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## Don't forget the dark side of green transformation

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### Abstract

**Design/methodology/approach** – The study is a continuation of the research by Durst and Zieba (2019) related to knowledge risks and their potential outcomes. This present study

makes an update on the literature on knowledge risks and green transformation and describes knowledge risks that can be faced in this process.

**Originality/value** – The paper offers new insights for researchers dealing with the topic of knowledge risks in the context of green transformation and ways of handling them.

**Practical implications** – The study provides useful information for managers and owners of companies who are not always aware of the dark side of knowledge and risks related to it. Additionally, companies are more and more often challenged with the need to make the green transformation and this process can also be a tricky one.

**Limitations** – At this stage of development, the proposed study is of theoretical character. This limitation will be overcome in future research activities that involve a large sample of organizations from various countries and sectors.

### **Nature of proposed paper: Academic Research Paper**

## Introduction

Although the topic of green transformation is being discussed loudly and in many different ways in the public arena (Amundsen and Hermansen, 2021), it is still a fairly new topic and rigorous research in different disciplines has only recently started. Existing research (e.g., Schmitz, 2015) has suggested that the green transformation is different from the others. The main difference seen is its urgency since climate and earth sustainability must be achieved as soon as possible (McNutt, 2013).

The emerging literature on green transformation indicates that knowledge management positively influences organizations' efforts towards green sustainability (Abbas and Sağsan, 2019). Similarly, Shahzad et al. (2021) have also recognized the importance of knowledge management practices for the evolution of a sustainable organization that follows the green growth agenda. Not surprisingly, the role of people and their knowledge, skills and competences is perceived as key for approaching green transformation. This also means that people should feel encouraged and empowered to share their knowledge, and ideas, thus, knowledge hiding or other forms that prevent the flow of knowledge and information should be avoided (Shahzad et al. 2021).

In the face of the above, there is a need for research on green transformation and its link with the field of knowledge management. More precisely, it seems especially relevant to add the topic of knowledge risks to the discussion, considering that the green transformation requires significant efforts from organizations.

The authors of this paper argue that it would be relevant and interesting for both research and practice representatives to develop a better understanding of knowledge risks associated with the green transformation and their consequences. Therefore, the present paper is aimed to provide some theoretical insights into knowledge risks taking the perspective of green transformation-

The paper is structured as follows. The next section briefly sets the frame of the paper. This is followed by Section 2 that proposes and describes a number of knowledge risks in the

context of green transformation and the possible consequences of these risks. The paper ends with a short conclusion.

## Literature background

### Knowledge risks

The concept of knowledge risk is becoming increasingly popular in academic research, however, the concept itself is still not well defined. In the broadest and simplest terms, knowledge risks constitute a group of knowledge-related threats that can affect an organization's operations (Durst *et al.*, 2018). A more accurate definition, proposed by Durst and Zieba (2019), defines knowledge risks 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 organization on any level”. According to Bayer and Maier (2006), knowledge risk is an operational risk that arises from reliance on knowledge, or unsuccessful transfer of it, which may result in a loss of knowledge or losing exclusivity of being the only owner of it, in other words, that the knowledge will spill over out of the organization.

Knowledge risk management (KRM) as a new field of study has emerged through the intersection of the fields knowledge management and risk management (Massingham, 2010). Durst and Zieba (2019) enriched the emerging KRM theory by creating a knowledge risk map and classified knowledge risks from the organizational level into three categories: operational, human, and technological. Human knowledge risks at the organizational level are connected with employees, organizational culture, social and psychological factors - all the aspects that human resources management deals with. Risks in this category are, for example, knowledge hiding, unlearning, or missing competencies. Risks in the technological dimensions are related to the usage of different information and communication technologies, and their consequences. The category includes cybercrime but also digitalization, or social media risks. The operational dimension of knowledge risks is related to the functioning of the organization and its daily operations. It includes knowledge acquisition or application risk, risk related to the knowledge gap, and many more. It is the broadest category with the highest number of risks in the taxonomy (Durst and Zieba, 2019). The following classification is one of the most comprehensive and clear taxonomies and is often the basis for other research. This was the case with the taxonomy proposed by Khatib (2021) who after a deep review of knowledge risk concepts, based on the work of Durst and Zieba (2019), proposed a taxonomy, which divides knowledge risks into human, technological, operational, and strategic dimensions. The author makes a distinction between operational and strategic risks. Knowledge loss, knowledge leakage, and knowledge gap risks have been classified into the strategic dimension, because of their long-term consequences. Moreover, strategic risks should be managed from the top management level, while operational risks only need to be controlled at a middle level, by operations managers (Khatib, 2021).

The more knowledge an organization has, the greater the range of risks it faces regarding both knowledge and knowledge holders (Akhavan *et al.*, 2019). For the growing number of threatening activities, better KRM within the organization is essential. Unfortunately, many managers remain unaware of knowledge risks and remain ignorant about how harmful effects e.g. threatening the organization's reputation can bring (Neef, 2005). If it is possible to put measures in place to prevent knowledge risks from occurring, it is worth

doing so. It might be undertaken by establishing organizational culture, which should be conducive to a knowledge management system, through the development of the knowledge map, but also by implementing adequate security systems for existing knowledge (Akhavan *et al.*, 2019). However, we have to bear in mind that not every risk can be prevented. Sometimes some hazards can only be delayed, but it is also worth doing. Prior planning for KR incidents, provides the opportunity for quick recovery. Companies need to learn a lesson from each incident so that they can better protect themselves in the future (Thalmann and Ilvonen, 2020).

### Green transformation process

The concept of green transformation is fairly new and has recently started to appear in the scientific literature. This concept was defined by Schmitz (2015) as "a process of restructuring that brings the economy within the planetary boundaries. These boundaries define a safe operating space for humanity" (p.2). The author emphasized that this transformation is different from the others; the main difference is its urgency since climate and earth sustainability must be achieved as soon as possible. Nowadays on the national and international area as well, there is an increased attention to climate change and therefore, the emerging need for a green transformation (Amundsen and Hermansen, 2021). In addition to the concept of green transformation, the concept of green innovations occurs in the literature, which is most often used interchangeably by the authors. Green innovations are used to improve organizational sustainability by adopting sustainable development practices (Shahzad *et al.*, 2021). Green innovations develop planet-friendly products and processes by adopting ecological organizational practices such as greener raw materials, reducing material consumption, reducing emissions, water, and electricity (Singh *et al.*, 2020). According to Abbas and Sağsan (2019), green innovation acts as a stimulant for organizations to develop new technologies and processes to achieve economic sustainability and to become environmentally friendly.

The literature on green transformation is not rich and still lacks empirical researches investigating how this process is manifested in practice. However, the empirical results of a study by Abbas and Sağsan (2019) indicate that knowledge management positively influences the sustainable development of a company. The study confirms that green innovation activities can be strengthened through knowledge management, as it positively influences the transfer of knowledge between employees, cooperation, and information sharing. All knowledge management practices allow employees to benefit from experience and develop environmentally friendly technology. Similarly, Shahzad *et al.* (2021) in their study recognized the importance of knowledge management practices for the evolution of a sustainable organization that follows the green growth agenda. They advised that to generate higher profits and reduce the negative environmental impact, the organizations should launch specific development programs and specific pieces of training for employees. What is important is not to overload people with programs and training, as passing too much green knowledge at once will increase the risk of forgetting, and knowledge waste. Abuzeinab *et al.* (2016), in their research, indicated that knowledge, people, and skills are the key resources considering green transformation. The authors agreed that appropriate training and in-depth environmental knowledge must be updated frequently, as green issues evolve very quickly, and some of the information may be out of date. This means that in the context of green transformation, the risk of using outdated or unreliable knowledge increases. The other issue is a fact, that some companies when deciding on green transformation, establish for this task some individuals or build a sustainability team.



Abuzeinab *et al.*'s (2016) study also stated that despite excellent teams dedicated to this role, most brilliant ideas come from other employees, as they can faster notice a problem or challenge and they want to do something about it. In such a case, such employees must be valued and empowered to avoid the risk of knowledge hiding.

### Knowlegde risks while transforming into a green organization

By bringing together the topics presented above, the authors of the present paper have identified an initial framework that highlights areas of knowledge risks that might be useful to consider in the process of green transformation. More precisely, the authors have followed Durst and Zieba (2018) three dimensions, namely, human, technological and organizational to classify knowledge risks associated with the green transformation.

Table 1. Forms of knowledge risks and their possible consequences in the green transformation process.

Dimension	Form of knowledge risk	Possible consequences
<b>Human</b>	Lack of skills and comptences and thus understanding of the green transformation in the leadership	<ul style="list-style-type: none"> <li>• Leadership makes no decision, too late/fast decisions or wrong decisions</li> </ul>
	Lack of well-educated staff to understand the consequences of green transformation (or lack of it) for themselves and the organization	<ul style="list-style-type: none"> <li>• Reluctance in being an active actor in the process of green transformation</li> <li>• Fear and anxiety</li> </ul>
	Use of obsolete and/or irrelevant information and knowledge for decision-making related to green transformation	<ul style="list-style-type: none"> <li>• Wrong and costly decisions</li> </ul>
	Not-invented-here (NIH) syndrome. Thus, the firm does not welcome externally developed solutions, and knowledge to approach green transformation.	<ul style="list-style-type: none"> <li>• Use of dated or incomplete knowledge and information increasing the danger of wrong decisions</li> </ul>
	Negative attitude towards green transformation for various reasons	<ul style="list-style-type: none"> <li>• Loss of reputation, customers, funding opportunities etc.</li> </ul>
	Risk of under-/overestimating of skills and capabilities at the stage of deciding to adapt new technological solutions to promote and support green transformation in the company	<ul style="list-style-type: none"> <li>• Adoption of technologies neither the company, i.e., its people and organization is ready/suitable for</li> </ul>
	Insufficient knowledge about how to make use of the technological solutions aimed at supporting green transformation	<ul style="list-style-type: none"> <li>• Risk of cyber attacks</li> <li>• Instead of supporting green transformation it</li> </ul>

		is hampered, i.e. delayed
	Legal requirements and regulations must be known and adhered to so that the green transformation can be successfully approached in the organizations	<ul style="list-style-type: none"> <li>• Costly and lengthy legal suits</li> </ul>
	Resistance to adapt to new ways of thinking/methods/technologies	<ul style="list-style-type: none"> <li>• Green transformation is delayed, might be more costly</li> </ul>
	Taking a too positive attitude toward knowledge acquisition from external sources.	<ul style="list-style-type: none"> <li>• The danger is high that it vanishes the company's skills and capabilities.</li> </ul>
<b>Organizational</b>	Lack of a systematic and dedicated KRM	<ul style="list-style-type: none"> <li>• The company does not know where it is vulnerable, how and why</li> </ul>
	Not using the available knowledge effectively due to lack of strategy, skill or intentional knowledge hiding and knowledge hoarding. Missing clarity could also be a reason.	<ul style="list-style-type: none"> <li>• Leadership makes no decision, too late/fast decisions or wrong decisions</li> </ul>
	Other risks that may emerge at any stage of the green transformation are overlooked	<ul style="list-style-type: none"> <li>• Operations come to a halt (the worst case scenario)</li> </ul>
<b>Technological</b>	Using old technologies for addressing green transformation may create inefficiency	<ul style="list-style-type: none"> <li>• Increased inefficiency and thus extra costs</li> </ul>
	Risk of cyber-attacks as a consequence of using new or amended technologies for green transformation	<ul style="list-style-type: none"> <li>• Data, information is manipulated; the operations have to stop; ransom needs to be paid</li> </ul>
	The technological solutions used in the green transformation process have (still) bugs	<ul style="list-style-type: none"> <li>• High costs triggered by possible bugs technological innovations.</li> </ul>
	The technological solutions adopted may integrate poorly with existing systems	<ul style="list-style-type: none"> <li>• Business operations and people are disturbed</li> </ul>

Source: Own elaboration, based on Durst and Zieba (2018)

To sum up, there is a variety of knowledge risks related to green transformation that may potentially hinder the operations of an organization. Their consequences might be negative for the organization, for example by disturbing the operations (stopping them) or generating high costs. Knowledge risks may also damage the reputation of organization or cause some disturbances with employees (e.g. loss of knowledge and skills or motivation). All in all, knowledge risks should be taken into consideration in the process of green transformation and their consequences should be minimized. Otherwise, there is a risk that they might decrease organizational performance in various aspects.

## Conclusions

This conceptual paper has identified and presented different types of knowledge risks that organizations are possibly exposed to regarding the green transformation. From a theoretical point of view, this study has delivered some evidence of knowledge risk taxonomy proposed by Durst and Zieba (2018). Focusing on knowledge risks analysed in the context of green transformation, the taxonomy has shown its adjustable character useful for different organizational settings and challenges. From a practical point of view, the study provides useful insight for managers and owners of companies who should become aware that any organization is fragile with regard to their knowledge and risks related to it and that process of green transformation may even increase the probability and/or severity of knowledge risks. Becoming aware of the potential consequences of such knowledge risks, managers may handle the process of green transformation in a better, more successful way.

The limitations of this paper are similar to those of theoretical or conceptual papers. The presented paper is based on prior literature and the authors' reflections, experience, and analysis. Thus, to check for the suitability of the risks proposed, there is a need for empirical studies in organizations in the process of green transformation. Such studies are planned by the authors in the near future.

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