

COVID-19 and its Influence on Knowledge Conversion within an Organization

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Abstract: This paper focuses on the impact of the COVID-19 pandemic on the knowledge conversion process. To observe the impact, we decided to use a model called SECI, created by Ikujiro Nonaka and Hirotaka Takeuchi. The model is widely recognized and has been used in many pieces of research. The question we ask is whether and how is the knowledge conversion process influenced by the pandemic. Further investigation revealed that the socialisation process (the first phase of the SECI model, where tacit knowledge is being converted and shared to create another tacit knowledge) is the most influenced process of the four processes. The methods used for the research are especially literature review and analysis and synthesis of papers. The results showed that the pandemics do influence the knowledge conversion, especially in terms of shifting the communication and cooperation toward virtual methods. This has a major impact especially on the socialisation process, as it is based on sharing experiences, usually in physical proximity.

Keywords: knowledge conversion; SECI model; tacit knowledge; COVID-19 pandemic

JEL Classification: M150

1. Introduction

Knowledge has been lately considered one of the most important assets for any organization. It is widely recognized as a source of competitive advantage (Zack, 1999; Macey et al., 2011; Cook, 2008). As Nonaka et al. mention, "*knowledge creation is a continuous, self-transcending process through which one transcends the boundary of the old self into a new self by acquiring a new context, a new view of the world, and new knowledge*" (2000, p. 8). The knowledge creation and sharing process enables an organization to manage the ongoing change in its environment. The importance of knowledge management can be observed especially in the area of productivity and work efficiency, but incorrect management of knowledge processes in the organization can have far more serious effects than lower productivity. These effects can manifest themselves in organizations, that deal with human health and lives. Examples might be airlines, medical, military, or fire brigade organizations, where a loss of employee knowledge can result in the loss of human lives (Oliver et al., 2017; Weick & Sutcliffe, 2015).

The subject of KM is very broad. It relates to different domains of research such as organizational theory (Weick, 2006; Nonaka et al., 2014), leadership theory (Manz & Sims, 1991; Rojhe & Syal, 2014), the theory of employee inclusion (Lawler, 1986; Rana, 2015; Konrad, 2006), etc. On the other hand, knowledge can be also seen as "commons" (Hess & Ostrom, 2007), which represents a common shared resource that serves a given group or system and promotes the "common good". In the present paper, we focus on the role of knowledge in

organizational theory. There are several models depicting knowledge managing processes in an organization, such as SECI (Nonaka et al., 2014; Nonaka & Takeuchi, 1995), LIR (Born, 2002), or Information security knowledge sharing integrated model (Safa & Von Solms, 2016).

Previous research has shown, that the SECI model will be the most appropriate for our research. The main reason is that its applicability and usefulness have been verified by various research. Its role is to depict the process of creating and managing knowledge within an organization. The model has been implemented in several studies concerning knowledge creation and management. It was used in small organizations, universities, multiorganizational projects, etc. (Arias Velásquez & Mejía Lara, 2021; Saide & Sheng, 2021). Also, it is both complex in terms of application and simple in terms of understanding the process. If we look a little closer, the model explains a process of creating and managing knowledge within an organization, concretely the process of transforming and sharing explicit and tacit knowledge, utilizing four processes: socialisation, externalisation, combination, and internalisation (Figure 1). Each process represents the transition from one type of knowledge to another or the same, ex. socialisation (tacit-tacit), externalisation (tacit-explicit) etc.

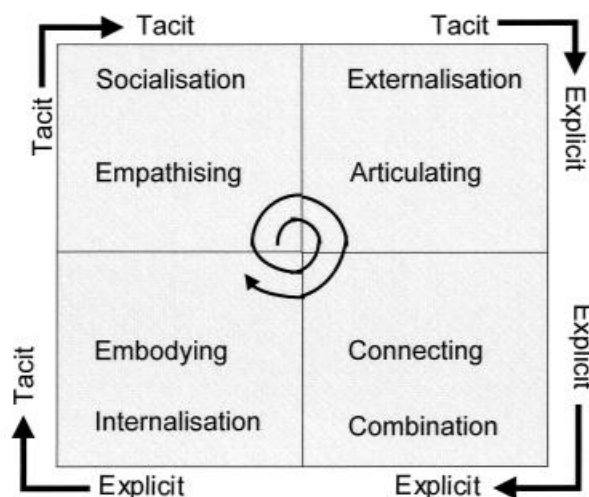


Figure 1. The SECI process (Nonaka et al., 2000)

The whole process of generating and managing knowledge is influenced by many factors, such as technological development, culture (national and organizational), a situation in the society, etc. At present, the situation linked with the COVID-19 virus represents a great challenge for knowledge management as such (Ammirato et al., 2021; Arias Velásquez & Mejía Lara, 2021; Saide & Sheng, 2021). Does it also influence the knowledge conversion process?

Hence the research question is:

Q: Does the pandemic COVID-19 influence the process of creating and managing knowledge in an organization?

To address this question, we will use the IMRAD scheme. After this brief introduction of the subject, the methodology of the research will be outlined, subsequently, we will present the research results. In the end, the discussion of the findings, the limits of this approach, and recommendations for future research will be presented.

2. Methodology

The method used for the present research is mainly a literature review approach. The processes used especially study selection, analysis, and synthesis of papers and reporting of the results. The nature of the research is rather exploratory, as we are exploring links between two concepts (knowledge conversion and COVID-19), of which one has emerged recently (Saunders et al., 2015). Therefore, there is quite little known about the nature of the link between them. It might result in finding new relations between concepts, but it might result in reaching the deadlock as well.

The main source of literature was the Web of Science Core Collection database. The algorithms used in the search were:

1. TS=(knowledge AND management AND COVID-19)
2. TS=(SECI model)

In the course of the research two other algorithms were added, due to further investigation:

3. TS=(SECI model AND socialisation)
4. TS=(SECI model AND pandemics)

For the publications concerning COVID-19, the year of publication was automatically 2020 or later (as the influence of the virus became grave and known worldwide in the second half of 2019). For the first algorithm, there were 2,005 relevant publications. Afterward, we restricted the research area to management, business, multidisciplinary sciences, and social sciences interdisciplinary, excluding medical publications in particular. This process resulted in 270 publications. The search with the second algorithm resulted in 152 publications, with restrictions to the field of management only. Entering the third algorithm, the result was 16 publications and the fourth algorithm resulted in only one publication, as the area of research is still new and much narrower than the first subject. The publications found in this process were then manually sorted according to their relevance to the topic. For complementary research, we also used the EBSCO database.

3. Results

In this section, we will outline the base for answering the research question. Previous research has confirmed that the pandemic COVID-19 has a significant effect on knowledge management and vice versa (Ammirato et al., 2021; Kirchner et al., 2021; Arias Velásquez & Mejía Lara, 2021), which means, it could have some impact on knowledge conversion process as well. A concrete example of such an influence can be an improvement of virtual instructions and the digital transformation of the educational process in the research made

by Arias Velásquez and Mejía Lara (2021). Another research, that focused on the educational sector, identified five areas linked with knowledge management, which need to be addressed to maintain knowledge sharing effective, especially under the influence of pandemics (Saide & Sheng, 2021). Deliu (2020) suggests the importance of corporate governance supporting knowledge management governance, especially during a socio-economic crisis such as the COVID-19 pandemic. As we could see, the COVID-19 pandemic has had an impact on knowledge management. The question that follows is, whether specifically the process of knowledge conversion is influenced.

3.1. *Knowledge Conversion and the Influence of COVID-19*

To enable the analysis of the process of **knowledge conversion**, the **SECI model** will be used. As we mentioned above, the model depicts the process of creating and sharing explicit and tacit knowledge. The term *knowledge conversion* describes an interaction between two types of knowledge. There are four conversion processes: socialisation, externalisation, combination, and internalisation (see Figure 1). (The first letters of their names form the acronym "SECI".) The model has been implemented in several studies concerning knowledge creation and management. It was used in small organisations, universities, multiorganisational projects etc. (Arias Velásquez & Mejía Lara, 2021; Saide & Sheng, 2021).

In the process of **socialisation**, tacit knowledge is converted through sharing experiences. As tacit knowledge is not possible to express by data or words, the best tool for its conversion is learning while working together (Dávideková & Hvorecký, 2017; Nonaka et al., 2000). In this process, people empathize with co-workers and others around them, which creates an environment more open to sharing knowledge. In the **externalisation** process, tacit knowledge is converted (articulated) into explicit. It is said that after this process, knowledge is crystalized and becomes the basis for new knowledge. The third conversion process is **combination**, where the explicit knowledge is connected and combined into a more complex system of explicit knowledge. It can be done through computer networks, for example creating databases. In the last process called **internalisation**, the explicit knowledge is embodied into tacit knowledge by individuals. It is often done through action (Nonaka et al., 2000). After the internalisation, the process starts over at another level, continuing in the same scheme.

As mentioned above, the **pandemics of COVID-19** have had several impacts on organizations and their management. As we can observe, some of the most significant influences of COVID-19 are the increasing development and implementation of a virtual version of communication, cooperation, etc. (Arias Velásquez & Mejía Lara, 2021; Saide & Sheng, 2021). As a result of restricting personal contact among employees, there has been an increasing shift towards working from home (Crane & Matten, 2021). This tendency is quite important for our research, as it might have an impact on the way of sharing knowledge.

Among other impacts of COVID-19 pandemics the main influence was, according to Crane & Matten (2021), reassessment of the stakeholder view in terms of what groups of stakeholders are essential for the economy to keep going. They mention that the focus on employees may be stronger, as they are the essential group of stakeholders, that keeps on

organization going. If we consider knowledge-based organizations (or knowledge workers), changes in focus on employees may result in development in the knowledge conversion process, as it is one of the most important processes for such organizations. It may also relate to another research made by Rhodes and Fleming (2020) concerning Corporate social responsibility. They explain that besides the company's interest (which is rarely exceeded by an organization), other interests have become important, such as health quality of the stakeholders (employees for example). It is becoming more important to perceive an organization as a part of a system of social governance where political and social responsibility is based on the interests of the whole society.

As we may have observed the knowledge conversion processes concern many activities in an organization. And some of them have been influenced by the pandemic quite significantly. We can remark that the most influenced is the process of socialisation. In the second part of the results section, we will explore the process and how it may be influenced.

3.2. Process of Socialisation and the Influence of COVID-19

As Nonaka et al. mention, "*tacit knowledge is deeply rooted in action, procedures, routines, commitment, ideas, values and emotions*" (2000, p. 7). As this type of knowledge is quite difficult to communicate, it requires a special way of sharing. That is why the **socialisation process** takes place while sharing and developing tacit knowledge. It might even require a kind of "simultaneous processing" (Nonaka et al., 2000).

Another specificity of the socialisation process is that it requires more personal contact than the other processes. As Nonaka et al. highlight, "*Since tacit knowledge is difficult to formalize and often time- and space-specific, tacit knowledge can be acquired only through shared experience, such as spending time together or living in the same environment. Socialisation typically occurs in a traditional apprenticeship, where apprentices learn the tacit knowledge needed in their craft through hands-on experience, rather than from written manuals or textbooks.*" (2000, p. 9).

If we look at sharing data between computers, it has to be explicit data, as they are codifiable. On the other hand, as Dávideková and Hvorecký (2017) suggests, "*tacit knowledge is primarily transferred by non-ICT methods*" (2017, p. 105). Although some ICT methods, that can transmit human-oriented features, might still play a role in the socialisation process. Especially video and phone meetings or records that can transmit intonation and facial expressions and e-mails that transmit the writing style.

4. Discussion

We explored the influence of the COVID-19 pandemic on the knowledge conversion process in organizations using the SECI model. As we could see in the result section, the SECI model is comprised of four knowledge conversion processes. These processes are used in most organizations, like sharing, and developing knowledge is basic for evolving and proceeding in business activities. They comprise both personal and virtual communication. Given the COVID-19 situation, the proportion of virtual communication has grown at the expense of personal contact (Arias Velásquez & Mejía Lara, 2021; Crane & Matten, 2021). The answer to the research question is therefore positive. The process of knowledge conversion

described by the SECI model is influenced by COVID-19 and has moved more into the virtual sphere. It also seems that the effect might be different for the four conversion processes. To deepen the understanding of the problem, we explored the process of socialisation and the influence of the pandemics on it. It is because the results have shown, that the socialisation process mostly requires personal contact as its main tool is sharing experience (Dávideková & Hvorecký, 2017; Nonaka et al., 2000). Based on this information, it seems it is influenced the most – out of all four processes.

The pandemic influences the socialisation process, as the process is based on sharing experiences in person. The best way to share tacit knowledge is by sharing the same environment and spending time together (Nonaka et al., 2000). And the effect of the pandemic has been rather a reduction in "spending time together and sharing the same environment". The number of people working from home has been gradually increasing. But as Dávideková and Hvorecký (2017) mention the primary method of sharing tacit knowledge is by non-ICT methods. The socialisation process might be strongly influenced by the COVID-19 pandemic, as in many organizations, employees spend much more time in-home office, therefore they spend less time together and have fewer opportunities to share experiences in person. This supports the claim, that knowledge conversion can be influenced by pandemics.

Some may ask whether personal contact is really necessary for the socialisation process. For example, Dávideková and Hvorecký (2017) mention, that e-mails and video calls, and conferences can transfer some human-oriented features. Which may to some extent replace personal contact. The problem is, that only some aspects are transferable – like facial expressions, voice intonation, etc. But it definitely cannot be fully replaced. Besides personal communication, Nonaka et al. (2000) also mention sharing the same environment or living together, which virtual communication and video conferences cannot substitute.

Another question we may ask is whether the influence of pandemics in terms of working from home is so important. It seems to be almost over and even though some employers are keeping their employees in the home office, the situation does not require it anymore. So, do we have to worry about it, when the situation is slowly getting back on the old track? The truth is, that even if it might get partially back, there may be other similar problems, which would restrict personal contact. It might be the same, another pandemic, or something completely different such as weather conditions. Either way, it's always better to be prepared. We need to understand the causes and consequences and be ready to handle them. Another argument for dealing with this question is that we were not prepared for such a situation and it had quite a strong impact on the whole society. Also, working from home has many benefits for both employers and employees, so even after the pandemic will be over, some of the "home office" effects will remain.

We found out that while using virtual communication methods, there are some restrictions to personal contact and sharing an environment. So, the question arises, what we can do about it, and to what extent does it mean a problem. As we mentioned above, working from home is more and more common. Therefore, some reduction of hours spent together will happen anyway. But the number of hours spent together does not mean good quality

sharing knowledge. This means that maybe less time but more effectively spent may be valid for the socialisation process. If an organization creates an effective infrastructure for sharing tacit knowledge, it can work even better than before. The question is, what kind of infrastructure would it be and how would it function. This might be a subject of another research.

The limits of this paper are given partly by its theoretical nature and partly by time options and conditions for articles. For example, it has been time-bound for a few months, therefore the complexity of the study and the possibility of more profound empirical research was limited.

On the other hand, it could help us to understand the problem better if we made empirical research in an organization that had a significant increase of home office workers and a shift towards virtual communication. There we could observe changes in the process of knowledge conversion. Another **recommendation for future research** would be to study the knowledge spiral functioning under the influence of pandemics. Knowledge spiral is another concept created by Nonaka et al. (2000) that is comprised of the SECI model and two other knowledge creation models. Such research could bring us a more complex picture of the influence of pandemic and other incidents of this sort.

5. Conclusions

This paper aimed to find out, whether and how the COVID-19 pandemic influences the process of knowledge conversion in an organization. With the help of the SECI model (which describes the knowledge conversion between explicit and tacit knowledge), we found out, that the pandemic does influence the process described by the SECI model. The process, that is influenced the most, is the conversion between tacit and tacit knowledge (socialisation). The main influence comes from the shift towards virtual communication and working from home. As the socialisation process requires personal communication and sharing activities and the environment, the pandemic might reduce the quality of the process, which might disrupt the whole process of knowledge conversion. On the other hand, if the amount of time spent together decreases, but is not removed completely, it is possible, that the quality of the socialization process is maintained. In this process, it is not the quantity of time that matters, but the quality and manner of time spent. A proposal for a topic for further research may be just how to maintain the quality of the socialization process when the opportunity of meeting and sharing the same environment decreases.

Conflict of interest: none

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