifies and analyses all risks the organisation in question is exposed to and, based on the outcomes, initiate measures to cope with the serious risks.

Extant research suggests that many forms of risk could be viewed as knowledge risks such as knowledge loss; knowledge leakage; knowledge spillover; knowledge outsourcing risks; knowledge waste; knowledge hiding; knowledge hoarding; risks related to unlearning and/or forgetting.

Knowledge loss is any kind of knowledge deficit that appears either as a direct consequence of not possessing knowledge anymore (e.g., due to a computer system failure) or an indirect one (e.g., an employee leaving a company or being ‘stolen’ by a competitor). Knowledge leakage (which is a sub-form of knowledge loss) can be defined as “the deliberate or accidental loss of knowledge to unauthorised personnel within or outside of an organisational boundary” (Annansingh, 2012, p. 269). Knowledge spillover takes place when valuable knowledge spills out of an organisation for the benefit of its competitors (Zieba & Durst, 2018). As far as knowledge outsourcing risks are concerned, they relate to a situation when as a result of transferring a business activity to an external contractor, the organisation might lose its skills and capacities to perform valid functions itself (Agndal & Nordin, 2009). Among other described knowledge risks, one can find knowledge waste, knowledge hiding, and knowledge hoarding. The first relates to a situation where an organisation does not make use of the available and useful knowledge in its possession (Durst & Zieba, 2017). It may manifest itself in the form of reinvention, lack of system discipline, or scatter (Ferenhof et al., 2015). Knowledge hiding and knowledge hoarding are related in the sense that they are acts of withholding knowledge, but the difference is that knowledge hiding is the case when an employee intentionally does not share the knowledge he or she was asked for, while knowledge hoarding is when the knowledge has not been directly requested (Webster et al., 2008).

The last two mentioned risks, related to unlearning and forgetting, are connected with losing knowledge either as a deliberate or accidental process. Unlearning can be necessary to make room for new knowledge, but can result in a lack of important knowledge (Cegarra-Navarro et al., 2013). Forgetting can be accidental (e.g., memory loss) or deliberate (e.g., purposively forgetting traditional methods and approaches in order to learn new ones).

Apart from these knowledge risks that are presented in the literature in various forms, there is a group of knowledge risks that are not so well defined. They are connected to improperly applying knowledge or using unreliable knowledge. There is also a new group of knowledge risks stemming from the development of the Internet and the increasing availability and use of new information and communication technologies (ICTs). These new developments and their usage can bring about not only opportunities but also threats to organisations. Examples are the risk of using unreliable information or fake news; the risk of applying knowledge improperly; risks related to social media; risks related to cyber-crime as well as risks related to progressive digitalisation. To organise differ-

ent types of knowledge risks and their connections, Durst & Zieba (2018) proposed a map highlighting knowledge risks that can be ascribed to human, technological, and operational. According to these authors, human knowledge risks relate to a person and their personal, social, cultural, and psychological factors. Therefore, this dimension of knowledge risk covers issues related to human resource management, in particular. Technological knowledge risks can result from the use of various technologies, including ICTs. Knowledge risks assigned to this dimension may also be caused by the use of old or outdated software and/or hacker attacks. Finally, operational knowledge risks refer to all the risks resulting from an organisation’s day-to-day operations and its overall functioning, e.g., outsourcing certain business functions such as product design and entering into collaborative agreements. The application of wrong or obsolete knowledge in business operations could also be mentioned.

Like any risk, knowledge risks should also be actively managed. KRM has been defined as a systematic way of applying tools and techniques to identify, analyse and respond to risks associated with the creation, application, and retention of organisational knowledge (Durst et al., 2016).

As with knowledge risks, research on KRM is still underdeveloped (Durst et al., 2019; Massingham, 2010), a situation that is surprising considering the strategic importance assigned to knowledge (Grant, 1996). For example, Durst (2019) reviewed the extant literature on knowledge risks and related issues. The study was based on 52 articles assigned to ten broad subject matters: awareness-raising; conditions for improved KM/KRM; frameworks for improved knowledge risk management; knowledge loss; measurement; the relationship between KRM and performance; theory development; tools supporting the management of knowledge risks in business operations; the trade-off between investment in KRM and benefits and other types of knowledge risks. Amongst others, the author calls for more empirical research aimed at supporting the emerging theory/body of knowledge in the field. Addressing this call, Durst et al. (2019) empirically examined the effect of KRM on organisational performance. Their findings suggest that both public and private organisations can benefit from KRM.

Methods

The data used in the present study were collected between September 2017 and January 2018. The collection method took the form of an online questionnaire, using QuestionPro software. The questionnaire consisted primarily of closed-ended questions, i.e., several options

were provided (in some cases the respondents were also offered the possibility of giving additional answers), and was divided into four sections. These sections covered general questions regarding knowledge management and risk management, as well as specific questions related to knowledge risks, their management, and the consequences of lacking KRM. Additionally, demographic data was collected, such as the year of an organisation's foundation, type of organisation, location, and number of employees. The questions assigned to the different sections were intended to help develop an understanding of whether and to what extent knowledge risk management is practiced in private and public organisations; thus, they were put forth to meet the purpose of the study.

Given the novelty of the topic in focus, it was not possible to rely on an existing questionnaire. Thus, there was a need for new items to be developed or existing ones from related areas to be amended. Yet, whenever possible care was taken to access previous research on knowledge risks/knowledge risk management/knowledge management/risk management (Durst & Zieba, 2017 concerning the list of knowledge risks; Durst et al., 2018 on the consequences of missing KRM activities; and Henschel & Durst, 2016 concerning questions related to risk management).

Once the questionnaire had been constructed, it was pre-tested to check the order of the questions, their comprehensibility, and appropriateness for being answered within a certain period (max. 30 minutes). Moreover, the pre-test was seen as a means to moderate the weaknesses of self-administered surveys (Saunders et al., 2007). The pre-test involved two management professors and two individuals from the companies.

To access possible participants, convenience sampling was used. More precisely possible respondents were informed about the survey through extant professional networks and connections on LinkedIn and Facebook. In addition, personal contacts were used to send personal invitations to participate in the survey. Using convenience sampling is a common approach in research on knowledge management (e.g., Arain et al., 2018; Wang & Yang, 2016). This non-probability sampling technique is considered suitable when collecting a general overview of the phenomenon of interest (Chong et al., 2011). Considering the growing problem with establishing access to study participants and the general low response rate of quantitative studies (Bryman & Bell, 2011), a mix of methods for obtaining access to respondents was applied. Although the questionnaire involved several different response options, such as yes/no answers or Likert scales, a concern with self-constructed questionnaires may arise

based on common method variance (CMV). However, the test conducted suggested that CMV does not appear to be a drawback in the present study.

Given the dominance of research on knowledge management in the Western World, Oceania, and Asia as mentioned before, a focus on Latin America was considered suitable given the relative size of this part of the world. By focusing the overall study of knowledge (risk) management on other parts of the world, the likelihood that it benefits in terms of diversity increases. Given the still ongoing pandemic, there might be an even stronger need to focus on Latin America in order to understand what both public and private organisations are doing concerning knowledge risk management.

Data collection led to a total of 88 responses from organisations located in Latin America. The countries involved are Brazil, Colombia, Cuba, Mexico, Paraguay, Peru, Uruguay, and Venezuela. The majority of the responses were from Brazil, i.e., 84 % of all responses.

For data analysis, SPSS 22 software was used. The examination presented in the following section is based on univariate analysis such as frequency, percentages, means, and standard deviations.

Presentation of Findings

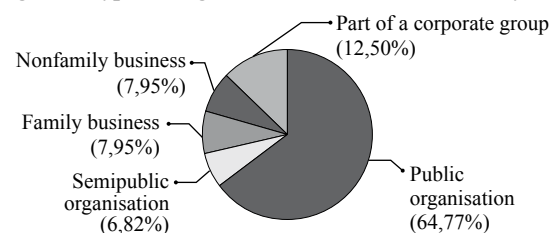
In this section, the descriptive findings of the survey are presented, starting with some general information regarding the participating organisations, before turning to KRM related aspects.

General Information Regarding The Participating Organisations

The organisations involved were founded on average in 1978 and had an average of 5.409 employees at the time of the study.

Concerning the type of organisation involved, Figure 1 shows that several different types of organisation participated in the survey, which can be viewed as a promising finding, as KRM should be an issue that should concern any type of organisation. Moreover, one can see the dominance of public organisations involved in the sample.

Figure 1. Types of organisations involved in the survey



Additionally, participants were asked to assess the organisation's performance in relation to its competitors along with a number of items offered. The findings are presented in Figure 2.

The findings presented in Figure 2 leave the impression that the organisations involved in the study are more successful, more profitable, and grow faster than their competitors.

Knowledge Risk Management in Organisations

Given the focus of this study on KRM, it was also viewed as relevant to learn whether the participating organisations have established knowledge management (KM) and risk management (RM). Thus, two questions are aimed at capturing the existence or absence of KM and RM. With regard to KM, 56.8% of the participating organisations reported that their respective organisations have KM, 31.8% responded in the negative, while the remaining 11.4% stated that they did not know. An additional question related to KM inquired whether the organisation's KM activities contribute to the overall firm performance, leading to a mean of 3.76 with a standard deviation (SD) of 1.04 on a Likert scale of 1 (disagree) to 5 (totally agree).

This promising picture changed when asked about RM, 26.4% of the participating organisations reported that their respective organisations have RM, 40.2% responded in the negative, while the remaining 33.3%

stated that they did not know. Those participants who reported that RM is carried out in the organisation were also asked if the organisation's RM considers knowledge risks as well. In total 26.3% confirmed this, while 14.0% replied in the negative, and 59.6% reported that they did not know. Additionally, these participants were asked whether the organisation has an in-depth understanding of its critical knowledge. In total 40% answered in the positive, 21.8% in the negative, and 38.2% of them indicated they did not know. Thus the participating organisations' RM activities seem to lag behind, when compared to KM activities.

Knowledge Risks Identified in the Organisations

Given the paper's focus on risks related to knowledge, the participants were asked to report with regard to the knowledge risks that are covered by the organisation's risk management and to capture this information the participants were offered a range of options. The participants could also suggest additional knowledge risks. Yet, none of them made use of this possibility. The findings are presented on Table 1.

As shown on Table 1, the knowledge risks most often incorporated in the participating organisations were the *risk of using unreliable or unreliable information* (10.4%) and *knowledge loss* (9.8%), and the least commonly used were *risks of spillover* and *knowledge outsourcing* (3.4% each) and *knowledge hiding* (2.5%).

Figure 2. Assessment of the performance of the organisation in relation to its competitors

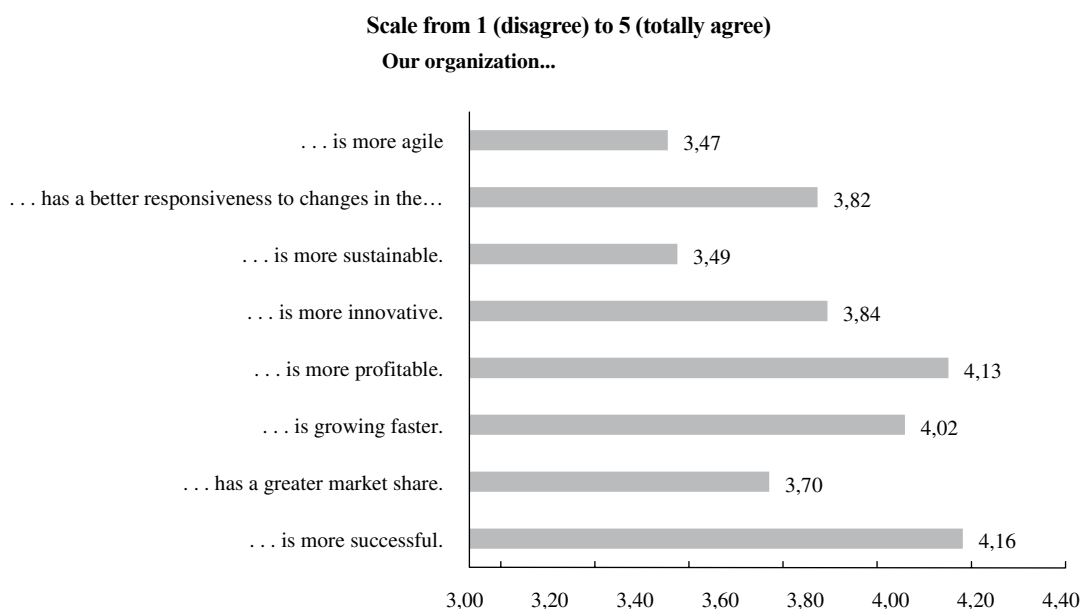


Table 1. Types of knowledge risks addressed in the organisations

Knowledge risks	N	Percent
Knowledge loss	32	9,8%
Knowledge leakage	18	5,5%
Knowledge spillover	11	3,4%
Knowledge outsourcing risks	11	3,4%
Risks related to knowledge gaps	22	6,97%
Relational risks	14	4,3%
Risk of using disinformation or unreliable information	34	10,4%
Risk of improperly applying knowledge	29	8,9%
Risks related to unlearning	19	5,8%
Risks related to forgetting	19	5,8%
Knowledge waste	23	7,1%
Risks related to social media	25	7,7%
Risks related to cyber-crime	26	8,0%
Risks related to digitalisation	14	4,3%

Approaches to Analysing Risks Related to Knowledge

An important step of risk management is the analysis of the risks identified (Vaughan & Vaughan, 2001). Therefore, participants were asked to specify the approaches used to analyse the quality (i.e., likelihood of occurrence) of the risks related to knowledge in their organisations (Table 2). As before, several options were provided; the participants could also add additional methods used. As can be seen, the approaches most often indicated were the *Delphi technique* (17%) and *root cause analysis* (16%). The ones that are rarely used were *checklist analysis* (4.9%) and *brainstorming* (4.4%). No additional methods were named.

Table 2. Overview of analytical approaches to knowledge risks analysis

Analytical approaches	N	Percent
SWOT Analysis	28	13,6%
Brainstorming	9	4,4%
Delphi technique	35	17,0%
Interviewing	17	8,3%
Root cause analysis	33	16,0%
Checklist Analysis	10	4,9%
Assumptions Analysis	11	5,3%
Influence diagrams	23	11,2%
System or process flow charts	28	13,6%
Expert Judgment	12	5,8%

As with the case of risk management, knowledge management should be an ongoing and systematic activity in all kinds of organisations and the participants were asked whether or not they are continuously monitoring risks related to knowledge. In total 19.8% responded in the positive, while 44.2% in the negative, and the remaining

36% reported that they did not know whether or not this is done. 11,5% reported that the company had implemented a risk response plan, while 65,5% reported that they had not, and the remaining 23% declared that they did not know.

Reporting risks connotes another relevant step in RM (Vaughan & Vaughan, 2001). 83,33% of the participants stated that they continuously report on their KRM activities, while the remaining 16.7% responded in negative.

In terms of the target audience(s) of these reports, the information gathered shows that KRM activities are mainly reported to the top management/leadership, followed by the departments concerned and the middle management.

Consequences of Lacking Knowledge Risk Management Activities

To gather information about the possible downsides, i.e., negative consequences, of not having measures related to KRM, the participants were invited to assess a selected number of possible consequences. The findings are presented on Table 3 (multiple answers were possible).

Table 3. Consequences of lacking KRM

Consequences	Responses	Percent
Reduced capacity to innovate	27	10,4%
Threatened ability to pursue strategies	37	14,3%
Undermined strategies caused by reduced efficiency	31	12,0%
Lost knowledge has given other actors an advantage	44	17,0%
Increased vulnerability	46	17,8%
Reduced quality of products or services	54	20,8%
Demotivated staff	3	1,2%
Other	17	6,6%

As can be seen on Table 3, the most frequently indicated consequences were *reduced quality of products or services* (20,8%), followed by *increased vulnerability* (17,8%), and *lost knowledge has given other actors an advantage* (17%). As the least indicated consequence, *demotivated staff* (1.2%) was mentioned.

Discussion and Conclusions

This paper has empirically investigated whether and to what extent organisations located in selected Latin American countries manage knowledge-related risks. Based on a diverse sample that included both private and public organisations, the findings show that the participating organisations have identified a variety of knowledge risks and used different ways of analysing them. These are promising findings, as they suggest that participating organisations are not only aware of knowledge risks but also of

different types of knowledge risks; thus, different types of risks. At the same time, however, the findings indicate that only a small number of organisations manage these knowledge risks. The same refers to risk management. Here, too, only a small number of organisations seem to have implemented RM in their organisations. These findings are disquieting considering the increasing number of risks organisations of all kinds are exposed to (Kim & Vonortas, 2014); old ones and completely new ones, such as COVID-19.

On the basis of the findings obtained, it can be concluded that there exists clear potential for improvement in public and private organisations in Latin America regarding the phenomenon under investigation. Having a systematic approach to knowledge risk management is likely to support organisations in better addressing the mentioned negative consequences of lacking KRM, such as reduced quality of products or services, increased vulnerability, and lost knowledge, providing other actors an advantage. Additionally, as COVID-19 has shown the relevance of having access to updated, relevant and reliable knowledge and information, organisations regardless of size and type should have systematic approaches to both knowledge management and risk management; ideally, these approaches are integrated. Given the situation in which Latin America has often been hit by different crises in the past, COVID-19 being the most recent, the present findings suggest that a rigorous study of KRM could be both important and timely.

Against this background, the author believes that the exploratory study presented has both theoretical and practical implications. From a theoretical point of view, the study makes a contribution to the emerging body of knowledge regarding knowledge risks and knowledge risk management by providing initial empirical insight into the practices of both public and private organisations in Latin America (Durst et al., 2019). Moreover, by having received responses predominately from public organisations, the present research contributes to the studies of both risk management and knowledge management in the public sector; both represent underdeveloped fields of study—for the study of risk management (Kim & Vonortas, 2014), and the study of knowledge management in the public sector (Durst et al., 2018). Additionally, by collecting data from several Latin American countries, the author gained a deeper understanding of the KRM practices undertaken by organisations located in this part of the world. Finally, by having focused on Latin America this study contributes to more diversity in the general research on knowledge (risk) management.

From a practical point of view, the study may be of interest to practitioners (i.e., owners, managing-directors,

and managers) as they also not only obtain information regarding different types of knowledge risks but also ideas about ways of how to analyse them. What might be even more important, they also get some information regarding possible negative consequences when KRM activities are lacking. Against the relevance of knowledge for remaining successful and the increasing number of threats, organisations are exposed to, the incorporation of risks related to knowledge is viewed as of utmost relevance. Based on the findings, practitioners are advised to carefully check whether their approaches to (knowledge) risk management are still adequate for mastering present (e.g., COVID-19 and its consequences) and forthcoming challenges.

As with all studies, the present study is not without limitations. First, given the exploratory nature of the present study, no final or conclusive discussions and solutions could be presented, yet the insights gained can help inform future research. Second, it must be highlighted that through the use of personal contacts a bias may have been created meaning that primarily people (organisations) with a particular interest in KM have been covered. On the other hand, this could have somewhat reduced the danger that the wrong persons answered the questionnaire, i.e., a person who is not familiar with the topic under investigation. Third, given the diversified sample included in the article, additional analysis focusing on the role of contextual differences should be conducted; a comparison with samples from other regions of the world would also be promising. Given the differences between private and public organisations, there is a clear need for future research that also addresses these differences in more detail. The same refers to differences within the sectors; as regards the public sector, for example, one would expect different knowledge risk management practices in health care and education or military and law enforcement. Finally, future (follow-up) research should also apply more sophisticated statistical techniques.

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