



How Well Do Organisations Understand the Knowledge That Could Be Lost

Marta Mancilla

*International School for Social and Business Studies, Slovenia
marta.mancillao@gmail.com*

Purpose: This study aims to identify the type of knowledge considered the most critical knowledge available at each organisational management level, as well as the knowledge at-risk in Mexican organisations by the different management levels.

Study design/methodology/approach: Data were collected by a structured questionnaire to employees of various organisations in different sectors established in Mexico, either SMEs or transnational companies based in Mexican territory. Our research includes more than 200 responses as a result of our survey.

Findings: The findings of our research highlight that strategic/critical knowledge is considered one of the most important types of knowledge an organisation has also regarded as being the knowledge with a higher risk of being lost. Surprisingly most of the respondents at any organisational management level didn't consider institutional knowledge important, which was unexpected since many competitive advantages are based on this knowledge.

Originality/value: There has been a lack of studies focused on the knowledge identification, transference, and leakage of the different types of knowledge the organisations have especially the most critical and at-risk knowledge that could affect their productivity and efficiency. Therefore, our study seeks to identify the knowledge at risk at each organisational management level and raise awareness of the knowledge that needs to be preserved in the organisations.

Introduction

In this new era where organisations are now evolving, knowledge has become one of the most important assets that help improve their performance. Agreeing with Drucker's (1999) statement that the most valuable asset of a 21st-century institution would be its knowledge workers and their productivity. Tanriverdi and Venkatraman (2005) consider that knowledge has become the key economic resource and the only source of competitive advantage. Dawson (2000) argues that basic value-creating processes in an organisation are based on knowledge.

In this knowledge-based economy, creation, acquisition and optimum use of knowledge are crucial factors in an organisation (Jacobsen, 2004). As Feiz et al. (2019) express, one of the organisational memory capabilities is its ability to collect, transfer and apply the produced knowledge through experience.

Knowledge is the source of an organisation's competitive advantage; therefore, the organisation should pay attention to identifying and retaining its critical knowledge (Massingham, 2018). Knowledge is stored in various ways and transferred through different mechanisms. Nonaka and Takeuchi (1995) stated that "an organisation cannot create knowledge on its own without individuals". Therefore, knowledge assets comprise human (individuals, teams), structural (strategies, policies, processes, procedures) and technologies that support knowledge sharing (Hazlina et al., 2019).

Knowledge creation occurs when new knowledge is generated in an organisation and relates to the interplay between data, information and knowledge. Information is data to which an individual attributes significance. Therefore, knowledge requires the individual first to articulate all available information and then make it actionable by incorporating it into the decision-making process (Perrin & Rolland, 2007).

Argote et al. (2003) found that more knowledge sharing is not always better. That's one of the main reasons that make us state the importance of identifying the employees with the valuable knowledge as the most important knowledge that needs to be preserved. The organisations developing in this now-called knowledge economy or knowledge society need to identify the knowledge events and knowledge workers that are vital in developing their competitive advantage. As some studies show, to have the edge over their competitors, organisations must take conscious action to tap the knowledge of the intellectuals and understand the impact of knowledge loss at the individual, group and organisational levels (Zaied et al., 2012).

Literature review

"Knowledge management is the identification, storage, protection of knowledge for future operational and strategic benefit of the organisation; this may be implicit or explicit." (Perrott, 2007). Jennex et al. (2007) stated that capturing the proper knowledge is necessary for success in Knowledge Management (KM), and therefore, specific knowledge needs to be identified correctly. Knowledge Management is widely acknowledged as a tool for sustaining a competitive edge (Gupta & Chopra, 2018).

Perrot's definition of KM describes two main types of knowledge, implicit and explicit (Nonaka & Takeuchi, 1995). It is essential to clarify the difference between these two types of knowledge. While implicit or tacit knowledge is embedded in the human minds from experience and work and often communicated personally, explicit knowledge is codified. Therefore, it can be more easily shared and reused and frequently available throughout the organisation.

There are many studies describing different categories of implicit and explicit knowledge. Others, such as Grant (1996), suggest avoiding the debate on this difference and instead focusing on the characteristics of knowledge that have implications for management. McIver & Wang (2016) also recommend treating knowledge as an umbrella term with many subparts in need of deconstructing.

Stephen Drew (1999) presented four classifications of business knowledge:

- 1) What We Know We Know .- Emphasis on knowledge sharing, access and inventory.
- 2) What We Know We Don't Know .- Emphasis on knowledge seeking and creation.
- 3) What We Don't Know We Know.- Emphasis on uncovering hidden tacit knowledge.
- 4) What We Don't Know We Don't Know.- Emphasis on discovering key risks, exposures and opportunities.

Based on these 4 classifications, we first want to distinguish between operational and strategic knowledge. While operational knowledge is concerned with the day-to-day activities of running the business, strategic knowledge is essential to major decisions an organisation must take to become successful. Therefore, and treating knowledge as an umbrella, as McIver & Wang (2016) suggest, we decompose operational knowledge and strategic knowledge for our purpose in the following categories:

Process knowledge or Procedural knowledge is defined by several authors (Sitzmann, 2011), (Hadjimichael & Tsoukas, 2019) & (Chen et al., 2019) as the knowledge that is specific to each organisation within the sector and is related to how things are done in each organization.

Institutional knowledge is described as amplified knowledge created by individuals and connecting it to the organisation's knowledge system (Nonaka & Krogh, 2009), (Wang, 2019) & (Abu-Shanab et al., 2014), also known as Organisational memory, which can be understood as "the means by which organisational knowledge from the past is brought to bear on activities

in the present, resulting in higher or lower levels of organisational effectiveness" (Stein & Zwass, 1995).

Hence, managerial or strategic knowledge pertains to a higher level of understanding of the business and often involves planning a strategy for the organisation as a whole (Bennett, 1998) (Yim et al., 2004) (Erhardt & Harkins, 2013). It's the knowledge that has been acquired mostly through experience during the years, and many of the strategic decisions making processes are based on this knowledge.

Relationship knowledge, also called Relational capital, defined by Thomas Stewart (2010) as the knowledge that has been gained through an organisation's relationship with the people it does business with and is, therefore, the knowledge embedded in the relationships with customers and suppliers, and broadly includes stakeholders and strategic alliance partners (Ordóñez de Pablos, 2002).

Many authors explain expert subject domain knowledge, Experience or Technical knowledge (Nurye et al., 2019), (Tsoukas, 2011) & (Kale et al., 2000) as practical knowledge from the experts learned through practice, individual tacit knowledge acquired by the practitioners through their agency in the organisation and interaction with peers, managers and customers.

Knowledge Management concerns the nature and uses of knowledge within organisations (Nonaka & Takeuchi, 1995). A growing amount of research provides evidence that a key to achieving a competitive advantage is understanding how organisations manage what they know or need to know (Yim et al., 2004). However, it is not simply a matter of knowing facts, but knowing which facts are relevant to what situation and acting on that knowledge completely (Dreyfus, 2007).

Knowledge loss can be defined as the intentional or unintentional evaporation of knowledge (Perrott, 2007). Knowledge loss can occur as a result of many situations, employee exit (Lin et al., 2016), loss of codified knowledge or decay over time (Omotayo, 2015) 7/17/2022 9:45:00 PM, failure to capture critical knowledge or forgetting the knowledge (Lin et al., 2016). On the other hand, employees' exit can be either to retirement, turnover, disability or job change (Jennex, 2014).

Massingham (2018) described that employees with valuable knowledge might take the organisation's human capital with them if they leave, generating a possibility of losing the knowledge that is unique and difficult to imitate or replace. Knowledge loss occurs when an individual with valuable knowledge exits an organisation, negatively impacting the organisational memory and resulting in declining capability, output and productivity (Lin et al., 2016). Therefore, identifying and capturing critical knowledge has become essential for an organisation because of consistent knowledge loss due to employee departure (Massingham, 2008).

Beazley et al. in 2002 stated that over the next 18 years, a baby boomer would reach retirement age every 18 seconds (Beazley et al., 2002), which means that today organisations are at a latent risk of losing valuable knowledge, especially tacit knowledge, not that they already have. This simple fact should raise awareness among managers of the risky situation their organisations could be in.

Loss of knowledge can have detrimental consequences for any organisation due that when employees leave or move to another unit or responsibility, they are likely to take away with them years of experience and valuable knowledge that could be priceless to their organisations (Du Plessis, 2005) & (Hofer & Alfeis, 2008). For example, praise et al. (2006) estimated that more than 1 million dollars was the value of the knowledge lost by a U.S. 500 Fortune company when one experienced marketing manager left the organisation.

After a knowledge worker leaves her/his area of expertise, the employees that stay need to recuperate or create new knowledge, so the company keeps working as it did before the move. Therefore, knowledge workers constantly expend time and other resources to find or recreate crucial bits and pieces of these lost organisational memories (Mariano et al., 2018) (Wallace, 2005). Previous research identified various negative impacts caused by knowledge loss, such as reduced organisational output (Droege & Hoobler, 2003), decreased performance (Lin et al., 2016) and lost organisational memory (Shah, 2000), among others.

As Beazley et al. stated (2002), the key to measuring the impact of knowledge loss is identifying the critical knowledge created in each area and how survivors use that knowledge in their work. Therefore, an important step in knowledge retention is determining the critical "at risk" knowledge (Leibowitz, 2009). It can be very challenging for organisations to successfully identify and retain valuable industry and company knowledge (Durst & Wilhelm, 2013), (Massingham, 2008), (Bender & Fish, 2000), (Cattani et al., 2013) & (Giacosa et al., 2017). That's why managers should be tasked with identifying the at-risk positions and then developing a plan to identify a successor (Jennex, 2014).

The literature reveals that organisations do not have systematic procedures to assess the knowledge of departing employees (Jennex, 2014). Furthermore, though organisations are constantly investing in activities related to knowledge creation, retention of critical knowledge is a neglected task, according to Sumbal et al. studies (2018).

Various studies (Yim et al., 2004), (Bennett, 1998), (Chen et al., 2019) & (Edwards et al., 2000) define the characteristics of Knowledge Management in an organisation shown in Table 1. Based on theoretical statements made in these previous studies, we propose that the knowledge used or created at each management level should be considered the most important by the workers of that organisational management level.

There has been a lack of studies that show managers' awareness of the type of knowledge that could be at-risk in each organisational management level (OML) in accordance with the knowledge used or created in each OML.

The literature fails to answer these two issues regarding the type of knowledge that could be at-risk in each organisational management level, either top, middle or operational, as the type of knowledge considered the most important in each OML. Therefore, based on Table 1, we raise the following two hypotheses:

H1. There are differences between the types of knowledge considered the most important in each organisational management level.

H2. There are differences between the types of knowledge considered at-risk at each organisational management level.

Table 1: Characteristics of KM in an organisation adapted from (Yim et al., 2004)

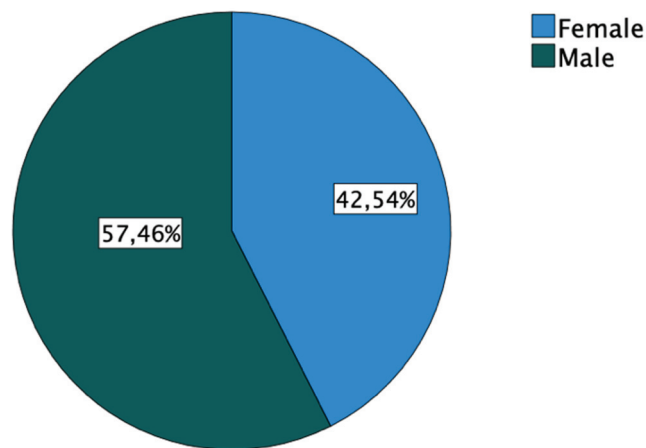
	Top Management	Middle Management	Operational Management
Applications of knowledge	Decision making, strategic planning.	A departmental or divisional task, decision making.	Individual task.
Types of knowledge used or created.	Strategic and Institutional Knowledge.	Relationship, Expert subject domain and Institutional knowledge.	Process, Expert subject domain, and Institutional Knowledge.

Composition of knowledge used or created.	Tacit knowledge is greater than Explicit knowledge.	Tacit knowledge is more or like equal to Explicit knowledge.	Explicit knowledge is greater than Tacit knowledge.
Areas of knowledge	Overall organisation.	Department or division.	Individual task.

Methodology research

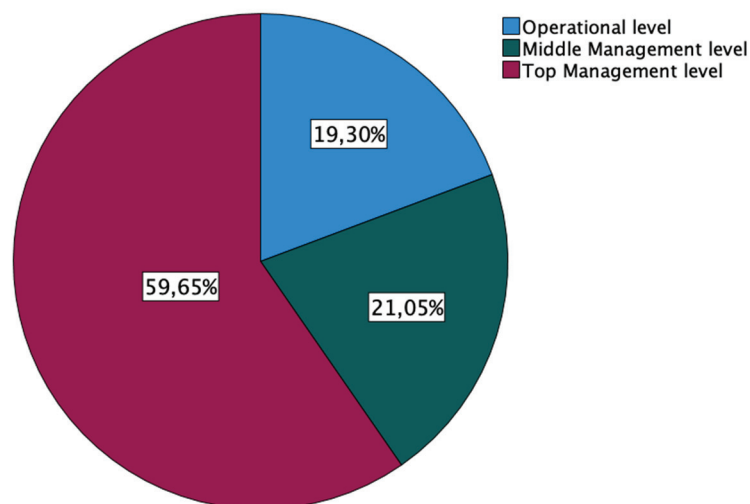
The primary purpose of this study is to identify the knowledge considered the most important in each organisational management level as the knowledge considered at-risk in each OML. A questionnaire was disseminated to more than 800 respondents having more than 200 valid responses to use in our study, having a 28% rate response. All respondents work in different companies based in México.

Figure 1: Respondents' gender distribution



Of the more than 200 valid responses, more than 57% of the participants are male, as shown in Figure 1. On the other hand, as shown in Figure 2, almost 60% of the respondents belong to the top management level. We used IBM SPSS software to analyse our data to perform our analysis and a significance value of 0.05.

Figure 2: Organisational management level



We will analyse the results of our research by the different types of knowledge: Strategic, Institutional, Relationship, Expert subject domain and process, used in each organisational management level. Table 2 shows the sub-hypotheses developed according to each knowledge described above.

Table 2: Sub hypotheses according to the type of knowledge studied.

Type of knowledge	H1 There are differences between the types of knowledge considered the most important in each organisational management level.	H2. There are differences between the types of knowledge considered at risk at each organisational level.
Strategic knowledge	H1(a)	H2(a)
Institutional knowledge	H1(b)	H2(b)
Relationship knowledge	H1(c)	H2(c)
Expert subject domain knowledge	H1(d)	H2(d)
Process knowledge	H1(e)	H2(e)

Table 5 shows the frequencies of the results of our research regarding the type of knowledge the respondents considered the most important to each organisational management level, as Table 3 shows the knowledge considered the most important to each organisational management level by respondents' management level.

Table 3: Most important knowledge considered to each organisational management level by respondents' management level.

			Frequency	Percent	Valid Percent	Cumulative Percent
Operational Level	Strategic Knowledge	Operational Level	10	18.2	22.7	22.7
		Middle Management	2	3.6	4.5	27.3
		Top Management	32	58.2	72.7	100.0
		Total	44	80.0	100.0	
	Institutional Knowledge	Operational Level	8	14.5	18.2	18.2
		Middle Management	23	41.8	52.3	70.5
		Top Management	13	23.6	29.5	100.0
		Total	44	80.0	100.0	
	Relationship Knowledge	Operational Level	5	9.1	11.1	11.1
		Middle Management	20	36.4	44.4	55.6
		Top Management	20	36.4	44.4	100.0
		Total	45	81.8	100.0	
	Expert subject domain knowledge	Operational Level	37	67.3	82.2	82.2
		Middle Management	3	5.5	6.7	88.9
		Top Management	5	9.1	11.1	100.0
		Total	45	81.8	100.0	
	Process Knowledge	Operational Level	28	50.9	62.2	62.2
		Middle Management	8	14.5	17.8	80.0
		Top Management	9	16.4	20.0	100.0
		Total	45	81.8	100.0	
Middle Management	Strategic Knowledge	Operational Level	6	10.0	12.0	12.0
		Middle Management	12	20.0	24.0	36.0
		Top Management	32	53.3	64.0	100.0
		Total	50	83.3	100.0	
	Institutional Knowledge	Operational Level	5	8.3	10.2	10.2
		Middle Management	23	38.3	46.9	57.1
		Top Management	21	35.0	42.9	100.0
		Total	49	81.7	100.0	
	Relationship Knowledge	Operational Level	7	11.7	13.7	13.7
		Middle Management	21	35.0	41.2	54.9
		Top Management	23	38.3	45.1	100.0
		Total	51	85.0	100.0	
	Expert subject domain knowledge	Operational Level	27	45.0	52.9	52.9
		Middle Management	17	28.3	33.3	86.3
		Top Management	7	11.7	13.7	100.0
		Total	51	85.0	100.0	
	Process Knowledge	Operational Level	25	41.7	50.0	50.0
		Middle Management	18	30.0	36.0	86.0
		Top Management	7	11.7	14.0	100.0
		Total	50	83.3	100.0	
Top Management	Strategic Knowledge	Operational Level	13	7.6	9.1	9.1
		Middle Management	13	7.6	9.1	18.2
		Top Management	117	68.8	81.8	100.0
		Total	143	84.1	100.0	
	Institutional Knowledge	Operational Level	19	11.2	13.6	13.6
		Middle Management	72	42.4	51.4	65.0
		Top Management	49	28.8	35.0	100.0
		Total	140	82.4	100.0	
	Relationship Knowledge	Operational Level	20	11.8	14.0	14.0
		Middle Management	63	37.1	44.1	58.0
		Top Management	60	35.3	42.0	100.0
		Total	143	84.1	100.0	
	Expert subject domain knowledge	Operational Level	65	38.2	45.1	45.1
		Middle Management	48	28.2	33.3	78.5
		Top Management	31	18.2	21.5	100.0
		Total	144	84.7	100.0	
	Process Knowledge	Operational Level	57	33.5	39.9	39.9
		Middle Management	63	37.1	44.1	83.9
		Top Management	23	13.5	16.1	100.0
		Total	143	84.1	100.0	

Table 4: Most critical knowledge considered at-risk by respondents' management level.

			Frequency	Percent	Valid Percent	Cumulative Percent
Operational Level	Strategic Knowledge	No	32	58.2	71.1	71.1
		Yes	13	23.6	28.9	100.0
		Total	45	81.8	100.0	
	Institutional Knowledge	No	42	76.4	93.3	93.3
		Yes	3	5.5	6.7	100.0
		Total	45	81.8	100.0	
	Relationship Knowledge	No	27	45.0	52.9	52.9
		Yes	24	40.0	47.1	100.0
		Total	51	85.0	100.0	
	Expert subject domain knowledge	No	19	34.5	42.2	42.2
		Yes	26	47.3	57.8	100.0
		Total	45	81.8	100.0	
	Process Knowledge	No	31	56.4	68.9	68.9
		Yes	14	25.5	31.1	100.0
		Total	45	81.8	100.0	
Middle Management	Strategic Knowledge	No	42	70.0	82.4	82.4
		Yes	9	15.0	17.6	100.0
		Total	51	85.0	100.0	
	Institutional Knowledge	No	44	73.3	86.3	86.3
		Yes	7	11.7	13.7	100.0
		Total	51	85.0	100.0	
	Relationship Knowledge	No	27	45.0	52.9	52.9
		Yes	24	40.0	47.1	100.0
		Total	51	85.0	100.0	
	Expert subject domain knowledge	No	20	33.3	39.2	39.2
		Yes	31	51.7	60.8	100.0
		Total	51	85.0	100.0	
	Process Knowledge	No	26	43.3	51.0	51.0
		Yes	25	41.7	49.0	100.0
		Total	51	85.0	100.0	
Top Management	Strategic Knowledge	No	48	28.2	33.6	33.6
		Yes	95	55.9	66.4	100.0
		Total	143	84.1	100.0	
	Institutional Knowledge	No	101	59.4	70.6	70.6
		Yes	42	24.7	29.4	100.0
		Total	143	84.1	100.0	
	Relationship Knowledge	No	65	38.2	45.5	45.5
		Yes	78	45.9	54.5	100.0
		Total	143	84.1	100.0	
	Expert subject domain knowledge	No	93	54.7	65.0	65.0
		Yes	50	29.4	35.0	100.0
		Total	143	84.1	100.0	
	Process Knowledge	No	81	47.6	56.6	56.6
		Yes	62	36.5	43.4	100.0
		Total	143	84.1	100.0	

Table 5: Results of the knowledge considered most important in each organisational management level

		Operational level	Middle Management level	Top Management level	Total
Strategic Knowledge	Operational Level	10	6	13	29
	Middle Management	2	12	13	27
	Top Management	32	32	117	181
	Total	44	50	143	237
Institutional/Historical Knowledge	Operational Level	8	5	19	32
	Middle Management	23	23	72	118
	Top Management	13	21	49	83
	Total	44	49	140	233
Relationship knowledge	Operational Level	5	7	20	32
	Middle Management	20	21	63	104
	Top Management	20	23	60	103
	Total	45	51	143	239
Expert subject matter domain knowledge	Operational Level	37	27	65	129
	Middle Management	3	17	48	68
	Top Management	5	7	31	43
	Total	45	51	144	240
Process knowledge	Operational Level	28	25	57	110
	Middle Management	8	18	63	89
	Top Management	9	7	23	39
	Total	45	50	143	238

Table 6: Results of H1 sub hypotheses

Pearson Chi-Square			
Sub hypothesis	Type of knowledge	Asymptotic Significance (2-sided)	Result
H1(a)	Strategic Knowledge	0.003	Supported
H1(b)	Institutional Knowledge	0.654	Not Supported
H1(c)	Relationship Knowledge	0.982	Not Supported
H1(d)	Expert Subject Domain Knowledge	0.000	Supported
H1(e)	Process Knowledge	0.029	Supported

We have mixed results concerning our H1 shown in Table 6 since H1(a), H1(d) and H1(e) are supported, and H1(b) and H1(c) are not. Therefore, we can state that strategic, expert subject domain and process knowledge are considered important between the organisational management levels to which the respondents belong. However, regarding institutional and relationship knowledge, H1(b) and H1(c), the results are not what we expected, according to the organisational management that uses these types of knowledge.

Regarding our hypothesis H2, there are also mixed results since sub hypotheses H2(a), H2(b), H2(c), and H2(d) are supported, showing in Table 7 that there are differences between the types of knowledge considered at critical at-risk in each management levels, only H2(e) is not supported.

Table 7: H2 Sub hypotheses results.

Pearson Chi-Square			
Sub hypothesis	Type of knowledge	Asymptotic Significance (2-sided)	Result
H2(a)	Strategic Knowledge	0.000	Supported
H2(b)	Institutional Knowledge	0.001	Supported
H2(c)	Relationship Knowledge	0.011	Supported
H2(d)	Expert Subject Domain Knowledge	0.000	Supported
H2(e)	Process Knowledge	0.190	Not supported

Results

The results of our research are fascinating since we would assume that the respondents would identify the knowledge they create or use according to their organisational management level as the most important one to that specific OML; however, the results show that not all the respondents in the different OML point out the knowledge their level of responsibilities creates or uses as the most important one.

Organisations are constantly processing data into information and therefore creating knowledge. However, parallel to this knowledge creation, employees leave the organisation for different reasons, retirement, moving to another area or leaving the company. And with these movements, there is knowledge loss also. So, as Farooq et al. (2018) state, the managers of the companies in this new era must acknowledge the importance of identifying and preserving this critical knowledge for future use to sustain or consolidate their competitive advantage.

The results show in Table 3 that top management identifies strategic knowledge as the most important one corresponding to their OML, which is aligned with having 66% of the respondents on top management saying that strategic knowledge is at critical at-risk of being lost (Table 4).

As to Middle management, as shown in Table 1, the knowledge they use principally is relationship and Expert subject domain knowledge, which none of the two was between the top 3 selection of this management level, however the most frequent type of knowledge selected by this organisational management level was institutional knowledge with 46%, which could be considered a low number since not even half of the respondents of that OML considered this knowledge, an important one, on the other hand, more than half of the respondents considered another type of knowledge as the most important one. Nevertheless, in Table 4, we can see that they consider expert subject domain knowledge to be critical at-risk with a 60.8%, which is contradictory since they consider it at-risk but not one of the most important types of knowledge of their organisational management level.

As for Operational management level, the two types of knowledge that were considered the most important by this organisational management level are process knowledge with 50.9%, which makes sense since they are the ones doing daily activities of the operation of the organisation, and expert subject domain knowledge with a 62.2% (Table 3). This aligns with

the 57.8% of respondents of Operational management level considering expert subject domain a knowledge critical at risk of being lost in their OML. However, just 31.1% (Table 4) considered process knowledge a critical at-risk.

What brings our attention is that institutional knowledge used and created by the whole organisation to build the organisational, institutional memory, which according to Liebowitz et al. (2007), helps increase workers' productivity and stimulates innovation, was not considered a critical knowledge at-risk by any organisational management level.

On the contrary, 93.3% of Operational level, 86.3% of Middle management and 70.6% of Top management said they didn't consider institutional knowledge at risk. Even though, as we described, organisational memory boosts, develops and extends organisational knowledge by merging different types of knowledge created or used in the organisation, hence the relevance that institutional knowledge should be considered one of the most important ones in each OML.

In fact, as Feiz et al. (2019) described, the main responsibility of the organisational memory is preparing the required knowledge for doing current responsibilities through which the knowledge workers can learn past lessons from previous behaviours and have continuous learning based on institutional knowledge as a consequence of having this knowledge stored and available for anyone who needs to consult it. For this reason, our research shows that there isn't a full awareness of the main purpose of having an organisational memory which, according to Maleki et al. (2017), is the creation of new knowledge and organisational learning.

Conclusion and Limitations

This study is part of more extensive research to identify the types of knowledge that could be at-risk in each organisational management level as the recognition of a mechanism that can help organisations identify their more valuable at-risk knowledge in each of their organisational management levels.

With this part of our study, we can conclude that there isn't a full consciousness of the type of knowledge that each OML is creating and using, as the importance of having an actualized organisational memory (institutional knowledge) which will permit innovation within the organization, as a consequence of having continuous learning between the members of the organisation.

We can claim that not all employees are aware of the knowledge they are creating in their activities as the usage they have of different knowledge created in the organisation, as knowledge workers don't recognise the benefits that having an effective knowledge management strategy could bring to the organisation.

The data collection of our study was focused on respondents working in several organisations based in Mexico. That's why we suggest future studies on organisations based in different countries, which could complete the investigation if this behaviour is consistent in other countries.

References

- Argote, L., McEvily, B., & Reagans, R. (2003). Managing Knowledge in Organisations: An Integrative Framework and Review of Emerging Themes. *Management Science*, 49(4), 571–582. <https://doi.org/10.1287/mnsc.49.4.571.14424>
- Beazley, H., Boenisch, J. S., & Harden, D. B. (2002). Continuity Management: Preserving Corporate Knowledge and Productivity When Employees Leave KM world and intranets. 59–68.
- Bender, S., & Fish, A. (2000). The transfer of knowledge and the retention of expertise: The continuing need for global assignments. *Journal of Knowledge Management*, 4(2), 125–137. <https://doi.org/10.1108/13673270010372251>
- Bennett, M. J. (1998). *Intercultural Communication: A Current Perspective*. 21.

- Cattani, G., Dunbar, R. L. M., & Shapira, Z. (2013). Value Creation and Knowledge Loss: The Case of Cremonese Stringed Instruments. *Organization Science*, 24(3), 813–830. <https://doi.org/10.1287/orsc.1120.0768>
- Chen, H., Nunes, J. M. B., Ragsdell, G., & An, X. (2019). Somatic and cultural knowledge: Drivers of a habitus-driven model of tacit knowledge acquisition. *Journal of Documentation*, 75(5), 927–953. <https://doi.org/10.1108/JD-03-2018-0044>
- Dawson, R. (2000). Knowledge capabilities as the focus of organisational development and strategy. *Journal of Knowledge Management*, 4(4), 320–327. <https://doi.org/10.1108/13673270010379876>
- Drew, S. (1999). Building Knowledge Management into Strategy: Making Sense of a New Perspective. *Long Range Planning*, 32(1), 130–136. [https://doi.org/10.1016/S0024-6301\(98\)00142-3](https://doi.org/10.1016/S0024-6301(98)00142-3)
- Dreyfus, H. L. (2007). Why Heideggerian AI failed and how fixing it would require making it more Heideggerian. *Artificial Intelligence*, 171(18), 1137–1160. <https://doi.org/10.1016/j.artint.2007.10.012>
- Droege, S. B., & Hoobler, J. M. (2003). Employee Turnover and tacit knowledge diffusion a network perspective.pdf. XV(1), 50–64.
- Drucker, P. F. (1999). Knowledge-Worker Productivity:... 41(2), 17.
- Du Plessis, M. (2005). Drivers of knowledge management in the corporate environment. *International Journal of Information Management*, 25(3), 193–202. <https://doi.org/10.1016/j.ijinfomgt.2004.12.001>
- Durst, S., & Wilhelm, S. (2013). Do you know your knowledge at risk? *Measuring Business Excellence*, 17(3), 28–39. <https://doi.org/10.1108/MBE-08-2012-0042>
- Edwards, J. S., Duan, Y., & Robins, P. C. (2000). An analysis of expert systems for business decision making at different levels and in different roles. *European Journal of Information Systems*, 9(1), 36–46. <https://doi.org/10.1057/palgrave.ejis.3000344>
- Erhardt, N., & Harkins, J. (2013). Knowledge Transfer Across Hierarchical Lines: The Importance of Organisational Structure and Type of Knowledge. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.2332768>
- Farooq, M. I., Hanif, D. M. I., & Khan, M. A. (2018). Importance of Empowering Leadership, Reward and Trust towards Knowledge Sharing. *International Journal of Management Excellence*, 11, 10.
- Feiz, D., Dehghani Soltani, M., & Farsizadeh, H. (2019). The effect of knowledge sharing on the psychological empowerment in higher education mediated by organisational memory. *Studies in Higher Education*, 44(1), 3–19. <https://doi.org/10.1080/03075079.2017.1328595>
- Giacosa, E., Ferraris, A., & Bresciani, S. (2017). Exploring voluntary external disclosure of intellectual capital in listed companies: An integrated intellectual capital disclosure conceptual model. *Journal of Intellectual Capital*, 18(1), 149–169. <https://doi.org/10.1108/JIC-01-2016-0019>
- Grant, R. M. (1996). Toward a knowledge-based theory of the firm: Knowledge-based Theory of the Firm. *Strategic Management Journal*, 17(S2), 109–122. <https://doi.org/10.1002/smj.4250171110>
- Gupta, V., & Chopra, M. (2018). Gauging the impact of knowledge management practices on organisational performance – a balanced scorecard perspective. *VINE Journal of Information and Knowledge Management Systems*, 48(1), 21–46. <https://doi.org/10.1108/VJKMS-07-2016-0038>
- Hadjimichael, D., & Tsoukas, H. (2019). Toward a Better Understanding of Tacit Knowledge in Organisations: Taking Stock and Moving Forward. *Academy of Management Annals*, 13(2), 672–703. <https://doi.org/10.5465/annals.2017.0084>
- Hazlina, H., Noradiva, H., Norman, M., Saleh, K., & Amarizah, K. (2019). The Effect of Transformational Leadership Styles towards Managing Knowledge Assets. *Asian Journal of Accounting and Governance*, 11, 171–180. <https://doi.org/10.17576/AJAG-2019-11-15>
- Hofer Alfeis, J. (2008). Knowledge management solutions for the leaving expert issue. *Journal of Knowledge Management*, 12(4), 44–54. <https://doi.org/10.1108/13673270810884246>
- Jacobsen, K. (2004). A Study of Virtual Organizations. Norwegian University of Science and Technology Department of Computer and Information Science, 126.
- Jennex, M. E. (2014). A proposed method for assessing knowledge loss risk with departing personnel. *VINE*, 44(2), 185–209. <https://doi.org/10.1108/VINE-07-2012-0028>
- Jennex, M., Smolnik, S., & Croasdell, D. (2007). Towards Defining Knowledge Management Success. 2007 40th Annual Hawaii International Conference on System Sciences (HICSS'07), 193c–193c. <https://doi.org/10.1109/HICSS.2007.571>
- Kale, P., Singh, H., & Perlmutter, H. (2000). LEARNING AND PROTECTION OF PROPRIETARY ASSETS IN STRATEGIC ALLIANCES: BUILDING RELATIONAL CAPITAL. 22.
- Liebowitz, J., Ayyavoo, N., Nguyen, H., Carran, D., & Simien, J. (2007). Cross-generational knowledge flows in edge organisations. *Industrial Management & Data Systems*, 107(8), 1123–1153. <https://doi.org/10.1108/02635570710822787>
- Lin, T.-C., Chang, C. L., & Tsai, W.-C. (2016). The influences of knowledge loss and knowledge retention mechanisms on the absorptive capacity and performance of an MIS department. *Management Decision*, 54(7), 1757–1787. <https://doi.org/10.1108/MD-02-2016-0117>

- Mariano, S., Casey, A., & Olivera, F. (2018). Managers and organisational forgetting: A synthesis. 11.
- Massingham, P. (2008). Measuring the Impact of Knowledge Loss: More Than Ripples on a Pond? *Management Learning*, 39(5), 541–560. <https://doi.org/10.1177/1350507608096040>
- Massingham, P. R. (2018). Measuring the impact of knowledge loss: A longitudinal study. *Journal of Knowledge Management*, 22(4), 721–758. <https://doi.org/10.1108/JKM-08-2016-0338>
- McIver, D., & Wang, X. "Abby." (2016). Measuring knowledge in organisations: A knowledge-in-practice approach. *Journal of Knowledge Management*, 20(4), 637–652. <https://doi.org/10.1108/JKM-11-2015-0478>
- Nonaka, I., & Krogh, G. von. (2009). Tacit Knowledge and Knowledge Conversion: Controversy and Advancement in Organizational Knowledge Creation Theory. *Organization Science*, 20(3), 635–652.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge creating company*. Oxford University Press.
- Nurye, S. A., Molla, A., & Assefa, T. (2019). Factors Influencing Knowledge Transfer in Onshore Information Systems Outsourcing in Ethiopia. 11(4), 21.
- Omotayo, F. O. (2015). Knowledge Management as an important tool in Organisational Management: A Review of Literature. 25.
- Ordóñez de Pablos, P. (2002). Evidence of intellectual capital measurement from Asia, Europe and the Middle East. *Journal of Intellectual Capital*, 3(3), 287–302. <https://doi.org/10.1108/14691930210435624>
- Parise, S., Cross, R., & Davenport, T. H. (2006). Departing employees leave with more than what they know; they also take with them critical knowledge about who they know. That information needs to be a part of any knowledge-retention strategy. 11.
- Perrin, A., & Rolland, N. (2007). Mechanisms of Intra-Organisational Knowledge Transfer: The Case of a Global Technology Firm. *M@n@gement*, 10(2), 25. <https://doi.org/10.3917/mana.102.0025>
- Perrott, B. E. (2007). A strategic risk approach to knowledge management. *Business Horizons*, 50(6), 523–533. <https://doi.org/10.1016/j.bushor.2007.08.002>
- Shah, P. P. (2000). NETWORK DESTRUCTION: THE STRUCTURAL IMPLICATIONS OF DOWNSIZING. *Academy of Management Journal*, 13.
- Sitzmann, T. (2011). A META-ANALYTIC EXAMINATION OF THE INSTRUCTIONAL EFFECTIVENESS OF COMPUTER-BASED SIMULATION GAMES. *Personnel Psychology*, 64(2), 489–528. <https://doi.org/10.1111/j.1744-6570.2011.01190.x>
- Stein, E. W., & Zwass, V. (1995). Actualising Organisational Memory with Information Systems. *Information Systems Research*, 6(2), 85–117. <https://doi.org/10.1287/isre.6.2.85>
- Stewart, T. A. (2010). *Intellectual Capital: The new wealth of organisation*. Crown.
- Sumbal, M. S., Tsui, E., Cheong, R., & See-to, E. W. K. (2018). Critical areas of knowledge loss when employees leave in the oil and gas industry. *Journal of Knowledge Management*, 22(7), 1573–1590. <https://doi.org/10.1108/JKM-08-2017-0373>
- Tanriverdi, H., & Venkatraman, N. (2005). Knowledge relatedness and the performance of multibusiness firms. *Strategic Management Journal*, 26(2), 97–119. <https://doi.org/10.1002/smj.435>
- Tsoukas, H. (2011). *How should we understand tacit knowledge? A Phenomenological view*. John Wiley and Sons.
- Wallace, R. B. (2005). *Storm Warning Managing Knowledge in Turbulent Times*. 25.
- Wang, R. (2019). Evolutionary game of knowledge sharing in master-apprentice pattern of innovative organisation. *International Journal of Innovation Science*, 11(3), 436–453. <https://doi.org/10.1108/IJIS-11-2018-0125>
- Yim, N.-H., Kim, S.-H., Kim, H.-W., & Kwahk, K.-Y. (2004). Knowledge based decision making on higher level strategic concerns: System dynamics approach. *Expert Systems with Applications*, 27(1), 143–158. <https://doi.org/10.1016/j.eswa.2003.12.019>
- Zaied, A. N. H., Hussein, G. S., & Hassan, M. M. (2012). The Role of Knowledge Management in Enhancing Organisational Performance. *International Journal of Information Engineering and Electronic Business*, 4(5), 27–35. <https://doi.org/10.5815/ijieeb.2012.05.04>
- Grady, J. S., Her, M., Moreno, G., Perez, C., & Yelinek, J. (2019). Emotions in storybooks: A comparison of storybooks that represent ethnic and racial groups in the United States. *Psychology of Popular Media Culture*, 8(3), 207–217.
- Sanchiz, M., Chevalier, A., & Amadiou, F. (2017). How do older and young adults start searching for information? Impact of age, domain knowledge and problem complexity on the different steps of information searching. *Computers in Human Behavior*, 72, 67–78. <https://doi.org/10.1016/j.chb.2017.02.038>
- Jackson, L. M. (2019). *The psychology of prejudice: From attitudes to social action* (2nd ed.). American Psychological Association. <https://doi.org/10.1037/0000168-000>