

# Autonomy and Knowledge Processes: A Systematic Literature Review

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**Abstract:** Knowledge processes, such as knowledge creation, sharing and application, enable knowledge production that increases innovation and superior organizational performance. Knowledge processes are ultimately and fundamentally conducted – or not engaged in – by the individuals. Hence, knowledge production is disrupted if individuals are prevented from using their knowledge production potential. One potential factor that causes disruption in knowledge production is the lack of autonomy. As autonomy means self-governance and independency, it enables independent and unique knowledge processing by the individual, and thereby supports both individual and collective level knowledge production. Despite the importance of the role of autonomy in knowledge production, there is no research-based knowledge of which knowledge process have been studied from the perspective of autonomy, and what has been left unexplored. This research clarifies the research literature by finding out which knowledge processes have been studied from the point of view of autonomy. Also, what has been found concerning the relationship between autonomy and knowledge processes is considered. The research was conducted as a systematic literature review supplemented by qualitative content analysis in which the articles up the year 2022 from databases Scopus and Web of Science were reviewed. The most notable finding of this study is the lack of research between autonomy and knowledge identification and the paucity of research between autonomy and knowledge internalization. This is a significant finding since knowledge identification affect what knowledge is processed and produced in the organization. Internalizations in turn affects knowledge-based orientation and knowledge production in the organizational environment. This paper contributes to the organizational research literature by summing up the existing research on the interface of autonomy and knowledge processes and provides a refined understanding on the central role of autonomy in the effective implementation of knowledge processes, as well as avenues for future research.

**Keywords:** Knowledge processes, Knowledge production, Autonomy

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## 1. Background

Knowledge is critical resource in the organizational context (e.g., Barney, 1986; Grant 1996). Organizations need explicit and tacit knowledge to guide daily operations and goal-oriented activities. Especially, success in the knowledge-intensive business depends on the organization's ability to acquire knowledge, create knowledge, and utilize knowledge. Due to importance of knowledge, each individual's tacit and explicit knowledge and knowledge-related activity which promotes production of new knowledge is needed. Individuals must not only create individualistic knowledge but also strengthen the collectivistic knowledge.

In practice, knowledge production takes place through knowledge processes. One well-known categorization of knowledge processes has been done by Heisig (2009), in which the most well-known processes are identifying, acquiring, sharing, creating, utilizing, storing knowledge. Accordingly, in this study, knowledge processes are defined as knowledge-related activities by which individuals and collectives handle and produce knowledge. However, knowledge processes as such are not enough since successful knowledge management is also influenced by contextual factors (Heisig, 2009). Autonomy has been seen as an important contextual factor for example in the SECI-model (Nonaka, Toyama & Konno, 2000).

Autonomy refers to self-governance or independency (Kühler & Jelinek, 2012). Thus, it is related to the independent and voluntary action of the individual and the community. In this study autonomy is defined as an individual's independence and self-governance and as an ability to act autonomously. In the organizational context, autonomy can be manifested in the freedom, independence and discretion given to the individuals to conduct their own work (Hackman & Oldham, 1976). Furthermore, autonomy as one of the needs of the individual mediates the impact between job design factors and motivation and is likely to increase intrinsic motivation and improve performance at work (Deci, Olafsen & Ryan, 2017). Also, autonomy given to the individuals is likely to motivate individuals to produce new knowledge (Nonaka, Toyama & Konno, 2000).

The importance of autonomy for knowledge production is that it enables independent and unique knowledge processing by the individual, and thereby enriches individualistic and collectivistic knowledge production in the organizational context. Like Huang, Hsieh and He (2014) have noted, to come up with novel and creative ideas, the individual must be able to link and make use of ideas and viewpoints from various sources to expand the

scope of knowledge. This expansion of the knowledge scope happens through various knowledge processes. If the individual is unable or not allowed to conduct knowledge processes sufficiently autonomously, the unique potential of the individual for knowledge production remains unused. The production of knowledge requires active and goal-oriented management of multiple knowledge processes, in a way which enable autonomy.

Despite the widely recognized significance of autonomy in knowledge production, there is no research-based knowledge of which knowledge process have been studied from the perspective of autonomy. And more importantly, what has been left unexplored. This is a significant research gap since knowledge production is based on knowledge process and autonomy enriches individual and collective knowledge resources. The aim of this research is to conduct a systematic literature research and clarify which knowledge processes have been studied from the point of view of autonomy. The research question is: What knowledge process have been studied from the perspective of autonomy? Also, what has been found concerning the relationship between autonomy and knowledge processes is considered. Furthermore, the need for further research is discussed.

## 2. Method

The research was conducted as a systematic literature review supplemented by qualitative content analysis in which the articles from years 1978-2022 from databases Scopus and Web of Science were reviewed. The phases of the literature search and content analysis were the following: 1) Defining the database to be used for retrieving the research data, 2) Defining the literature search string (Table 1). Wildcards asterisk (\*) were used to expand the search (e.g., shar\* to find share and sharing), 3) Determining further inclusion and exclusion criteria – empirical research, article written in English and journal articles were included. Articles concerning non-human autonomy and review-articles were excluded, 4) Article search from Scopus – search found 1419 articles, 5) Selection of articles by title – 253 articles were selected, 6) Selection of articles based on the abstract – 116 articles were selected, 7) Selection of articles based on the full text – 75 articles were selected, 8) Article search from Web of Science – 624 articles were found, 9) Removal of articles already selected in the Scopus search and selection of articles by title – 22 articles were selected, 10) Selection of articles based on the abstract – 5 articles were selected, 11) Selection of articles based on the full text – 3 articles were selected, 12) Qualitative content analysis. In the content analysis, it was extracted from each article which knowledge process has been studied in the research and what has been found concerning the relationship between autonomy and knowledge processes.

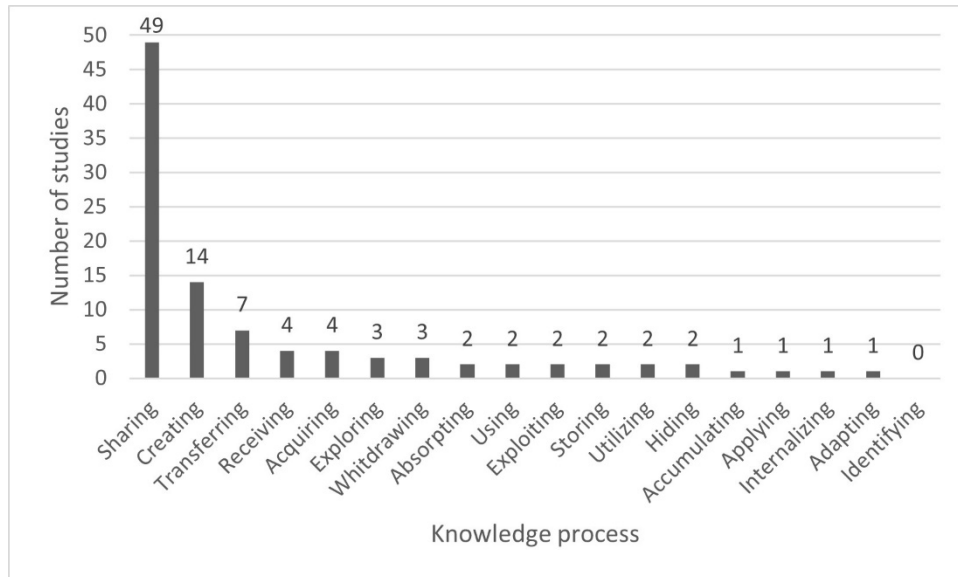
**Table 1: Literature Search String**

Literature search string.
TITLE-ABS-KEY ( ( "Knowledge management" OR "knowledge process*" OR "knowledge shar*" OR "knowledge transfer*" OR "knowledge creati*" OR "knowledge us*" OR "knowledge utili*" OR "knowledge appli*" OR "knowledge identify*" OR "knowledge acqui*" OR "knowledge explo*" OR "knowledge stor*" ) AND ( "autonom*" OR "independen*" ) ). Search was limited to subject categories Business, management and accounting, social sciences and psychology which were considered to cover comprehensively the studies related to the topic.

## 3. Findings

A total of 78 articles were selected for the content analysis, of which the oldest was from year 2000. The number of studies of each knowledge process is shown in Figure 1. Derived from the content analysis this research has five major findings. *First*, the research on knowledge processes from the perspective of autonomy has been dominated by knowledge sharing (63%) and knowledge creation (18%). For example, studies have found a positive connection between job autonomy (i.e., extent to which employees can decide and control work programs, methods and schedules) and intention to share knowledge (Wu et al., 2022) and engagement in knowledge sharing (Cabrera, Collins & Salgado, 2006). However, Wu et al. (2022) didn't find moderating effect of job autonomy on the connection between attitude toward knowledge sharing and knowledge sharing intention. They suggested that job autonomy may reflect negatively on the intention to share knowledge if the individual experiences excessive social pressure to share knowledge. Correspondingly, Buch et al. (2015) have suggested that in a situation where the individual needs support from a supervisor but experiences a lack of it, high job autonomy may have a negative effect on knowledge sharing. In addition, it has been found that autonomous motivation (identified and intrinsic motivation) is positively related to knowledge sharing intention (Hon, Fung & Senbeto, 2022) and that the more autonomy the job provides, the more the employee will be autonomously motivated to share knowledge (Foss et al., 2015).

In the research addressing knowledge creation, for example, Lloria (2007) and Lloria and Peris-Ortiz (2015) have verified a positive connection between autonomy (freedom to absorb, create, transfer, apply knowledge) and knowledge creation. However, in a study by Song, Uhm and Kim (2012) job autonomy didn't have a moderating effect between creativity and knowledge creation practices. They concluded that task-related support could encourage creative thinking and knowledge creation practices in the organization. Results indicate that autonomy has positive effects on knowledge sharing and knowledge creation but this may require sufficient task-related support from the organization.



**Figure 1: Knowledge Processes and the Number of Studies**

*Second.* Systematic literature search did not find any research concerning knowledge identification. This is a stunning finding when noticing the role of knowledge identification in knowledge production. In the research literature knowledge identification has been connected to knowledge search, finding knowledge and knowledge value assessment (Ortiz, Donate & Guadamillas, 2018). Thus, it relates to the awareness of what and where knowledge is available and what is its relevance to business operations (Wang 2001). Knowledge identification has also been seen as a previous step in the knowledge acquisition and absorption process (Ortiz, Donate & Guadamillas, 2018). The importance of knowledge acquisition and absorption has been demonstrated in the articles considered in the content analysis. For example, Oh and Lee (2022) have defined knowledge acquisition as a process in which individuals in the organization actively explore and retain tacit and explicit knowledge. The point is that as knowledge identification precedes knowledge acquisition and knowledge absorption (i.e., what knowledge is acquired and absorbed) it may have significant role in knowledge production. Consequently, organizations could benefit from the capability to utilize the ability of autonomously thinking individuals to identify different kind of knowledge from different kind of sources, which may contribute to the production of valuable knowledge.

*Third.* One study has considered knowledge internalization. In that research, Ho et al. (2014) studied how autonomy is related to knowledge management circulation process (creation, accumulation, sharing, utilization, internalization) and its effect on performance at work. They linked internalization to the individual's ability to produce new knowledge through previously obtained knowledge. Contrary to their hypothesis they found that autonomy does not significantly affect knowledge circulation process. Since the knowledge-based orientation of individuals is at least partially based on knowledge stored in memory (e.g., Klein, 2013), the scant study of internalization is surprising.

*Fourth.* Eight percent of the reviewed articles have concentrated on knowledge process which may hinder knowledge production (i.e., knowledge withholding, knowledge hiding, dysfunctional knowledge sharing). Knowledge withholding means that the individual does not make a full contribution to the production of knowledge (Pan & Zhang, 2018) and knowledge hiding has been linked to an attempt to withhold or conceal knowledge (Gagne et al., 2019). Thus, both of these activities may lead to the loss of knowledge possessed by the individual. Dysfunctional knowledge sharing may take a form of sharing knowledge that is harmful to the organization or appear as an activity in which useless knowledge is masked as useful (Cockrell, Stone & Wier,

2018). Sharing useless knowledge may distort the joint production of knowledge in the organization, whereas sharing harmful knowledge may otherwise impede organizational success. Contrary to their expectations, Pan and Zhang (2018) found a positive connection between job autonomy and knowledge withholding. On the other hand, Stenius et al. (2016) have found a negative association between autonomous motivation and knowledge withholding. Furthermore, Cockrell, Stone and Wier (2018) have found that autonomous motivation is associated with less dysfunctional knowledge sharing. It could be concluded that whereas job autonomy may be related to knowledge withholding autonomous motivation is not. However, Gagne et al. (2019) couldn't verify their hypothesis that autonomous motivation is negatively related to knowledge hiding.

*Fifth.* Before the year 2011, research has focused almost exclusively on knowledge sharing and knowledge creation. During the last 10 years, the research between autonomy and knowledge processes has increased and diversified. However, systematic and continuous growth concerns only knowledge sharing (Figure 2).

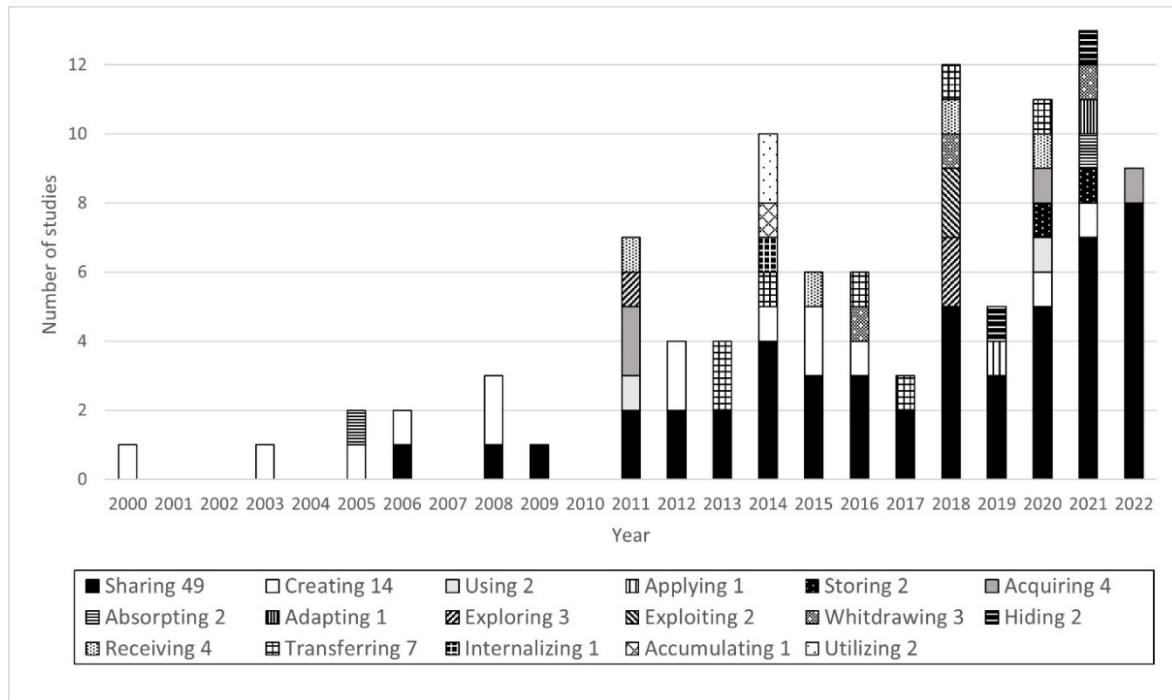


Figure 2: Relative Numbers of Studies Connecting Autonomy and Knowledge Processes in the Years 2000-2022

#### 4. Discussion and Conclusion

A systematic literature review was conducted to clarify which knowledge processes have been studied from the point of view of autonomy. Also, what has been found concerning the relationship between autonomy and knowledge processes was considered. The premise for the research was the importance of knowledge processes in knowledge production and the role of autonomy in enabling the independent and unique knowledge processing by the individuals which supports individualistic and collectivistic knowledge production. This study demonstrated the coverage of knowledge processes in knowledge process-autonomy research and brought out research avenues to promote the utilization of the knowledge potential of the individuals in the organizational context. The key findings of the study are discussed in the following.

##### 4.1 Knowledge Processes In Knowledge Process-Autonomy Research

Knowledge processes-autonomy-research has focused on knowledge sharing and knowledge creation. Particularly, knowledge sharing has been the most popular research subject. This is not surprising, since knowledge sharing is a natural way of learning between individuals, increasing individualistic and collectivistic knowledge and creating shared understanding among the individuals. This is clearly demonstrated in SECI-model (Nonaka, Toyama & Konno, 2000). Research results indicate that autonomy has predominantly positive effects on knowledge sharing and knowledge creation, but this connection is not unambiguous in all circumstances. For example, research has shown that job autonomy is related to engagement to share knowledge (e.g., Cabrera, Collins & Salgado, 2006) and that autonomous motivation is positively related to knowledge sharing (e.g., Hon, Fung & Senbeto, 2022). However, job autonomy may reflect negatively on knowledge sharing in a situation

where the individual experiences social pressure to share knowledge (Wu et al., 2022) or in a situation where the individual does not receive sufficient support from a supervisor and autonomy is perceived as excessive (Buch et al., 2015).

Systematic literature search did not find any research concerning autonomy and knowledge identification. This is notable as knowledge identification has a central role in knowledge production. For example, Wang et al. (2001) have noted that an effective knowledge management requires that organizations understand what and where knowledge is available and how it can be achieved and whatever it fits with business operations. Furthermore, Ortiz, Donate and Guadamillas (2018) have seen that knowledge acquisition is more effective in organizations which have high levels of knowledge identification capability and that organizations should develop identification capabilities especially when competing in dynamic environment. As autonomy at work enables independent and unique thinking and acting it may expand the possibility to identify different kind of knowledge from different sources. Organizations may benefit of the capability to detect and identify strong and weak signals of knowledge which either supports or refines existing knowledge or may be new source of knowledge creation.

Only one research has concerned knowledge internalization. In that research Ho et al. (2014) measured knowledge internalization as a part of knowledge circulation process. Contrary to their hypothesis autonomy didn't have significant impact on knowledge circulation process. Clearly this important topic has not been sufficiently studied. It is known that the knowledge stored in the memory of the individuals affects the orientation to the future and aids to anticipate events and to decide which actions to take (e.g., Klein, 2013). It also promotes the acquisition of new knowledge (Grant, 1996). Furthermore, as knowledge becomes internalized as part of individuals tacit knowledge base in the form of mental model it becomes a valuable part of an individual's knowledge assets and an essential part of collective knowledge creation (Nonaka, Toyama & Konno, 2000). Consequently, in the organizational context it matters what knowledge becomes internalized, as internalizations reflect on knowledge-related orientation and knowledge production. The point is that individuals in the organizations must internalize business-relevant knowledge and act accordingly. In other case, the knowledge production of autonomously acting individuals would be inappropriate or inconsistent in relation to the organizational goals.

Considerably less attention has been paid to knowledge processes which have a detrimental effect on knowledge production, e.g., knowledge withholding and hiding. As knowledge withholding means that the individual does not participate to the knowledge production (Pan & Zhang, 2018), it leads to the loss of tacit knowledge of the individual. Contrary to their expectations, Pan and Zhang (2018) found that job autonomy is positively related to knowledge withholding. Also, Gagne et al. (2019) didn't find a negative connection between autonomous motivation and knowledge hiding or that job autonomy is indirectly negatively related to knowledge hiding through its effect on autonomous motivation. On the contrary, Foss et al. (2014) have found the positive connection between job autonomy and intrinsic motivation to share knowledge. Pan and Zhang (2018) proposed that the unexpected positive relationship between job autonomy and knowledge withholding might be explained by the motivation–opportunity–ability framework or with factors related to power structure, since employees with high job autonomy may keep critical knowledge because of fear of losing power.

On the whole, research between autonomy and knowledge processes has increased and diversified during the last ten years. One explanation for the phenomenon may be the growing importance of knowledge in modern working life in general. Furthermore, modern working life requires that the individuals are more self-directed than before. Together, these developmental trends have led to an increased need to understand how autonomous individuals contribute to the knowledge production. However, there has been systematic and continuous growth mostly only in research on knowledge sharing. Otherwise, research on knowledge processes and autonomy has developed relatively slowly despite its importance.

#### **4.2 Future Research Streams**

In general, future research on autonomy and knowledge processes could focus more broadly on different types of knowledge processes. Particularly, it is important to focus on how the autonomous individuals identify different kind of knowledge since it influences what knowledge is acquired, absorbed, created, shared, internalized, used and utilized in the organization. Secondly, more knowledge about the knowledge internalizations is needed as it affects how the autonomous individuals think, act, utilize and produce new knowledge in the organization. As pointed out above internalization is a prerequisite for efficient action. Thirdly, there is some unexpected research results regarding the connection between autonomy and knowledge sharing or knowledge withholding which requires further research. The research should find out why the individual may

experience autonomy or social pressure to share knowledge as excessive or engage in knowledge withdrawal. Fourthly, it was noted that in knowledge processes research autonomy has been studied using various concepts (e.g., autonomy, job autonomy, autonomous motivation) which reflects the multidimensionality of the concept of autonomy. Understanding the various facets of autonomy in autonomy-knowledge processes research is needed.

### 4.3 Limitations

The systematic literature review was conducted by one person, which gives room for subjective decision-making in the selection of articles. Other author could have reached different results. The impact of subjectivity was minimized by establishing precise inclusion and exclusion criteria and guidelines for the content analysis. However, some relevant articles may have remained unnoted.

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