Alexithymia, social inhibition, affectivity, and knowledge hiding

Roman Kmieciak

Abstract

Purpose – *This paper aims to examine the impact of adverse personality traits (alexithymia, social inhibition, negative affectivity) and supervisor knowledge hiding on individual knowledge hiding. This study also explores the moderating role of positive affectivity.*

Design/methodology/approach – *Partial least squares path modeling and data collected from 518 Polish employees with higher education and extensive professional experience recruited via an Ariadna survey panel were used to test the research hypotheses.*

Findings – *Two dimensions of alexithymia were considered: difficulty identifying feelings (DIF) and difficulty describing feelings (DDF). DIF has a direct impact on individual hiding, whereas DDF has an indirect impact, via social inhibition. Negative affectivity is a predictor of social inhibition, which enhances knowledge hiding. Positive affectivity slightly weakens the positive and strong effect of supervisor knowledge hiding on subordinate knowledge hiding.*

Practical implications – *Because alexithymia, social inhibition and negative affectivity may predispose employees to knowledge hiding, managers should identify these personality traits among job applicants and hired employees to make appropriate employment decisions. Moreover, managers should be aware that hiding knowledge by a supervisor may be imitated by subordinates.*

Originality/value – *Based on conservation of resources theory, this study investigates previously unexplored relationships among alexithymia, social inhibition, affectivity and knowledge hiding.*

Keywords *Alexithymia, Knowledge hiding, Affectivity, Social inhibition*

Paper type *Research paper*

Roman Kmieciak is based at Centre for New Technologies, Silesian University of Technology, Gliwice, Poland.

1. Introduction

Knowledge hiding (KH) is generally perceived as a counterproductive knowledge behavior (Chen *et al.*, 2022; Kmieciak, 2021; Serenko and Bontis, 2016) and defined as "an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person" (Connelly *et al.*, 2012, p. 65). With the growing interest in KH in organizations in recent years, various antecedents to KH have been investigated, both at the individual and organizational levels (for a review, see Siachou *et al.*, 2021). There has been relatively little research into the impact of personality traits on counterproductive knowledge behavior in the workplace (Geofroy and Evans, 2017). Nevertheless, it was found that knowledge hiding is related to competitive personality traits (Hernaus *et al.*, 2019) and the dark triad (Machiavellianism, narcissism, psychopathy) (Karim, 2020; Pan *et al.*, 2018). Recently, Serenko and Choo (2020) investigated the effect of the dark triad personality traits on knowledge sabotage, suggesting that other traits, including alexithymia and negative affectivity, may be related to counterproductive knowledge behavior and should be explored in future research. The present study responds to this call.

Alexithymia is viewed as a personality trait that refers to difficulty identifying and describing one's own feelings (Taylor *et al.*, 1985). This concept was originally used to characterize psychosomatic patients. However, it was recently applied to describe psychological deficits

in broader populations (Moriguchi *et al.*, 2007). It is estimated that the prevalence of alexithymia in the general population is 10% (Franz *et al.*, 2008; Mattila *et al.*, 2006) and in the working-age population is 9%–17% for men and 5%–10% for women (Mattila *et al.*, 2007). Previous research found a negative impact of alexithymia on individual's empathy (Aslan *et al.*, 2021), perspective taking (Banzhaf *et al.*, 2018), altruism (FeldmanHall *et al.*, 2013), interpersonal relationships (Besharat, 2010) and communication abilities (Meganck *et al.*, 2009). These results suggest that alexithymia may also have an impact on knowledge hiding, although there is a lack of empirical research on this issue.

Negative affectivity (NA) is an emotion-based trait that refers to experienced negative moods, including distress, disappointment, hostility, nervousness and anger (Watson *et al.*, 1988). Individuals with high negative affectivity have low self-confidence (Watson and Clark, 1984) and perceive environments as hostile (Thoresen *et al.*, 2003), which may lead to counterproductive work behaviors (Samnani *et al.*, 2014), withdrawal behaviors (Necowitz and Roznowski, 1994) and knowledge hiding (Ma and Zhang, 2021). The link between negative affectivity and knowledge hiding might be indirect. As Ma and Zhang (2021) claimed, high negative affectivity "may be accompanied by the deterioration of a colleague relationship, which leads to the rise of knowledge hiding behavior" (p. 7). Moreover, in psychological research, negative affectivity is often combined with social inhibition, which is characteristic of a distressed or Type D personality (Denollet, 2005). Therefore, social inhibition may play a significant mediating role in the relationship between NA and KH.

In contrast to individuals with high NA, those with high positive affectivity (PA) are optimistic, energetic, and enthusiastic (Watson *et al.*, 1988). As previous research has indicated, the positive attitude may deter employees from their negative response to different unfavorable organizational situations, including adverse organizational politics (Abbas *et al.*, 2014) and contract breaches (Jahanzeb *et al.*, 2020). However, what has not been examined is how individuals with high positive affectivity react when a supervisor hides knowledge from them and the extent to which this is reflected in their knowledge hiding behavior.

The literature review indicates that the effect of alexithymia and affectivity on knowledge hiding is underexplored. To fulfil this research gap, this study proposes a model of relationships between these phenomena. Because alexithymia is a multidimensional construct (Bagby *et al.*, 1994), the study investigates the separate influence of two dimensions of alexithymia; that is, difficulty identifying and describing feelings. Moreover, the model also includes social inhibition, which is expected to mediate relationship between negative affectivity and knowledge hiding. Additionally, it is proposed that positive affectivity moderate the relationships between supervisor knowledge hiding and subordinate's knowledge hiding from co-workers. Those two latter effects have not also been investigated previously. To provide theoretical arguments about the relationships between the above-mentioned constructs, this study uses conservation of resources (COR) theory (Hobfoll, 1989; Hobfoll *et al.*, 2018). In addition, the effect of supervisor knowledge hiding on subordinates' knowledge hiding is explained with a theory of behavioral contagion (Wheeler, 1966). The developed model was tested using data collected from 518 employees with high knowledge and professional experience. The results of this study contribute to theory of knowledge management by linking the psychological concepts of alexithymia, social inhibition and affectivity with KH in a novel way. Moreover, the results provide suggestions to managers interested in limiting KH at workplaces.

2. Theoretical background

2.1 Knowledge management and hiding

It is widely recognized that knowledge management contributes to better firm performance and achieving competitive advantage (Cillo *et al.*, 2019, 2021; Rossi *et al.*, 2020; Santoro *et al.*, 2021). Consequently, with the aim of improving the effectiveness of KM, empirical

research has sought to explain what influences the willingness of employees to share knowledge. These studies have analyzed various situational, interpersonal and individual factors that favored or inhibited knowledge sharing (Michna and Kmieciak, 2020). However, as Pan et al. (2018) noted, "despite all these efforts, knowledge hiding among employees is still pervasive" (p. 36). Moreover, Caputo et al. (2021) claimed that knowledge hiding "seems to still be a sort of black box in which human resources are trapped" (p. 20). These conclusions result from the fact that knowledge hiding is not the opposite of knowledge sharing. Conceptually, knowledge hiding and knowledge sharing are different constructs and require separate research (Anand et al., 2021).

KH, defined as deliberately concealing requested knowledge (Connelly et al., 2012), is not necessarily intended to harm a person or organization, but is instead a response to a specific situation (Connelly and Zweig, 2015; Koay and Lim, 2021; Xiong et al., 2021). KH is driven by various factors (Anand et al., 2021; Caputo et al., 2021; Koay et al., 2020; Yao et al., 2020) and can be examined from the dispositional, ownership and leadership perspective (Agarwal et al., 2021).

Employee behavior often results from the principle of reciprocity. If an employee encounters knowledge hiding on the part of his colleagues, then he or she will also be more inclined to retain knowledge (Geofroy and Evans, 2017). Retaining knowledge may be caused by time constraints – in conditions of time pressure, employees are willing to focus on tasks that bring them more benefits than sharing knowledge (Michailova and Husted, 2003). Some employees may believe that knowledge becomes less valuable if it is shared with others and that KH is beneficial to their career development, maintaining position, status or power within the company (Koay et al., 2020; Riege, 2005). KH may also result from the employee's fear that superiors will sabotage the professional promotion of a subordinate if they consider the subordinate to be more knowledgeable than them (Michailova and Husted, 2003).

The dispositional perspective assumes that some personality traits may predispose to knowledge hiding behavior (Agarwal et al., 2021). In line with this perspective, some studies have started to investigate knowledge hiding in relation to various personality traits (Arshad and Ismail, 2018; Hernaus et al., 2019; Karim, 2020; Pan et al., 2018). For example, Pan et al. (2018) noted that different dimensions of the dark triad are significantly and positively related to different knowledge hiding strategies (evasive hiding, playing dumb and rationalized hiding). Belschak et al. (2018) claimed that the impact of Machiavellianism on knowledge hiding is weakened under highly ethical leaders. Arshad and Ismail (2018) found that the effect of workplace incivility on knowledge hiding is moderated by neuroticism.

2.2 Conservation of resources theory perspective

According to conservation of resources (COR) theory, "people strive to retain, protect, and build resources and that what is threatening to them is the potential or actual loss of these valued resources" (Hobfoll, 1989, p. 516). Resources are viewed very broadly as valued entities including objects (such as tools for work), conditions (such as employment), personal characteristics (personal traits, key skills, etc.) and energy resources (such as knowledge) (Hobfoll, 2001; Hobfoll et al., 2018). Hence, resources also include psychological resources (hope, sense of optimism, positive feeling about oneself, etc.) and social resources (such as support from co-workers and the ability to communicate well) (Hobfoll, 2001).

The present paper has argued that alexithymics and socially inhibited individuals have psychological and social resources deficiencies, which influence their knowledge investment choices. In particular, they have a limited ability to identify and express their feelings, communicate and/or socialize. That sense of resource deficiencies may lead

them to conserve other resources, such as knowledge. So, although they may have appropriate knowledge, skills and time, they may hide knowledge, because knowledge sharing is viewed as resource expenditure. However, the COR theory also assumes that "people must invest resources in order to protect against resource loss, recover from losses, and gain resources" (Hobfoll *et al.*, 2018, p. 106). So, knowledge sharing and building interpersonal relations can be viewed as investments that may help people gain resources. For example, it was found that knowledge sharing has a positive impact on knowledge reciprocation (Radaelli *et al.*, 2014), the quality of social relationships with co-workers, and subjective well-being (Jiang and Hu, 2016). Gaining social resources might be particularly appealing to alexithymics and socially inhibited individuals. However, they may be not sufficiently interested in such potential gain because of their strong sense of resources deficiencies and fear of further resource loss. According to COR theory, individuals with low levels of resources are more sensitive to resource loss and have lower ability to gain resources than those with higher levels of resources (Hobfoll *et al.*, 2018). This is because the low-resource individuals are concerned about the risks of investing in new resources and losing the rest of their own resources. Therefore, this study proposes that alexithymics and socially inhibited individuals have a tendency to KH because they are more interested in resource protection than in resource gain.

2.3 Alexithymia

The term "alexithymic" was coined by Sifneos (1973) to describe individuals who were unable to find appropriate words for their moods and emotions. Later, Sifneos (1991) described alexithymia as deficits that involved "an inability to identify and use language to describe feelings, inability to differentiate between emotions with their bodily sensations and feelings, paucity of dreams and fantasy life, and a tendency to describe endless details surrounding a particular emotion-arousing episode which was referred to as an operational way of thinking or as '*pensee operatoire*'" (p. 118). Scholars have since distinguished between primary and secondary alexithymia. Primary alexithymia is considered as a stable personality trait that is formed in childhood and early adulthood, while secondary alexithymia results from somatic disease, psychological stress or other sociocultural and psychodynamic factors (Goerlich, 2018; Tolmunen *et al.*, 2011). Alexithymia appears to be a stable trait across the lifespan in general healthy populations (Morie *et al.*, 2016; Palma-Álvarez *et al.*, 2021).

The alexithymia construct includes three related factors: difficulty identifying feelings (DIF), difficulty describing feelings (DDF) and externally orientated thinking style (EOT) (Bagby *et al.*, 1994). DIF reflects the extent to which people have difficulty identifying their own inner emotional states and distinguishing between feelings and bodily sensations. DDF reflects one's ability to find the right words to name their own feelings and to verbalize those feelings to other people. As Goerlich (2018) noted, DIF and DDF are usually highly correlated because identifying a feeling requires labeling the feeling. Finally, the third factor of alexithymia, EOT, reflects the degree to which people focus on the specific details of external actions rather than the analysis of their own and others' feelings, emotions and other aspects of internal experiences. DIF, DDF and EOT are perceived as three cognitive alexithymia facets (Goerlich-Dobre *et al.*, 2014).

2.4 Alexithymia and knowledge hiding

Although there is no empirical research on a relationship between alexithymia and knowledge hiding, there are premises suggesting the existence of such a relationship. Alexithymia is accompanied by a specific style of interpersonal relations. This is because alexithymics find it difficult not only to identify and name their own emotions but also, by extension, to distinguish and appreciate other people's emotions (Cook *et al.*, 2013;

Scheerer *et al.*, 2021). Consequently, alexithymia is negatively related to social competence (Scheerer *et al.*, 2021), including empathy (Aslan *et al.*, 2021; Moriguchi *et al.*, 2007) and altruism (FeldmanHall *et al.*, 2013).

First, alexithymics have a deficit in recognizing their own emotional states, which leads to an impairment in empathy (Moriguchi *et al.*, 2007). As Moriguchi *et al.* (2007) argued, "Self-awareness is a fundamental aspect of empathy because the individual's recognition of their own feelings is the basis for identification with the feelings of others" (p. 2223). Previous empirical research has confirmed that alexithymia is inversely related to empathy (Aslan *et al.*, 2021; Guttman and Laporte, 2002). Empathy, including empathic concern and perspective taking, determines interpersonal relationships and good empathy skills make it possible to identify and understand other people's needs and preferences (Aslan *et al.*, 2021). Empathic people have an inner desire to reduce others' distress and help others improve their situation (Decety *et al.*, 2016). Hence, they are more eager and willing to respond to other people's knowledge needs and share knowledge (van den Hooff *et al.*, 2012). Moreover, as Škerlavaj *et al.* (2018) found, employees who engage in perspective taking are expected to avoid hiding knowledge from co-workers. On the other hand, alexithymic employees, who have difficulty identifying and understanding other people's emotions, expectations, and situations, can remain indifferent to requests for knowledge and hide knowledge from co-workers.

Second, alexithymics behave less altruistically because of emotional blunting. As FeldmanHall *et al.* (2013) explained, alexithymics have impaired cognitive mechanisms to identify and register distress of others, which means they are less sensitive and responsive to others' distress. A diminished distress response results in less prosocial choices and more self-serving behavior. Thus, the inability to read the emotions and distress of co-workers suffering from a lack of adequate knowledge may contribute to selfish behaviors and, consequently, hiding knowledge. As Riege (2005) noted, such selfish behaviors as protection of one's corporate position, power or status might be reasons for knowledge hoarding. In turn, altruism was found to be positively related to knowledge sharing (Obrenovic *et al.*, 2020). Taking into account the above argumentation, it is assumed that one of the three dimensions of alexithymia – difficulty identifying feelings – might be particularly related to knowledge hiding. Hence, the following hypothesis was stated:

H1. Difficulty identifying feelings has a positive effect on individual knowledge hiding.

2.5 Social inhibition

Social inhibition reflects "the tendency to inhibit the expression of emotions/behaviors in social interactions to avoid disapproval by others" (Denollet, 2005, p. 89). More recently, it has been described as a stable personality trait among adults that manifests through three facets: behavioral inhibition, social-evaluative concerns and social withdrawal (Denollet and Duijndam, 2019). These three facets reflect, respectively, behavioral, cognitive and affective characteristics of social inhibition. Behavioral inhibition is related with difficulties making contact and conversation with others, less talkability, hesitation in speech, and inhibition in presenting own ideas. Social-evaluative concerns refers to interpersonal sensitivity, including concerns about negative social evaluation and fear of criticism from others. Finally, social withdrawal is a self-enhancing strategy to avoid social interactions when negative reactions from others and social stress are expected. Generally, socially inhibited individuals feel uncomfortable around other people and lead less active social lives (Gest, 1997; de Moor *et al.*, 2018). When social interaction is expected, they may use various safety behaviors, such as looking away or remaining in the background, to reduce the level of anxiety (Duijndam *et al.*, 2021).

2.6 Alexithymia and social inhibition

One of the dimensions of alexithymia is difficulty describing feelings (DDF), which means that alexithymics have difficulty with the cognitive processing of emotions and verbalizing their own feelings and emotions. Difficulty with the cognitive processing of own emotions hinders the development of other cognitive abilities, such as identifying and describing emotion in others. This inability to describe oneself and the environment can negatively affect communication and interaction with other people (Scheerer et al., 2021). Alexithymics may feel that they are not good conversation partners because they cannot express their feelings and therefore do not meet the expectations of the interlocutor. Moreover, alexithymics have problems recognizing emotion in others (Cook et al., 2013), which may cause their response to another person's emotions to be inappropriate or not as expected. Consequently, alexithymics may feel psychological discomfort in relationships with others. As Scheerer et al. (2021) noted, "emotional awareness and understanding are essential aspects of social engagement and understanding" (p. 1253). Meganck et al. (2009) found that alexithymics use a less complex vocabulary to describe their relationships with others. Summarizing previous research, Vanheule et al. (2007) reported that alexithymics tend to avoid close social relationships and treat others in a cold, distant and unempathetic manner. Thus, this imperfection in communication skills, describing and interpreting emotions, observed among alexithymics, can cause alexithymics to experience frustration and disappointment among their social environment. As a consequence, alexithymics may lead a limited social life, including meeting new people and creating close relationships with them. Therefore, the following hypothesis is proposed:

H2. Difficulty describing feelings has a positive effect on social inhibition.

2.7 Positive and negative affectivity

Affectivity can be defined as "an emotion-based trait dimension that creates a cognitive bias through which individuals approach and understand experiences and may affect how they experience and evaluate jobs" (Naquin and Holton, 2002, p. 359). The dominant view, popularized by Watson et al. (1988), is that affectivity encompasses two basic distinctive dimensions: positive affectivity (PA) and negative affectivity (NA). PA refers to experiencing positive emotional states and pleasant engagement with the environment. Individuals with high PA are energetic, enthusiastic, active and alert, whereas those with low PA are sad and lethargic. In contrast, NA is accompanied by dysphoria and a conviction of impending trouble (Denollet, 2005). High-NA individuals concentrate more on negative aspects of life, their own mistakes, disappointments and weaknesses (Naquin and Holton, 2002). They experience different aversive mood states such as shame, hostility, nervousness, fear, and anger, whereas those with low NA are calm and untroubled (Watson et al., 1988).

2.8 Negative affectivity and social inhibition

Negative affectivity may have a significant effect on social interactions. First, individuals with high negative affectivity have a negative self-concept and tend to dwell on adverse facets of themselves. Focusing on their own mistakes, shortcoming and disappointments may be linked to low self-esteem and self-confidence (Watson and Clark, 1984), which are barriers to building interpersonal relationships (Harris and Orth, 2020). People with low self-esteem and a lack of self-confidence fear social rejection (Don et al., 2019; Zhou et al., 2020) and tend to avoid communication situations (Oktary et al., 2019; Pearson et al., 2011), hence they may be socially inhibited. Second, high-NA individuals tend to focus on the negative aspects of other people and the world in general. They perceive their environment as more hostile and threatening (Thoresen et al., 2003). In situations requiring the interpretation of other people's behavior, they are more likely to attribute malicious motives to others (Penney and Spector, 2005). Subordinates who are high on NA perceive their supervisor's

punishment actions as harsher, which leads to less trusting in supervisor and less organizational commitment (Ball *et al.*, 1993). Moreover, in response to perceived organizational unfairness, high-NA individuals are more likely to engage in organizational retaliatory behavior (Skarlicki *et al.*, 1999). High-NA individuals are predisposed to perceive work and co-workers unfavorably and dwell on instances of negative interpersonal treatment (Bowling *et al.*, 2008). A meta-analysis conducted by Thoresen *et al.* (2003) revealed that NA was positively related to emotional exhaustion, depersonalization (that is, treating others as objects, in a callous and cynical manner) and turnover intention, but negatively related to job satisfaction, organizational commitment and personal accomplishment.

Even in a pleasant workplace and in the absence of objective stressors, high-NA individuals are likely to feel more distress, frustration and dissatisfaction than individuals with low negative affectivity (Necowitz and Roznowski, 1994). Therefore, the following hypothesis is proposed:

H3. Negative affectivity has a positive effect on social inhibition.

2.9 Social inhibition and knowledge hiding

Personality traits are significantly related to willingness to share or hide knowledge (Agyemang *et al.*, 2016; Pan *et al.*, 2018). One of these traits might be social inhibition. The impact of social inhibition on knowledge hiding can be explained through two intertwined mechanisms. First, socially inhibited individuals avoid socializing. Therefore, they have less opportunity to learn about behaviors and feelings of others, to develop empathy, mutual trust and reciprocal behavior. As research has shown, high-inhibited individuals have less empathy and less ability to solve social problem (Bengtsgard and Bohlin, 2001) and an increase in social withdrawal leads to a decrease in social trust (Aboutorab and Raziyeh, 2012). Moreover, scholars have highlighted the importance of empathy and trust for reducing knowledge hiding (Geofroy and Evans, 2017). For example, it is advised to provide opportunities for socializing beyond work to form trust between employees and overcome knowledge hiding (Anand and Hassan, 2019). Hence, avoiding socializing and its results in terms of lack of trust and empathy might be predictors of knowledge hiding. Second, socially inhibited individuals are shy and feel uncomfortable around other people and having difficulty initiating and conducting conversations (Duijndam *et al.*, 2021). Thus, they may be reluctant to speak up and present their own initiatives, ideas and solutions. Consequently, although they have appropriate and desired knowledge, they can deliberately avoid social interactions that would require sharing their knowledge with others. In line with this idea, previous studies have revealed that shyness and lack of confidence are important barriers to face-to-face knowledge sharing (Majid *et al.*, 2015; Yao *et al.*, 2007). Therefore, the following hypothesis was put forward:

H4. Social inhibition has a positive effect on knowledge hiding.

2.10 Supervisor knowledge hiding and knowledge hiding

Under social exchange theory (Cropanzano and Mitchell, 2005) and the norm of reciprocity (Gouldner, 1960), we tend to reciprocate other people's behavior toward us. Therefore, if we know or suspect that other people are hiding knowledge from us, then we are more likely to hide our knowledge from those people. Empirical research confirms this reciprocity (Černe *et al.*, 2014; Serenko and Bontis, 2016). However, an interesting question is whether the superior's hiding knowledge from us influences our decisions about hiding knowledge from co-workers who are not our superiors. A conversation of resource theory (Hobfoll, 1989) and a theory of behavioral contagion (Wheeler, 1966) may be helpful to explain this influence.

First, according to COR theory, people fear they will lose their resources (Hobfoll, 1989). One of the threats are stressful work conditions. When confronted with such conditions, employees strive to minimize loss of resources. In line with this logic, in response to stress and other adverse organizational situations, employees can become involved in deviant work behaviors to maintain a sense of self-worth (Jahanzeb *et al.*, 2020). For example, if employees have committed a lot of energy to work, and the organization does not honor its obligations to them, then employees may engage in knowledge-hiding behavior to avoid further resource losses, maintain self-esteem and control over own knowledge (Jahanzeb *et al.*, 2020). Supervisor knowledge hiding may be perceived as a stressful work condition and as a threat to resources possessed by subordinates, such as knowledge, mastery and status within the organization. A supervisor who hides knowledge from his or her subordinates deprives them of the chance to update their knowledge. Consequently, subordinates may respond by protecting and hiding their own knowledge resources from co-workers to maintain or improve their status within the organization.

Second, behavioral contagion refers to the tendency or process in which certain behaviors exhibited by an actor are copied by observers who are socially related to the original actor (Heng *et al.*, 2019; Liao *et al.*, 2020). However, in contrast to other types of social influence, such as social pressures or conformity, in behavioral contagion the actor does not intend to evoke such coping process (Wheeler, 1966). As antisocial behaviors might be more contagious than pro-social ones (Dimant, 2019), prior research has typically used a theory of behavioral contagion to explain spreading undesirable behaviors (Heng *et al.*, 2019). It has been confirmed that employees may have a tendency to imitate undesirable or even deviant behaviors at the workplace (Gino *et al.*, 2009; Robinson *et al.*, 2014). For example, individuals imitate coworkers' routine safety violations (Liang *et al.*, 2018) and withdrawal behavior (Eder and Eisenberger, 2008). Recently, Serenko and Choo (2020) used a theory of behavioral contagion to justify the positive effect of a co-worker's knowledge sabotage on an individual's knowledge sabotage.

According to the theory of behavioral contagion, individuals may experience an internal conflict between certain behavior and internal restraints (Wheeler, 1966). In such a situation, they are not sure if they can perform this behavior. However, if they observe this behavior among other people, then the internal mechanisms of resistance to such behavior weaken. Cognitive mechanisms such as moral justification are activated, which allows people to engage in unethical behavior without feeling guilty (Ayub *et al.*, 2021; Bandura, 1999). Consequently, individuals may imitate the behavior of others. Behavioral contagion occurs when the initiator of the behavior and the follower are in a similar situation (Ogunlade, 1979). This condition is met at the workplace. Moreover, superiors are usually well suited as role models and closely observed by subordinates (Offergelt *et al.*, 2019). Therefore, it can be assumed that a subordinate from whom the superior hides knowledge may reduce internal restraints against knowledge hiding. Consequently, the subordinate is likely to mimic a superior's behavior and hide knowledge from co-workers. This is in line with the findings of Liu *et al.* (2020), who claimed that "if the status of an individual with knowledge concealment is higher, the behavior is more likely to be imitated by team members" (p. 8). Hence, the following hypothesis is proposed:

>   *H5.* Supervisor knowledge hiding has a positive effect on subordinate's knowledge hiding from co-workers.

2.11 The moderating role of positive affectivity

Conservation of resources theory assumes that the negative reactions of employees to unfavorable, stressful working conditions differ depending on their access to valuable personal resources (Hobfoll, 2001; Jahanzeb *et al.*, 2020). In the present study, it is proposed that positive affectivity is a personal resource that should moderate the relationship between supervisor knowledge hiding and subordinate's knowledge hiding

from co-workers. Individuals with high positive affectivity are full of optimism, energy and enthusiasm (Watson *et al.*, 1988). Their positive mood may serve as a buffer against stress and anxiety caused by various adverse organizational situations (Abbas *et al.*, 2014; Jahanzeb *et al.*, 2020), including supervisor knowledge hiding. Therefore, they may feel less need to react by hiding knowledge from co-workers as a way of preserving their resources and maintaining their influence and status within the organization. Individuals with high positive affectivity may be more willing to believe that a supervisor has important reasons for hiding knowledge and will hence be more likely to forgive or accept supervisor knowledge hiding. Moreover, they are more likely to believe that they can manage without this hidden knowledge or gain it in some other way. Therefore, positive affectivity is a personality trait that allows employees to adapt and deal more effectively with the distress related to supervisor knowledge hiding, so their reaction in the form of hiding knowledge from co-workers to protect their resources may become less important. Previous research has confirmed that positive affectivity can moderate the relationship between psychological contract breaches and knowledge hiding (Jahanzeb *et al.*, 2020). Similarly, it was found that optimism weakens the association between competitive psychological climate and knowledge hiding (Han *et al.*, 2020). These findings suggest the following hypothesis:

> *H6.* Positive affectivity moderates the relationship between supervisor knowledge hiding and subordinate's knowledge hiding from co-workers, in that the positive relationship will be weaker at higher levels of positive affectivity.

Figure 1 presents the research model.

3. Methodology

3.1 Sample and procedures

The data were collected using a questionnaire and in cooperation with the Polish online research platform Ariadna (panelariadna.pl). Ariadna National Research Panel is a professional and certified online survey company that has more than 150,000 active members. The company sent the questionnaire to potential respondents among its registered users. After completing the questionnaire, each respondent received points that

Figure 1 The proposed model
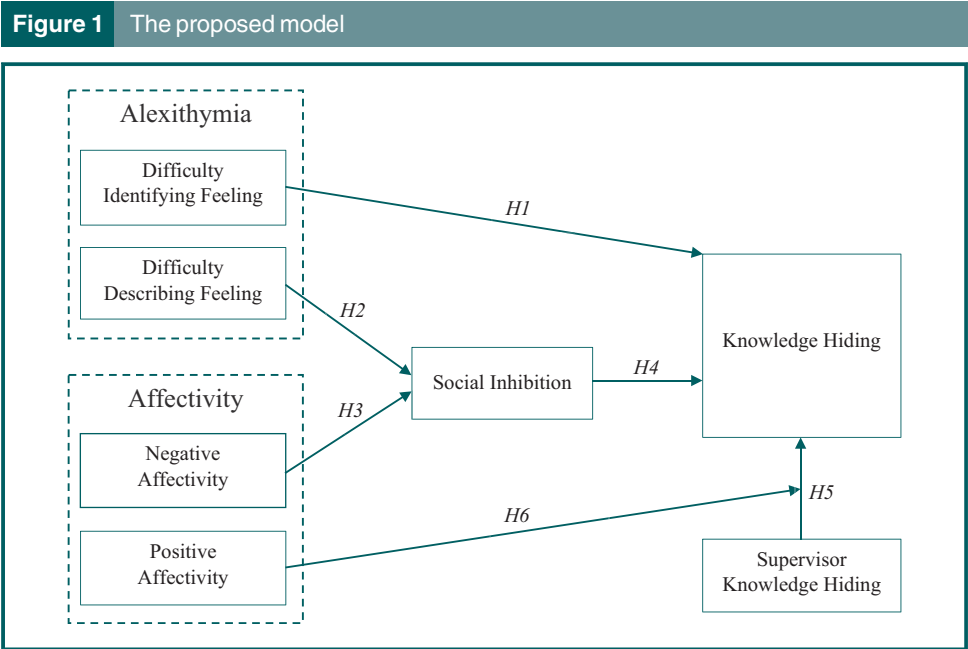
can be exchanged for prizes. A similar data collection method with a paid sample service has been in previous studies on undesirable knowledge behaviors (Ma *et al.*, 2020; Wu, 2020). This data collection method was selected for several reasons (Serenko and Choo, 2020). First, it makes it possible to obtain a large sample size quickly. Second, it ensures anonymity of respondents, which is important in studies on undesirable knowledge behaviors, such as knowledge hiding. Third, respondents come from different geographical locations and have diversified backgrounds, which improves the generalizability of research findings. Finally, this method makes it possible to implement many screening criteria. In this study, only the following respondents were qualified for the study: those with higher education, full-time employees, working in the private sector in enterprises employing at least 10 employees and with at least two years of work experience in the enterprise in which they currently work. These criteria were intended to ensure that the respondents were employees with high knowledge and experience. Data collection lasted for one week in May 2021. At that time, 4,149 people agreed to participate in the study, but 3,529 did not meet the screening criteria and 102 stopped filling out the questionnaire. Finally, 518 valid questionnaires were obtained.

Among the 518 participants, 63.9% were female. Respondents' average age was 38 years, ranging from 22 to 75. The majority of participants (41.1%) were between the ages of 25 and 34. Respondents' average job tenure in their current organization was seven years, ranging from 2 to 41. All respondents were highly educated: 25.5% had a bachelor's degree, 71.0% had a master's degree and 3.5% had a PhD.

The study was based on self-reported responses and a single questionnaire. Therefore, it is necessary to check whether the common method bias (CMB) has a serious impact on the study results. For this purpose, a Harman single-factor test was applied (Podsakoff *et al.*, 2003). Single factor was extracting 22.89% of the total variance. As this figure is less than 50%, it can be concluded that there is no threat of a significant CMB in this study.

3.2 Measures

All of the scales used in this study were previously established and validated. A full list of scale items is presented in the Appendix.

Alexithymia. Polish language version of the Toronto Alexithymia Scale TAS-20 (www. researchgate.net/publication/342330387) was used to measure alexithymia. Both the original English version (Bagby *et al.*, 1994) and the Polish translation of the TAS-20 (Ś cigała *et al.*, 2020) were found to be reliable and valid measures of alexithymia. TAS-20 is a self-report instrument and consists of three subscales:

1. difficulty identifying feelings (DIF, seven items);

2. difficulty describing feelings (DDF, five items); and

3. externally oriented thinking (EOT, eight items).

In this study the first two subscales of TAS-20 were analyzed; that is, DIF and DDF. Each item was scored on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Affectivity. Affectivity was measured with a 10-item international Positive and Negative Affect Schedule Short Form (I-PANAS-SF) (Thompson, 2007). The scale consists of five items that measure positive affectivity and five items that measure negative affectivity. Polish translation of items was taken from previous research (Wróbel *et al.*, 2019). Participants were asked to indicate the extent to which they usually feel each emotion on a five-point Likert scale ranging from 1 (very slightly) to 5 (very much).

Social inhibition. A seven-item scale developed by Denollet (2005) was used to measure social inhibition. Items were translated into Polish following the back-translation procedure

(Brislin, 1986). All items were measured by a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Knowledge hiding. Four items from Rhee and Choi (2017) were used to measure knowledge hiding. All items were rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The back-translation procedure (Brislin, 1986) was used to translate items from English into Polish. The scale opened with the following statement: "Knowledge refers to facts, experiences and information. Please think of recent interactions with coworkers who requested knowledge from you and how you responded to them" (adapted from Rhee and Choi, 2017). To measure supervisor knowledge hiding, items for knowledge hiding were modified by changing the referent in three items from "I" to "my supervisor". In this way, the respondents were supposed to assess their supervisor's behavior rather than their own behavior. The fourth item – "I tried to hide innovative solutions and achievement" – was not modified and was not included in the scale for supervisor knowledge hiding because respondents would have had difficulty assessing whether supervisors hid innovative solutions and achievement. The scale opened with the following statement: "For a moment, visualize in your mind your supervisor. How does he/she usually behave upon receiving a request from you for any specific knowledge?" (adapted from Arain et al., 2019).

3.3 Statistical analyses

Partial least squares path modeling (PLS-PM) technique and SmartPLS 3.2.9 software (Ringle et al., 2015) was used to evaluate relationships between variables in this study. PLS-PM has been successfully applied in previous empirical research on relationships between personality traits and counterproductive knowledge behavior (Serenko and Choo, 2020). The use of PLS included the assessment of the measurement and structural model. All constructs in this study were reflective.

4. Results

4.1 The measurement model

The measurement model was assessed using reliability and validity tests. Reliabilities of the individual items was assessed based on outer loading value. Three items – DDF2, PA5, and SI2 (see Appendix) – with outer loading below 0.55 were deleted from the model, which contributes to an increase in average variance extracted (AVE). The further tests were conducted without the three deleted items. The loadings of five items were between 0.648 and 0.683, which is slightly below the recommended threshold of 0.7 (Hair et al., 2019). However, they were retained in the model to maintain the content validity of the scale, which is an acceptable approach (Serenko and Choo, 2020). Internal consistency reliability was measured using Cronbach's alpha (α) and composite reliability (CR). Values of these two measures were above the recommended threshold of 0.7 (see Appendix). The AVE was calculated to assess the convergent validity. AVE values were between 0.574 and 0.796, which meant they exceeded the minimum acceptable value of 0.5 (Hair et al., 2019). Cross-loading of indicator, Fornell-Larcker criterion and the Heterotrait-monotrait (HTMT) ratio of correlation were used to evaluate the discriminant validity. Cross-loading analysis revealed that all indicators were loaded higher on their assigned construct than on other constructs. Moreover, the square root of the AVE for each construct was greater than the correlation values (Table 1), which fulfilled the Fornell–Larcker criterion. Finally, the HTMT values were below the cut-off value of 0.90 (Henseler et al., 2015) (Table 1). In summary, the above results indicated good reliability and validity of the measurement tool.

Table 1 Descriptive statistics, construct correlations and results for discriminant validity

Variables	Mean	SD	DIF	DDF	NA	PA	SI	SKH	KH
DIF	2.62	0.94	*0.758*	0.869	0.623	0.193	0.424	0.370	0.428
DDF	2.77	0.90	0.704**	*0.766*	0.574	0.187	0.594	0.294	0.377
NA	2.72	0.76	0.530**	0.469	*0.764*	0.233	0.520	0.282	0.238
PA	3.50	0.67	−0.183**	−0.160**	−0.114*	*0.771*	0.355	0.051	0.100
SI	2.82	0.93	0.386**	0.511**	0.464**	−0.296	*0.800*	0.200	0.274
SKH	2.56	1.12	0.324**	0.235**	0.240**	−0.008	0.187**	*0.892*	0.613
KH	2.27	1.00	0.381**	0.299**	0.207**	−0.096	0.257**	0.532**	*0.853*

Notes: *$p < 0.01$; **$p < 0.001$; The italic diagonal elements represent the square root of AVE; Values below the diagonal are the construct correlations; Values above the diagonal are the HTMT values; SD – Standard deviation; Scales: DIF – Difficulty Identifying Feeling; DDF – Difficulty Describing Feeling; NA – Negative Affectivity; PA – Positive Affectivity; SKH – Supervisor Knowledge Hiding; KH – Knowledge Hiding

4.2 The structural model

Assessing the structural model, the variance inflation factor (VIF), the coefficient of determination (R^2), the redundancy measure Q^2 and the statistical significance of the path coefficients were considered. The VIF values for all the latent variables were below 3, which means that collinearity was not an issue in this study. The adjusted R^2 values were 0.323 for social inhibition and 0.342 for knowledge hiding (Figure 2). This means that the R^2 values were moderate (Sanchez, 2013). The Q^2 values were calculated using the blindfolding procedure and obtained values were larger than zero (for KH was 0.252 and for SI was 0.149). These values depicted the predictive relevance of this PLS model (Hair *et al.*, 2019).

Figure 2 The structural model

Notes: *$p < 0.05$; **$p < 0.01$; ***$p <0.001$; bootstrapping with 10,000 re-sampling
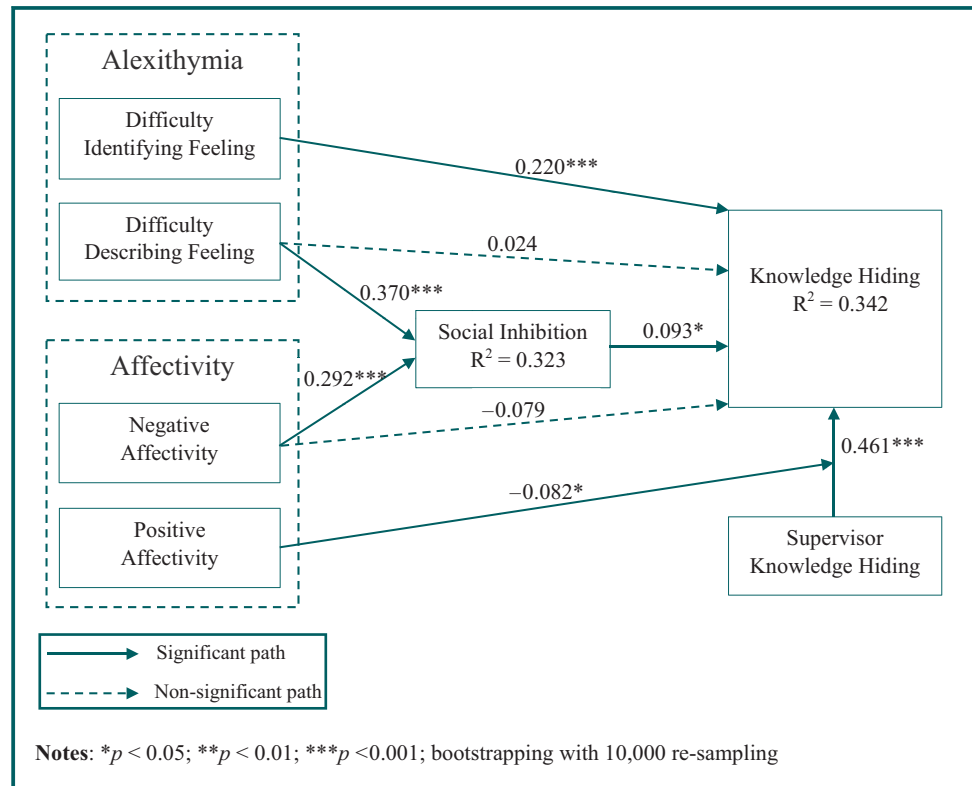
Moreover, the following general model fit indices were calculated: SRMR = 0.078 (acceptable if <0.1) (Schermelleh-Engel *et al.*, 2003), d_ULS = 3.412, d_G = 0.742, chi-square = 21993.186, NFI = 0.779 and RMS theta = 0.124.

Bootstrapping with 10,000 re-sampling was used to test the statistical significance of the structural relationships. Table 2 shows *t*-statistics, *p*-values and bias corrected confidence intervals. As expected, there is a significant and positive relation between DIF and KH (β = 0.220, *t* = 4.171, $p < 0.05$), supporting *H1*. SI was positively and significantly influenced by DDF (β = 0.370, *t* = 7.751, $p < 0.05$) and NA (β = 0.292, *t* = 6.467, $p < 0.05$), supporting *H2* and *H3*. Next, it was found that KH was also positively and significantly influenced by both SI (β = 0.112, *t* = 2.239, $p < 0.05$) and SKH (β = 0.461, *t* = 11.918, $p < 0.05$), supporting *H4* and *H5*, respectively. In the case of *H6*, the results were not unequivocal. Based on the *p*-value, the results revealed that PA moderated the relationships between SKH and KH (β = −0.082, *t* = 2.080, $p < 0.05$). The results revealed that, at higher PA, SKH was found to have weaker impact on KH. These results suggest support for *H6*. However, the bootstrap confidence interval for the moderating effect was [−0.147; 0.006], and hence contained a zero. Therefore, based on the confidence interval, which is a more conservative approach than an approach based on *p*-value, *H6* was not supported.

Additionally, it was investigated whether DDF and NA had direct and indirect effect on KH. Both of those constructs did not have direct effects on KH, but indirect effects, via social inhibition, were significant (Table 3). The indirect effect of DDF on KH (β = 0.041, *t* = 2.348, $p < 0.05$) was stronger than the indirect effect of NA on KH (β = 0.033, *t* = 2.127, $p < 0.05$).

Table 2 Structural model results						
Hypothesis	*Suggested effect*	*Path coefficient*	*t-value*	*p-value*	*95% BCa CI*	*Support*
H1. Difficulty Identifying Feeling → Knowledge Hiding	+	0.220	4.171	0.000	[0.114; 0.320] Sig.	Yes
H2. Difficulty Describing Feeling → Social Inhibition	+	0.370	7.751	0.000	[0.271; 0.458] Sig.	Yes
H3. Negative Affectivity → Social Inhibition	+	0.292	6.467	0.000	[0.203; 0.380] Sig.	Yes
H4. Social Inhibition → Knowledge Hiding	+	0.112	2.239	0.017	[0.024; 0.208] Sig.	Yes
H5. Supervisor Knowledge Hiding → Knowledge Hiding	+	0.461	11.918	0.000	[0.382; 0.534] Sig.	Yes
H6. Supervisor Knowledge Hiding*Positive Affectivity → Knowledge Hiding	−	−0.082	2.080	0.038	[−0.147; 0.006] Nsig.	Yes

Notes: BCa CI = bias corrected confidence interval; Sig. = a significant direct effect at 0.05; Nsig. = a non-significant direct effect at 0.05; Bootstrapping based on n = 10,000 subsamples

Table 3 Bootstrap test of direct, indirect and total effects						
Path	*Direct effect*	*95% BCa CI*	*Indirect effect*	*95% BCa CI*	*Total effect*	*95% BCa CI*
Difficulty Describing Feeling → Social Inhibition → Knowledge Hiding	0.024	[−0.077;0.131] Nsig.	0.041	[0.010;0.080] Sig.	0.066	[−0.031;0.167] Nsig.
Negative Affectivity → Social Inhibition → Knowledge Hiding	−0.079	[−0.174;0.010] Nsig.	0.033	[0.007;0.069] Sig.	−0.047	[−0.136;0.040] Nsig.

Notes: BCa CI = bias corrected confidence interval; Sig. = a significant direct effect at 0.05

5. Discussion and implications

5.1 Discussion

This study examined how personality traits affected knowledge hiding. It showed that difficulty identifying feelings and social inhibition are positively related to knowledge hiding (*H1* and *H4*). These findings are consistent with previous studies, which suggested that a deficit in identifying own emotional states decreases empathy (Moriguchi *et al.*, 2007) and altruism in social decisions (FeldmanHall *et al.*, 2013). Other studies have revealed that socially inhibited individuals avoid socializing, are shy and are reluctant to conduct conversations (Aboutorab and Raziyeh, 2012; Duijndam *et al.*, 2021), which may strengthen knowledge hiding behavior. The behavior of alexithymics and social inhibited individuals might be explained by COR. As argued in Section 2.2, because of strong sense of psychological and social resources deficiencies, they might choose to protect their knowledge resources rather than risk investing in new resources.

This study confirmed that other dimension of alexithymia, difficulty describing feeling, has a significant impact on social inhibition (*H2*). Hence, the inability to describe and interpret one's own emotions may contribute to social misunderstandings and disappointments, disrupting social relationships and increasing the tendency to avoid relationships with other people. This finding is in line with empirical research conducted by Scheerer *et al.* (2021), who found that alexithymia is negatively related with social competence, including verbal conversation skills. Furthermore, this study argued that high-NA individuals, because of their generally bad mood and negative attitude towards others, have a tendency to avoid social interactions. The results of this study supported this prediction (*H3*). These results are consistent with previous suggestions that high-NA individuals perceive other people as more hostile and threatening (Thoresen *et al.*, 2003), perceive tasks more negatively and demonstrate a greater frequency of withdrawal behaviors at work (Necowitz and Roznowski, 1994). However, contrary to previous studies (Ma and Zhang, 2021; Peng *et al.*, 2020), the present indicated that negative affectivity is not directly related to knowledge hiding, but indirectly, via social inhibition.

The study also revealed that supervisor knowledge hiding is positively related to subordinate's knowledge hiding from co-workers (*H5*). This result can be seen as empirical evidence supporting a theory of behavioral contagion and the suggestions presented in previous studies. For example, Offergelt *et al.* (2019) found that if a leader sends direct or indirect signals that knowledge hiding is acceptable, employees are more likely to engage in knowledge hiding. Moreover, the present study shows that positive affectivity can moderate the relationship between supervisor knowledge hiding and subordinate's knowledge hiding from co-workers (*H6*). Hence, positive affectivity can be a personal resource that helps an employee cope with adverse organizational situations and mitigates his/her retaliatory behavior. This finding is in line with previous studies, which found that positive affectivity moderates the effect of psychological contract breaches (Jahanzeb *et al.*, 2020) and competitive psychological climate (Han *et al.*, 2020) on knowledge hiding.

5.2 Theoretical implications

First, this study contributes to the knowledge management literature by investigating the impact of personality traits on individual knowledge hiding. Previous studies focused on Big Five personality traits or the dark triad in the context of knowledge hiding (Hamza *et al.*, 2021; Pan *et al.*, 2018). This is the first study to show that alexithymia, particularly difficulty identifying feelings, and social inhibition are significant predictors of knowledge hiding (*H1* and *H4*). Moreover, the present study uses COR to explain why alexithymics and social inhibited individuals choose to hide their knowledge. These findings develop our understanding of how personality traits drive counterproductive knowledge behavior.

Understanding why employees hide knowledge is a prerequisite for achieving effective knowledge management in an organization (Pan *et al.*, 2018).

Second, this study contributes to a better understanding of the formation of knowledge hiding in an organization by exploring the role of social inhibition in the relation between negative affectivity and knowledge hiding and between difficulty describing feeling and knowledge hiding. Past research has demonstrated the impact of a negative emotion state on counterproductive work behavior (Yang and Diefendorff, 2009), including employee knowledge hiding behavior (Ma and Zhang, 2021; Peng *et al.*, 2020). The present study extends this by showing that negative affectivity is not directly related to knowledge hiding, but has a strong effect on social inhibition (*H3*), which in turn is related to knowledge hiding (*H4*). Similarly, difficulty describing feeling is significantly related to social inhibition (*H2*), but it is not directly related to knowledge hiding. As a bootstrap test confirmed (Table 3), these indirect effects of negative affectivity and difficulty describing feeling on knowledge hiding are significant. Hence, the present study indicates that employees with Type D personality – that is, a personality characterized by a combination of NA and social inhibition – may have a tendency to hide knowledge. Previous studies have linked the Type D personality to a variety of adverse mental states, including depression and low levels of self-esteem (Denollet, 2005). However, the impact of Type D personality on knowledge hiding has not been studied before.

Third, this study reveals that different dimensions of alexithymia might have a direct or indirect effect on knowledge hiding. In particular, difficulty identifying feeling has a direct effect on knowledge hiding (*H1*), whereas difficulty describing feeling has an indirect effect, via social inhibition. This finding confirms that alexithymia is a multidimensional construct and its dimensions in relation to different employee behaviors should be considered separately. This finding is partly in line with Meganck *et al.*'s (2009) findings that three subscales of alexithymia have different influence on interpersonal style.

Fourth, this study highlights the huge impact of supervisor knowledge hiding on individual knowledge hiding (*H5*). Previous studies have indicated that employees reciprocate knowledge hiding (Serenko and Bontis, 2016) and co-worker knowledge sabotage may be contagious workplace behavior (Serenko and Choo, 2020). However, this study sought to answer the question of whether the fact that the supervisor hides knowledge from his/her subordinate makes the subordinate tend to hide knowledge from his/her co-workers. As discussed in Section 2.10, this relationship might be explained by a conversation of resource theory and a theory of behavioral contagion. Overall, this study suggests that an employee from whom supervisors used to hide knowledge has a tendency to mimic this behavior toward co-workers and protect his/her knowledge resources from co-workers.

Fifth, this study contributes to knowledge management by identifying and examining a moderator in the relationship between supervisor knowledge hiding and individual knowledge hiding. It turned out that positive affectivity might be a weak moderator of this relationship (*H6*). Positive affectivity may serve as a buffer that mitigates the reaction to unpleasant experiences, including supervisor knowledge hiding.

5.3 Managerial implications

First, it is important for managers to be aware that certain personality traits, including alexithymia, social inhibition and negative affectivity, may predispose employees to hide knowledge. Hence, managers who want to reduce knowledge hiding should pay special attention to the personal characteristics of job applicants and not hire individuals with those undesirable traits. Instruments and scales to measure alexithymia, social inhibition and negative affectivity (such as TAS-20) may be used at the recruitment stage to select appropriate candidates. Because a job applicant may disguise his/her true personality, it is also worth getting to know the opinion of previous employers and co-workers about the

personality of the job applicant. Moreover, an employer can use a trial period of employment to observe the employee in terms of his or her employee's personality traits.

Second, to reduce knowledge hiding, it may be also beneficial for an organization to identify those hired employees who have high levels of alexithymia, social inhibition and negative affectivity. For those employees, managers can offer special trainings to overcome their psychological and social deficiencies, including rebuilding self-confidence, coping with negative emotions and developing social skills. However, these trainings might only be partially effective, as alexithymia, social inhibition and negative affectivity are perceived as rather stable personal traits. Another solution is to allocate those employees to positions that are more appropriate for their personality traits.

Third, managers should realize that supervisor knowledge hiding leads to subordinate knowledge hiding. Being frequent witnesses of knowledge hiding by superiors, subordinates may have a false belief that such behavior is accepted in the organization and, consequently, they may imitate it. Therefore, managers should clearly define what behaviors are desired and rewarded in the organization and take steps to modify the behavior of supervisors who hide knowledge. Organizations can use employee surveys in which subordinates assess their supervisors in terms of hiding knowledge. For supervisors who would be identified as hiding knowledge, appropriate training sessions on knowledge sharing and workplace relations could be offered.

5.4 Limitations and future research

This study has certain limitations that can be overcome in future research. First, some limitations arise from the way the data were collected. The study used a paid online panel, which may have an impact on representativeness and quality responses. The online nature of data collection limits participation to those who have access to the Internet. Furthermore, panelists may have filled out the survey too quickly, dishonestly and without due attention, as they were more interested in receiving points and then prizes than in providing high-quality responses. To increase the quality of data in future studies, some "check-items" can be included in the survey (Achnak and Vantilborgh, 2021). Additionally, the study used self-reported measures to evaluate personality traits. This approach has been commonly used in previous research on alexithymia, social inhibition and negative affectivity (Denollet, 2005; Mattila *et al.*, 2007). However, respondents might underrate the intensity of these traits in themselves, realizing that these traits are not socially desirable. In future research, managers and co-workers could also assess the personal traits of an employee.

Second, the perception of alexithymia as a three-dimensional construct is a popular view in the literature (Bagby *et al.*, 1994). The present study only investigated two of three dimensions of alexithymia – difficulty identifying feelings (DIF) and difficulty describing feelings (DDF) – because, as the literature review indicated, these two dimensions were expected to have significant relations with knowledge hiding. However, future research may find a theoretical framework and empirical evidence for the relationship between the third dimensions of alexithymia, that is, externally orientated thinking style, and knowledge hiding.

Third, this study used a short, four-item scale for knowledge hiding, proposed by Rhee and Choi (2017). However, in empirical studies on hiding knowledge, many researchers use the 12-item scale developed by Connelly *et al.* (2012), which measures three dimensions of knowledge hiding, including evasive hiding, playing dumb and rationalized hiding. Thus, future studies can investigate the separate effects of alexithymia, social inhibition and negative affectivity on these three different dimensions of knowledge hiding.

Fourth, this study suggests that employees' positive affectivity moderates the relationship between supervisor knowledge hiding and individual knowledge hiding. However, this moderating effect is weak, so it needs to be confirmed in future studies. Future studies may also examine the moderating effect of other positive personality traits and attitudes that can

weaken the effect of supervisor knowledge hiding on individual knowledge hiding, including emotional resilience, self-confidence and proactive personality.

Finally, this study has not taken into account organizational conditions that may affect the relationship between the employee's personality and hiding knowledge. These conditions can activate or deactivate workers' behaviors that are a manifestation of their personality traits, which is in line with the trait activation theory (Tett and Burnett, 2003). Therefore, the inclusion of organizational factors as moderators in the research model, such as organizational culture, would be a valuable extension of this study.

6. Conclusion

This study extends previous research on relationships between personality traits and counterproductive knowledge behavior. Based on conservation of resources theory, a model of relationships between alexithymia, social inhibition, affectivity and knowledge hiding was developed and tested empirically. From the theoretical perspective, this study investigates previously unexplored relationships and enables a better understanding of the impact of adverse employees' personality traits and supervisor attitude on employees' knowledge hiding. From the managerial perspective, it provides suggestions how to reduce knowledge hiding behaviors. The results of this study are expected to trigger further research on relationships between alexithymia, social inhibition, affectivity and different knowledge behaviors.

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Appendix. Items

Alexithymia (Bagby et al., 1994)

1. Difficulty Identifying Feelings (α = 0.875, CR = 0.903, AVE = 0.574)

    - DIF1. I am often confused about what emotion I am feeling.
    - DIF2. I have physical sensations that even doctors don't understand.
    - DIF3. When I am upset, I don't know if I am sad, frightened, or angry.
    - DIF4. I am often puzzled by sensations in my body.
    - DIF5. I have feelings that I can't quite identify.
    - DIF6. I don't know what's going on inside me.
    - DIF7. I often don't know why I am angry.

2. *Difficulty* Describing *Feelings* (α = 0.764, CR = 0.849, AVE = 0.586)

    - DDF1. It is difficult for me to find the right words for my feelings.
    - DDF2. I am able to describe my feelings easily. (R)*
    - DDF3. I find it hard to describe how I feel about people.
    - DDF4. People tell me to describe my feelings more.
    - DDF5. It is difficult for me to reveal my innermost feelings, even to close friends.

Affectivity (Thompson, 2007)

To what extent do you usually feel the following emotions:

1. *Negative Affectivity* (α = 0.821, CR = 0.874, AVE = 0.583)

    - NA1. afraid
    - NA2. ashamed
    - NA3. hostile
    - NA4. nervous
    - NA5. upset

2. *Positive* affectivity (α = 0.786, CR = 0.854, AVE = 0.595)

    - PA1. active
    - PA2. alert
    - PA3. attentive
    - PA4. determined
    - PA5. inspired*

3. Social Inhibition (Denollet, 2005) (α = 0.887, CR = 0.914, AVE = 0.640)

    - SI1. I make contact easily when I meet people. (R)
    - SI2. I often talk to strangers. (R)*
    - SI3. I often feel inhibited in social interactions.
    - SI4. I find it hard to start a conversation.
    - SI5. I am a closed kind of person.
    - SI6. I would rather keep other people at a distance.
    - SI7. When socializing, I don't find the right things to talk about.

4. Knowledge hiding (Rhee and Choi, 2017) (α = 0.869, CR = 0.921, AVE = 0.796)

- ■ KH1. I agreed to help him/her but never really intended to.
- ■ KH2. I pretended that I did not know the information.
- ■ KH3. I said that I did not know even though I did.
- ■ KH4. I tried to hide innovative solutions and achievement.

5. Supervisor knowledge hiding (adapted from Rhee and Choi, 2017) (α = 0.871, CR = 0.913, AVE = 0.727)

- ■ SKH1. My supervisor agrees to help him/her but never really intends to.
- ■ SKH2. My supervisor pretends that he/she does not know the information.
- ■ SKH3. He/she says that he/she does not know even though he/she does.

Note: R – reverse coded; * – an item removed after scale validation.

Corresponding author

Roman Kmieciak can be contacted at: roman.kmieciak@polsl.pl