NORWEGIAN
BUSINESS SCHOOL

Tell Me If You Can: Time Pressure, Prosocial Motivation, Perspective Taking, and Knowledge Hiding

Structured Abstract

Purpose – The belief that knowledge actually expands when it is shared has been deeply rooted in the mainstream knowledge management literature. Although many organizations and managers expect employees to share their knowledge with their colleagues, this does not always occur. We use conservation of resources theory to explain why employees who experience greater time pressure are more likely to engage in knowledge hiding, and we further consider how this behavior may be moderated by these employees' prosocial motivation and perspective taking.

Design/methodology/approach – The paper is using quantitative multi-study research design as a combination of two-wave field study among 313 employees at an insurance company and a lab experimental study.

Findings – In the field study (study 1) we find that perceived time pressure is positively related to knowledge hiding. Furthermore, this relationship is moderated by prosocial motivation: employees who perceive greater time pressure hide knowledge only when they are low in prosocial motivation. An experiment (Study 2) replicates these findings, and further finds that perspective taking mediates the moderating effect of prosocial motivation on the relationship between time pressure and knowledge hiding.

Research limitations/implications – Despite its many contributions, the present research is also not without limitations. Study 1 was a cross-lagged sectional field study with self-reported data (although the two-wave design does help alleviate common-method-bias concerns). Causality concerns were further alleviated by using additional experimental study.

Practical implications – The paper highlights on of important reasons why people hide knowledge at work (due to experienced time pressure) as well as identifies two interlinked potential remedies (prosocial motivation and perspective taking) to reduce knowledge hiding.

Originality/value –This paper contributes to expanding nomological network of knowledge hiding construct by extending the set of known antecedents and contingencies.

Keywords: knowledge hiding; perceived time pressure; prosocial motivation; perspective taking.

INTRODUCTION

"Knowledge is the only resource that increases with use." (Probst, et al., 2002)

The belief that knowledge actually expands when it is shared has been deeply rooted in the mainstream knowledge management literature. Unfortunately, not all employees will behave accordingly and might perceive knowledge as a limited resource that needs to be hidden. In fact, some employees intentionally hide knowledge from their peers. Knowledge hiding, formally defined as an intentional attempt to conceal or to withhold knowledge that others have requested (Connelly, Zweig, Webster, & Trougakos, 2012), has important consequences for organizations. Previous research suggests that knowledge hiding positively correlates with interpersonal distrust (Connelly et al., 2012), harms interpersonal relationships (Connelly & Zweig, 2015), and diminishes creativity (Černe, Nerstad, Dysvik, & Škerlavaj, 2014). Knowledge hiding is particularly damaging to organizations because the distrust among employees that it creates leads to a negative spiral of retaliation (Černe et al., 2014). Given such detrimental consequences, we need to learn more about why individuals engage in knowledge hiding.

The existing research on knowledge hiding has thus far emphasized the interpersonal factors (i.e., interpersonal distrust) that affect how an individual will respond to another's

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request for knowledge (Černe et al., 2014; Connelly et al., 2012). However, an employee's decision to hide knowledge occurs within a broader context, and is likely to be influenced by situational factors and individual differences (Demirkasimoglu, 2015; Peng, 2013). Prior research on knowledge hiding has examined some situational factors, including knowledge sharing climate as antecedents of knowledge hiding (Connelly et al., 2012; Pan & Zhang, 2014; Peng, 2013). However, a consideration of how situational factors and individual differences combine to affect knowledge hiding provides us with a more complete understanding of why and when this behavior occurs in organizations. This is the focus of our study.

The specific situational factor that we consider is time pressure, defined as either subjectively perceived time pressure or the imposition of a deadline (Kelly & Karau, 1999; Pepinsky, Pepinsky, & Pavlik, 1960). There is evidence that when employees experience time pressure, they prioritize their own activities and focus less on the needs of others (Ellis, 2006). While knowledge might be increasing with use (Probst, Raub, & Romhardt, 2002), time most certainly does not. This suggests that time pressure has significant effects on interpersonal relationships and behaviors, including knowledge hiding. In order to understand how time pressure may affect employees' knowledge hiding, and what organizations can do to mitigate these behaviors, we apply conservation of resources theory. This theory proposes that when employees are threatened with the potential loss of a resource, they react to this situation by trying to protect any remaining resources that they have (Byrne et al., 2014; Hobfoll, 1989). According to Hakanen, Bakker and Schaufeli (2006), "job resources refer to those physical, psychological, social, or organizational aspects of the job that may (1) reduce job demands and the associated physiological and psychological costs, (2) are functional in achieving work goals, and (3) stimulate personal growth, learning, and development" (p. 497). Research using conservation of resources theory has considered several different resources (e.g., job control,

Taris, Schreurs, & van Iersel-van Silfhout, 2001; supervisor support, Leiter & Maslach, 1988). We build on this research by conceptualizing time as a resource. We examine how employees might act to protect other resources, such as knowledge, when they perceive that their time is threatened.

Furthermore, we explore how relational resources interact with time pressure in predicting knowledge hiding. We focus on two aspects of relational resources: prosocial motivation and perspective taking. In specific, we investigate the potential influence of prosocial motivation on the relationship between time pressure and knowledge hiding through the explanatory mechanism of perspective taking. Prosocial motivation is the desire to extend effort to benefit other people and to protect and promote their well-being (Batson, 1987; Grant, 2007). Perspective taking refers to a cognitive process through which "an observer tries to understand, in a nonjudgmental way, the thoughts, motives, and/or feelings of a target, as well as why they think and/or feel the way they do" (Parker, Atkins, & Axtell, 2008, p. 151). In sum, prosocial motivation is the willingness to contribute to others and perspective taking is the ability to understand how other people think. Prosocial motivation could lead to time allocation favorable to others in spite of increased time pressure. We propose that prosocially motivated employees would be less likely to hide knowledge even when faced with high levels of time pressure. Such employees are concerned with helping others and engage in perspective taking. This enables them to see the world through the eyes of their peers and thereby increases their understanding of the importance of allocating time for both themselves and others. In turn, these combined efforts and insights should reduce knowledge hiding behaviors.

We set out to make two contributions to the field of knowledge hiding research. First, we respond to calls for research on the causes of knowledge hiding behavior in organizational contexts (Connelly et al., 2014; Connelly et al., 2012) because empirical evidence remains

limited despite this being an important theoretical and practical question. Second, by extending previous research on remedies for mitigating the negative outcomes of knowledge hiding (Černe et al., 2014), we introduce the concepts of prosocial motivation (Grant, 2007) and perspective taking as lenses to explain how these factors influence knowledge hiding processes.

Theory and Hypotheses

Knowledge Hiding

Contemporary employees face increased expectations to share their knowledge with their coworkers (Cabrera & Cabrera, 2002; Gagné, 2009; Wang et al., 2014; Caimo & Lomi, 2015), because effective knowledge management presents several benefits to organizations, including higher employee and organizational performance, greater innovation, and less duplication of efforts (e.g., Collins & Smith, 2006; Davenport & Prusak, 1998). Not surprisingly, many firms have invested significantly in systems and practices that are designed to facilitate knowledge transfer among employees (Wang & Noe, 2010). Despite these investments, there is evidence that employees not only disengage from knowledge sharing behavior, but also actively and with intent hide knowledge from their peers (Černe et al., 2014; Connelly & Zweig, 2015; Connelly et al., 2012). Knowledge hiding consists of three possible behaviors: rationalized hiding, where the hider provides an explanation for why the knowledge is not forthcoming; evasive hiding, where the hider stalls or provides less information than what was requested; and playing dumb, where the hider pretends not to have the knowledge (Connelly et al., 2012).

Our research builds on that of three studies in particular, which have examined some antecedents and outcomes of knowledge hiding. Connelly et al. (2012) developed the measure of knowledge hiding based on qualitative interviews and surveys, and then used this measure to show that people hide knowledge because of distrust in the requestor and that knowledge

hiding is also influenced by characteristics of the knowledge (i.e., complexity, task relevance). Building on Connelly et al., Černe et al. (2014) revealed a negative relationship between knowledge hiding and knowledge hiders' creativity. They proposed that when employees hide knowledge, they trigger a reciprocal distrust loop in which coworkers are unwilling to share knowledge with them. In addition, a mastery climate diminished the negative effect of knowledge hiding on individual creativity. Even though hypothesized as potentially elevating the distrust loop, performance climate showed no moderating effect. Finally, Connelly and Zweig (2015) also focus on the consequences of knowledge hiding, using two surveys to suggest that knowledge hiders and requestors may anticipate different reactions to knowledge hiding.

Despite the obvious similarities between knowledge hiding and (a lack of) knowledge sharing, these constructs have been established as separate (Connelly et al. 2012); the fact that someone has *not* shared (e.g., due to inattention or ignorance) does not imply that he or she is necessarily hiding (i.e., an intentional attempt to conceal). In this regard, knowledge hiding and knowledge sharing are analogous to several other pairs of organizational behavior constructs such as organizational citizenship behaviors and counterproductive workplace behaviors (Kelloway, Loughlin, Barling, & Nault, 2002), voice and silence (Van Dyne, Ang, & Botero, 2003), or trust and distrust (Lewicki, McAllister, & Bies, 1998).

It is also important to note that knowledge hiding occurs in response to a specific request from another individual. In this regard, knowledge hiding is particularly distinct from knowledge sharing that occurs on knowledge management systems (KMS) where individuals post information requests to a general audience, or make information available to others (e.g., resources, reference materials, documents) without specific prompting to do so (e.g., Babcock, 2004; Wasko & Faraj, 2000). However, the knowledge requested could be tacit, in that it refers to skills and ideas that are not easily codified (Polyani, 1958), or it could be

explicit, in that it has been codified and can be explained clearly (Nonaka & Takeuchi, 1995; von Krogh, Ichijo, & Nonaka, 2001; von Krogh, Nonaka, & Aben, 2001). An important underlying assumption though is that employees when hiding knowledge do see knowledge as a limited resources that could be lost when used.

Time Pressure as a Predictor of Knowledge Hiding

The concept of time has already in the 1980s been introduced as a major topic for organizational and management research (Bluedorn & Denhardt, 1988) in terms of different times and temporalities related to individual differences, decision-making, motivation, and group behavior. Time is an important resource in organizations: employees and managers have long complained about having insufficient time to complete required tasks (Goode, 1960), and advice abounds on how to use time-saving devices and processes to boost productivity and performance. Perceived time pressure has been linked to several detrimental outcomes, including increased job strain (e.g., Sonnentag & Bayer, 2005; Sprigg & Jackson, 2006), decreased decision quality (e.g., Ahituv, Igbaria, & Sella, 1998; Betsch, Haberstroh, Molter, & Glöckner, 2004), and decreased employee performance (e.g., Baer & Oldham, 2006). There is also an indication that employees under time pressure are less likely to share knowledge (Connelly, Ford, Turel, Gallupe, & Zweig, 2014).

Time – ongoing sequence of events taking place, and timing – the regulation of occurrence, pace, or coordination to achieve a desired effect, are essential components in creating a supportive environment for knowledge exchange (Wang, Peck, & Chern, 2010). The temporal dimension of when an activity is conducted, and how much time individuals have to carry it out, influences how likely it is for them to share information, and provides them with more opportunity to look for information. Many employees experience time pressure at work (Twenge, Campbell, Hoffman, & Lance, 2012; Baer & Oldham, 2006), which is defined as"either subjectively perceived time pressure or the imposition of a

deadline" (Amabile et al., 2002). Time pressure has been shown to be an important predictor

of several individual-level outcomes in organizations, such as proactivity (Fritz & Sonnentag,

2007), creativity (Amabile, et al., 2002; Baer & Oldham, 2006), and work stress (Ganster &

Rosen, 2013).

In the long-term, withstanding from hiding knowledge should have beneficial

consequences, such as time savings for coworkers, improved processes, and more efficient

practices. In the short-term, however, it presents yet another demand on individuals' time. We

therefore investigate whether time pressure is partly responsible for employee knowledge-

hiding behaviors. According to conservation of resources theory, people actively seek to

create and maintain resources, and may use one resource to replace others when resources are

lost (Byrne et al., 2014; Hobfoll, 1989). It is much more difficult for an individual to regain

resources once they are depleted, but those with many resources are able to gain new ones

more easily (Hobfoll, 2002).

Time is one important resource for employees, but knowledge is another. Indeed,

knowledge has been described as "a critical organizational resource that provides a

sustainable competitive advantage" (Wang & Noe, 2010, p. 115). As time pressure increases,

we therefore expect that employees will try to reduce the loss of other resources, such as

knowledge, by engaging in knowledge hiding. Applying this theory, we expect that

individuals perceiving high levels of time pressure will focus more exclusively on their own

tasks. They would therefore allocate fewer cognitive resources to considering the merits of a

colleague's request for assistance. In other words, individuals faced with requests for

knowledge would be more inclined to prioritize their own tasks and be less concerned with

those of their peers. Even if the request is meritorious and even if it would benefit the

organization and the employee to comply with it long-term, these advantages would not

receive due consideration and the time-pressured employee would hide knowledge. We hypothesize:

Hypothesis 1: Time pressure is positively related to knowledge hiding.

The Moderating Role of Prosocial Motivation

Not all employees will react identically to high levels of perceived time pressure. An important explanation for this could be attributed to their existing levels of prosocial motivation. Prosocial role requirements more and more commonly become a part of employees' role expectations (Dierdorff et al., 2012). More specifically, it has been related both to psychological traits of agreeableness, empathy, helpfulness, concern for others as well as the states of the desire to expand effort to benefit other people (Batson, 1987) and protect and promote the well-being of others prompted by contact with others who need help (Grant, 2007). These include both external as well as internal beneficiaries to helping behaviors at work. Employees with high levels of prosocial motivation will (also) prioritize others' interests, because their desire to have a positive impact on others affects their behavior (Batson, 1987; Grant, 2007). Prosocial motivation could therefore lead to time allocation favorable to others (De Dreu & Nauta, 2009) and effectiveness (Hu & Liden, 2015) favorable to the organization in spite of higher levels of perceived time pressure.

Prosocial motivation is a topic with particular relevance in work situations where there are apparent interdependencies of people and tasks. Employees with higher levels of prosocial motivation may prioritize coworkers' needs (Grant, 2007), and be more inclined to respond favorably to requests for assistance. Previous research has shown that prosocial motivation is related to at least three categories of outcomes: organizational citizenship and prosocial behaviors, proactive behaviors, as well as other relevant employee outcomes (e.g. performance). In terms of organizational citizenship and prosocial behaviors, empirical studies have shown that prosocial motivation correlates with help-giving (Rioux & Penner,

2001) and help-seeking behaviors, experienced meaningfulness of work, resource and

information sharing (Utz, Muscanell, & Göritz, 2014), and voice behaviors (Grant & Mayer,

2009). Proactive behaviors associated with prosocial motivation include creativity (Grant &

Berry, 2011), taking charge (Grant, Parker, & Collins, 2009) and initiative (De Dreu & Nauta,

2009), and work engagement (Freeney & Fellenz, 2013). Other significant outcomes related

to prosocial motivation known from the literature so far are improved in-role performance and

productivity (Grant & Sumanth, 2009), higher persistence (Grant et al., 2007), and accepting

negative feedback (Korsgaard, Meglino, & Lester, 1997).

In keeping with conservation of resources theory (Hobfoll, 1989), positive reciprocal

relationships with colleagues may be viewed as a resource. Relational resources are widely

examined in sociology literature (Benjamin & Sullivan, 1999), as well as in the strategic and

social capital fields of business research (cf. Srivastava & Gnyawali, 2011; Story, Hart, &

O'Malley, 2009). These studies base their logic on the value of relationships and utility of the

underlying psychological, relational, or practical means that stem from such relationships.

Specifically, high quality relationships with coworkers may enable employees to cope with

increased work demands and other work stressors (Dutton, 2003). However, not all employees

will recognize the value of social relationships at work: we expect that prosocially motivated

employees, i.e. 'givers' (Grant, 2013), will be more likely to view collegial relationships with

coworkers as a resource and worth maintaining by spending time with their colleagues and

providing them with knowledge when it is requested. Employees who are less prosocially

motivated will be less likely to view coworkers as a resource, and will focus on conserving

their other resources, such as their knowledge, by hiding it when they feel time pressure.

We therefore expect that employees with higher levels of prosocial motivation will

refrain from knowledge hiding even when they perceive high levels of time pressure, because

they are trying to maintain relationships with coworkers, and because engaging in knowledge

hiding could harm these relationships (Connelly & Zweig, 2015). Likewise, individuals with lower levels of prosocial motivation should be more inclined to respond to higher levels of perceived time pressure by focusing on their own tasks, even at the expense of building and maintaining relationships with coworkers. These employees would consequently be even more likely to hide their knowledge from their coworkers. We propose:

Hypothesis 2: Prosocial motivation will moderate the positive relationship between time pressure and knowledge hiding. When individuals have high levels of prosocial motivation, the relationship between time pressure and knowledge hiding is less strong. When individuals have low levels of prosocial motivation, the relationship between time pressure and knowledge hiding is stronger.

Perspective Taking as an Explanatory Mechanism

As explained above, employees' perceptions of time pressure and their consequent reactions should vary. Although conservation of resources theory suggests that employees will act to maintain their existing resources (e.g., knowledge) when some of their resources (e.g. time) are threatened, some employees may be especially attuned to the needs of their coworkers, and therefore behave differently. These prosocially-motivated employees may also be more likely to engage in a cognitive process of perspective taking, in which individuals adopt others' viewpoints in an effort to understand their preferences, values, and needs (Parker & Axtell, 2001). Although employees can vary in their dispositional tendencies to take the perspectives of others, research has shown that efforts to take the perspectives of others in specific situations and contexts vary as a function of employees' motivations (e.g., Batson, Early, & Salvarani, 1997; De Dreu, Weingart, & Kwon, 2000; Galinsky, Magee, Inesi, & Gruenfeld, 2006). De Dreu (2006) proposed that prosocial motivation leads employees to "consider information from multiple perspectives to a greater extent… [and] stimulates the processing of social information— information from and about relevant others" (p. 1248).

Accordingly, a more fine-grained explanation of why prosocial motivation moderates the influence of perceived time pressure on knowledge hiding is that prosocial motivation leads to increased perspective taking. Next, increased insight on the other party's perspective leads to less hiding even when perceived time pressure is high, based on the increased awareness of the importance of not hiding for the beneficiary (i.e. colleague or colleagues). In support of this and based on motivated information processing theory (De Dreu, 2006), Grant and Berry (2011) have shown that prosocial motivation encourages employees to engage in perspective taking. Expecting to replicate this finding, we hypothesize:

Hypothesis 3a: Prosocial motivation predicts higher levels of perspective taking.

Perspective taking tends to foster cooperative behavior because it encourages integration of the various viewpoints of others (Hoever, van Knippenberg, van Ginkel, & Barkema, 2012). This integration of purpose can also improve negotiation outcomes (Galinsky, Maddux, Gilin, & White, 2008; Neale & Bazerman, 1983), reduce conflict between dissimilar team members (Williams, Parker, & Turner, 2007) and improve the creative outcomes of diverse teams (Hoever et al., 2012).

Galinsky et al. (2008) highlighted the importance of perspective taking for negotiation outcomes as well as its differential effect vis-à-vis empathy. Perspective taking (Galinsky et al., 2008; Hoever et al., 2012) is seen as key to connect, read feedback from immediate others and perform well (e.g. in terms of social processes such as creativity or negotiations). Grant (2008) demonstrated that exposure to the primary beneficiary of the work of call center operators and the psychological mechanism of perspective taking stimulate individual creativity, effort, and performance. Hoever et al. (2012) conducted a series of experiments to show that diversity breeds team creativity only when supported by perspective taking. In the high-quality connections literature (Dutton, 2003; Dutton & Heaphy, 2003; Stephens, Heaphy, & Dutton, 2012), the micro-dynamics of seeing others, listening to others and being

genuine in relation to others all presupposes an ability to understand the effect that one's actions have on others.

Employees who engage in perspective taking have a broader scope of what they consider important for the total organization, so they are more likely to prioritize coworkers' needs. Instead of simply focusing on completing their own tasks, these workers consider the impact of their actions on others. They are still prioritizing their attention to where it is perceived to be needed most, but the scope of what they consider to be relevant includes the needs of coworkers. These employees should therefore avoid hiding knowledge from colleagues, even when under time pressure. Therefore, we suggest:

Hypothesis 3b: Perspective taking weakens the association between time pressure and knowledge hiding.

Perspective taking and prosocial motivation are inextricably linked. In fact, there is evidence that prosocial motivation encourages individuals to consider the perspectives of others who they come into contact with, including coworkers, supervisors, suppliers, and customers (e.g., Axtell, Parker, Holman, & Totterdell, 2007; De Dreu et al., 2000; Grant & Berry, 2011; Parker & Axtell, 2001). Because prosocially motivated employees are interested in others' preferences (Meglino & Korsgaard, 2004), they ask questions and listen carefully to discover what others value. This close observation provides them with information on how to provide help effectively (De Dreu et al., 2000). Thus, we predict that prosocially motivated employees will be more likely to take others' perspectives into account, and that perspective taking explains why prosocial motivation moderates the relationship between perceived time pressure and knowledge hiding. We therefore make the following hypothesis, which is a case of mediated moderation (Edwards & Lambert, 2007) constituent of hypotheses 3a and 3b:

Hypothesis 3c: Perspective taking mediates the moderating effect of prosocial motivation on the association between time pressure and knowledge hiding.

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The theoretical model is presented in Figure 1. In field Study 1, we test the direct relationship between time pressure and knowledge hiding (Hypothesis 1), and the moderating role of prosocial motivation (Hypothesis 2). Experimental Study 2 helps to establish causal claims (Hypothesis 1) and tests a full mediated-moderation model whereby perspective taking mediates the moderating role of prosocial motivation in the relationship between time pressure and knowledge hiding (Hypotheses 2-3c).

Study 1: Methods

Sample

We collected data from a European insurance company. The potential participants (2,405) held a wide variety of jobs, including knowledge-intensive jobs, clerical jobs, and sales. Data were collected in two waves, three weeks apart. The items used in our study were part of a large-scale questionnaire so it is unlikely that respondents were able to guess the purpose of the study, thus reducing the influence of biases on our results (Podsakoff, MacKenzie, & Podsakoff, 2012). A total of 550 participants responded to the survey and there were 285 complete responses in both waves accounting for a response rate of 12%. About 53% of the participants were female and about 25% were between the age of 35 and 44 (M = 42.13, SD = 9.19). A total of 36% of respondents reported under seven years of work experience (M = 9.49, SD = 8.47) and 54% reported under three years of working with their current supervisor (dyad tenure; M = 4.55, SD = 4.38).

Measures

Unless otherwise noted, seven-point Likert-type scales ranging from 1 ("strongly disagree") to 7 ("strongly agree") were used in this study. We measured time pressure with five items from Putrevu and Ratchford (1997). We modified the items slightly to match the work context. Specifically, we added "when working" to the five items. Sample items include:

"when working … I do not have enough time to complete what I should do; I often feel in a hurry." The internal consistency was acceptable ($\alpha = .87$).

We measured prosocial motivation with a 5-item scale developed by Grant and Sumanth (2009). Sample items include "I get energized by working on tasks that have the potential to benefit others." The internal consistency was acceptable ($\alpha = .92$).

Knowledge hiding was assessed with a 12-item scale developed by Connelly et al. (2012). The scale opens with the following statement: "In a specific episode in which a particular coworker requested knowledge from you and you declined." It includes items such as "I pretended I did not know what s/he was talking about." The internal consistency was acceptable ($\alpha = .93$). As with past research on knowledge hiding (i.e., Černe et al., 2014; Connelly & Zweig, 2015; Connelly et al., 2012) we used a self-report measure. Because deception may be involved, it is important to measure knowledge hiding from the perspective of the hider. Note that we did not define knowledge for the participants; they were free to interpret "knowledge" in the context of their job duties and environment.

In order to account for the possible influence of demographic variables on knowledge hiding, we controlled for age, gender, education, and work experience. Work experience was also a useful control variable because employees who have been performing a particular task for a longer period of time may perceive it as less demanding (Amabile, 1988). We also controlled for dyad tenure because the length of this relationship can affect perceptions regarding its usefulness as a resource (Fagenson-Eland, Marks, & Amendola, 1997).

Study 1: Results

Table 1 provides the descriptive statistics for all variables analyzed in Study 1. We first observed the factor structure of the focal variables. The expected three-factor solution (time pressure, prosocial motivation, knowledge hiding) displayed good fit with the data (Chi-square

[184] = 365.54, CFI = .96, RMSEA = .057)[1]. The factor loadings ranged from .58 to .83 for time pressure items, .71 to .90 for prosocial motivation items, and .46 to .87 for knowledge hiding items.

We used hierarchical regression analysis to test the relationship between perceived time pressure and knowledge hiding, as well as the moderating effect of prosocial motivation in this relationship. We present these results in Table 2. In the first step (Model 1), we entered the control variables. In Step 2 (Model 2), time pressure was entered and was found to be positively related to knowledge hiding (β = .12, $p < .01$), supporting Hypothesis 1.

Insert Table 1 about here

The results in Model 3 suggest that prosocial motivation does not moderate the relationship between time pressure and knowledge hiding (interaction term time pressure x prosocial motivation = -.09, $p = .09$). Hypothesis 2 is not supported, but because the p value is approaching significance, we portray this interaction in Figure 2.

Insert Table 2 and Figure 2 here

Study 1: Discussion

Perceived time pressure is associated with higher levels of knowledge hiding behaviors. However, Study 1 suffers from some limitations. First, although the data were collected in two waves, they were not longitudinal, making it difficult to infer causality. Second, due to the time-lagged cross-sectional nature of the data, mediated moderation of prosocial motivation through perspective taking could not be tested. Therefore, we conducted an

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[1] The within-construct residuals were allowed to correlate.

additional study in order to replicate our first study and to examine the possible mediating role of perspective taking as per Hypothesis 3.

Study 2: Methods

Sample, Design, and Procedures

We conducted an experiment with 60 second-year undergraduates (plus 60 more as confederates) at a Slovenian university. The age of the participants ranged from 19 to 26 years, and the mean age was 21years (SD = 1.74). Approximately 53% were female, and 65% had some work experience. They were given extra points for participation. The experiment used a two-by-two (time pressure, low/high × prosocial motivation, low/high) between-subjects factorial design. The participants were randomly assigned to four classrooms prior to the experiment. In each classroom, we seated them so that they each had one other student (a confederate) next to them to form dyads.

We followed the experimental protocol developed by Černe et al. (2014). We introduced the study by explaining that we were interested in studying how people solve business problems. Half the participants were assigned the role of a "venture capitalist" and asked to list as many novel entrepreneurial ideas as they could. The other half of the participants (i.e., the 60 confederates) were instructed to ask the participant in their dyad a question (i.e., pretending they do not know what to do, that they ran out of ideas, and asking the participant *whether they have any entrepreneurial ideas*).

Time pressure manipulation. Prior to beginning the task, we introduced our manipulations of time pressure, low/high, in two classrooms. Because the definition of time pressure includes both subjectively perceived time pressure and the imposition of a deadline/restricted time slot (Amabile et al., 2002), the manipulation consisted of giving participants in the high time pressure condition a restricted amount of time for the task (10 minutes) and constantly reminding them of the remaining time (at the 5, 8 and 9 minute

mark). In the low time pressure condition, they were given twice as much time (20 minutes) without any reminders of the remaining time.

Prosocial motivation manipulation. Prior to beginning the task, we introduced our manipulations of prosocial motivation, low/high, each in two classrooms. The manipulation consisted of varying the level of need that a task beneficiary or recipient expresses, which cultivates concern for others and thus a desire to help the beneficiary or recipient, based on the approach taken by Grant and Berry (2011). Accordingly, we provided participants with different information about the level of need that the other students (confederates) were experiencing. In the high prosocial motivation condition, participants read a statement that the confederates were in dire straits: *"The other students are really struggling with passing the class. And they are in a crucial need to pass it since they would otherwise lose their scholarship. They originate from a less developed region in Slovenia and desperately need to get a college degree to overcome poverty."*

In the low prosocial motivation condition, the students were not in need: *"Other students are doing excellent academically and are very bright. They are in no hurry to pass the course and finish their studies. They come from the capital region of Slovenia and have a bright future ahead of them"*.

After the participants completed the task, they answered questions about their knowledge hiding (Connelly et al., 2012) - $\alpha = .87$, perceived time pressure (Putrevu & Ratchford, 1997) and prosocial motivation (Grant & Sumanth, 2009), which served as manipulation checks. The participants also completed a four-item scale adapted from Davis, Conklin, Smith, and Luce (1996) on perspective taking which asked participants to indicate the extent to which they tried to see the confederate's perspectives: "I made an effort to see the world through the other student's eyes," "I imagined how the other student was feeling," "I sought to understand the other student's viewpoints," and "I tried to take the other student's

perspectives". The confederates assessed the participants' knowledge hiding (Connelly et al., 2012) to provide another viewpoint on knowledge hiding and bolster the results.

Study 2: Results

Means and standard deviations for each condition are shown in Table 3. In terms of manipulation checks, a univariate analysis of variance (ANOVA) showed the expected main effects of the time pressure manipulation on perceived time pressure (F[1,59] = 679.933, $p <$ .01), as well as the expected main effect of the prosocial motivation manipulation on self-reported prosocial motivation (F[1,59] = 139.146, $p < .01$).

Hypothesis 1, which suggested that perceived time pressure is related to increased levels of knowledge hiding, was supported. Table 3 shows knowledge hiding means in differential time pressure conditions (F[1,59] = 12.53, $p < .01$).

The analysis of variance further revealed no significant interaction effect of the time pressure and prosocial motivation manipulations on knowledge hiding (F[3,56] = 3.64, $p =$ .06; Figure 3), so Hypothesis 2 was not supported.

To examine our mediated moderation in detail, we first examined the main effect of the prosocial motivation manipulation on perspective taking, which was significant (F[1,59] = 126.68, $p < .01$), supporting Hypothesis 3a. The time pressure manipulation also exhibits a significant interaction with perspective taking in predicting knowledge hiding (F[1,59] = 4.37, $p < .01$), supporting Hypothesis 3b.

Insert Figure 3 about here

We then applied the Edwards and Lambert (2007) mediated moderation procedures by using the Preacher and Hayes PROCESS macro (Hayes, 2013) to examine whether participants' reports of perspective taking mediated the moderating effect of prosocial motivation on the relationship between time pressure and knowledge hiding. We applied

bootstrap procedures (5,000 bootstrap samples) to construct 95% bias-corrected confidence intervals for the indirect moderating effects of prosocial motivation through the mediator of perspective taking (Edwards & Lambert, 2007). The indirect effect from the full sample was -.27 (standard error = .13 with 95% confidence intervals: LLCI = -.54, ULCI = -.03). This indicates that perspective taking mediated the relationship between time pressure and knowledge hiding, moderated by prosocial motivation, supporting Hypothesis 3c.

Study 2: Discussion

The results of Study 2 replicate the support found for Hypothesis 1 in Study 1. Although Hypothesis 2 was not supported, we did find support for Hypothesis 3, which suggested that perspective taking mediates the moderating effect of prosocial motivation on the relationship between time pressure and knowledge hiding.

The design of Study 2 complements that of Study 1. Whereas Study 1 was conducted in a field setting, which increases the external validity of the findings, Study 2 was conducted as an experiment. This approach allowed us to manipulate time pressure, which enables us to make a stronger case for causal inferences among the phenomena under study.

General Discussion

Although there is evidence that many employees hide knowledge from their colleagues, little is known about the specific individual characteristics and contextual factors that contribute to this behavior. We use conservation of resources theory (Hobfoll, 1989) to explain why employees who feel time pressure are more likely to engage in knowledge hiding (as they quite likely perceive also knowledge as a limited resource), and we further consider the roles of prosocial motivation and perspective taking. When some resources (i.e., time) are threatened, employees may have a tendency to conserve other resources (i.e., knowledge), but this practice may be mitigated if the employee considers his or her colleagues' needs. Study 1 suggests that perceived time pressure is positively related to knowledge hiding. Study 2

suggests that perspective taking mediates the effect of prosocial motivation on the relationship between perceived time pressure and knowledge hiding. These complementary studies provide insights into why and when employees hide knowledge from their coworkers, and when it is less likely that they will do so.

Theoretical Contributions

The first theoretical contribution of our study is the identification of perceived time pressure as an important new antecedent of knowledge hiding. This novel focus, on situational determinants of knowledge hiding, offers significant promise as an area of exploration. Prior research has focused more on how interpersonal dynamics, such as distrust in a dyadic relationship, can affect knowledge hiding (e.g., Černe et al., 2014; Connelly et al., 2012). Extending these findings, our current results show that workers' individual perceptions of the work environment can also predict knowledge hiding. Despite its ubiquity, the effect of time pressure on employees' knowledge-related behaviors has received surprisingly little research attention. Much of the extant literature on time pressure has focused on its negative effects on employee decision quality (e.g., Ahituv et al., 1998; Betsch et al., 2004) well-being (e.g., Sonnentag & Bayer, 2005; Sprigg & Jackson, 2006) and creativity (e.g., Baer & Oldham, 2006). These outcomes are of considerable importance to individuals and organizations, but our results suggest an additional consequence of significance. When workers who experience time pressure hide knowledge from their coworkers, their own immediate in-role performance may be protected, but their own creativity and contextual performance (i.e., Rotundo & Sackett, 2002) as well as that of their work unit will be negatively affected. Organizations that are seeking to increase knowledge transfer among employees may consider reducing work overload, role overload, role ambiguity, and other time pressures, rather than introducing knowledge management technologies. Ironically, the organization as a whole may become

more productive if individual employees face less urgent pressure to accomplish tasks immediately.

The second theoretical contribution of our study is related to the moderating role of prosocial motivation in the relationship between time pressure and knowledge hiding. Prosocial motivation has been consistently linked to positive outcomes for employees and organizations. For example, employees with high levels of prosocial motivation have been shown to have commensurately high levels of commitment and dedication (Thompson & Bunderson, 2003), and help their coworkers, supervisors, and customers (Bolino, 1999; Bolino & Grant, 2016). Our research suggests that prosocial motivation can inhibit employees from engaging in largely negative behaviors such as knowledge hiding. Interestingly, however, it does so only indirectly via perspective taking. Our finding could be extended to the realm of counterproductive workplace behaviors such as social undermining, incivility, and workplace aggression. Given its general nature, it is perhaps not surprising that prosocial motivation is not a significant moderator of the relation between time pressure and knowledge hiding, in the field or the experimental study. However, prosocial motivation does lead to perspective taking, and this is what explains why some people under time pressure do not hide as much as others. As with the literature on prosocial motivation, much of the research on perspective taking has identified ways in which this individual difference can lead to increased positive employee behaviors, such as organizational citizenship behaviors (Kamdar, McAllister, & Turban, 2006) or customer service (Chan & Wan, 2012). The current study, therefore, represents a useful departure from this focus, in that it suggests that perspective taking may explain why prosocial motivation actually dampens the otherwise enforcing relationship between perceived time pressure and knowledge hiding. In this regard, we build on a growing literature on the impact of perspective taking on counterproductive workplace behaviors (e.g., Ho & Gupta, 2012).

It is important to mention that knowledge hiding and knowledge sharing have been previously established as separate constructs (Connelly et al., 2012). However, organizations are likely to simultaneously discourage knowledge hiding and encourage knowledge sharing. To the extent that the two behaviors are similar, our findings have the potential to contribute to the growing literature on knowledge sharing in organizations. In particular, there is some evidence that individual differences may explain why some employees are more likely to share their knowledge with colleagues. For example, conscientiousness, neuroticism, and openness to experience have been shown to moderate the relationship between evaluation and rewards on knowledge sharing (Wang et al., 2014). Similarly, there is evidence that an employee's evaluation apprehension reduces knowledge sharing, especially when the sharer perceives few benefits to sharing (Bordia, Irmer, & Arbusah, 2006). Likewise, we extend the results of Connelly et al. (2014), who found that time pressure reduced knowledge sharing among students in an experimental setting. Connelly et al. (2014) focused exclusively on context (e.g., shared vs. individual rewards) and did not consider how characteristics of the hider may affect their behaviors. Our finding, that the relation between time pressure and knowledge hiding is moderated by perspective taking and prosocial motivation, may inform our understanding of employees' knowledge sharing behaviors, although further study is necessary to establish this conclusively.

Practical Implications

From a practical perspective, the fact that time pressure can lead to increased knowledge hiding among employees suggests yet another reason why organizations should seek to increase the downtime available to workers. Employees who feel rushed will hide knowledge from coworkers who have requested assistance; these rebuffed employees, who will need to seek other assistance or deal with their situation on their own will be likely to feel even more time pressure, which may lead them to in turn hide knowledge from their peers. Human

resource strategies that provide adequate staffing levels for fluctuations in workload may mitigate this risk. Likewise, reducing knowledge hiding among coworkers may furthermore reduce employees' perceptions of time pressure, thereby decreasing knowledge hiding further.

Organizations may also consider ways in which they can stimulate perspective taking and prosocial motivation among employees. Recruitment and selection strategies could prioritize these employee characteristics; managers could also focus on encouraging these behaviors among existing employees. Perspective taking may be encouraged by providing employees with the opportunity to discover some personal information about coworkers (i.e., accomplishments, personal interests). It may be psychologically easier to hide knowledge from an anonymous colleague, because the hider would not imagine any consequences to the target. Prior research (e.g., Connelly & Kelloway, 2003) has identified social interaction climate as a predictor of knowledge sharing. In an interesting parallel, it is possible that frequent social interactions increase familiarity among employees, which encourages perspective taking, and which would in turn reduce knowledge hiding.

Furthermore, it is not a negligible fact to notice that not all employees are in full agreement with the initial quote about knowledge as unlimited resource that grows with use. Some employees will see knowledge as limited resource that does not increases when used. Selecting people with growth mindsets and developing collaborative cultural values, norms and behaviors would most likely lead to employees being less threatened to perceive knowledge sharing as a potential loss of a resource and would potentially disengage in knowledge hiding behaviors.

Limitations and Future Research Suggestions

Despite its many contributions, the present research is also not without limitations. Study 1 was a cross-sectional field study with self-reported data (although the two-wave design does help alleviate common-method-bias concerns) and a somewhat low response rate of 12%.

However, non-response bias analysis did indicate that there were no significant differences between respodents and non-respondents in gender, age, education, and work experience, which indicates that our sample was quite representative for the population in the participating firm. There are also potential limitations related to the experimental Study 2. The students participating in the experiment could also eventually know each other, which could influence their behavior towards other participants. Additionally, it was not possible to provide all participants with the exact same amount of time (i.e., the low time pressure condition participants had 20 minutes to do the task and the high time pressure condition participants had 10 minutes to conduct a more demanding task). That is, we manipulated both the perception of time and the actual time available. However, the same approach has been applied successfully in previous studies (e.g., Zur & Breznitz, 1981; Kocher et al., 2013). Furthermore, experimental Study 2 was paired with a field Study 1, where we found similar patterns of relationships. Our multi-study design can be seen as a strength.

Much research remains to be done in explaining the antecedents of knowledge hiding. Although we have identified moderators of the relationship between time pressure and knowledge hiding, future research can identify possible mediators of this relationship. According to affective events theory (Weiss & Cropanzano, 1996), workplace events induce an affective reaction, which causes the worker to behave in a certain way. As per this theory, it is possible that an unfortunate event at work (e.g., the announcement of a tighter deadline, an argument with a boss or coworker) would trigger a strong emotional reaction, which would in turn cause the individual to hide knowledge from a coworker who had requested it.

Our research has considered one situational antecedent, time pressure, but there are other relevant possibilities that should also be considered. It is possible that aspects of job design (e.g., role definitions) will influence whether workers focus exclusively on fulfilling their own responsibilities rather than acquiescing to others' requests (i.e., knowledge hiding).

Workers who either have strictly defined job descriptions, low autonomy in how they accomplish their assigned tasks, or who are faced with strict creativity or innovativeness requirements (cf., Unsworth et al., 2005; Anderson et al., 2014) may engage in more knowledge hiding than peers who have more autonomy. There may also be a too-much-of-a-good-thing effect (Grant & Schwartz, 2011; Pierce & Aguinis, 2013) in play with regards to highest levels of autonomy, where individuals with almost no constraints in their decision-making could again hide knowledge more because of potential perceptions of disconnectedness and lack of task interdependence with other colleagues.

Further consideration should also be given to the precise nature of the knowledge being requested. As Hansen (1999) notes, transferring knowledge was particularly difficult when it was complex; this required strong social ties between the two parties. Likewise, future research may also find that some forms of knowledge (e.g., tacit knowledge) are perceived to be time-consuming to provide to someone, especially if the requestor has little experience with the topic, which may lead employees to be more likely to hide it.

Much work also remains to be done in terms of predicting the consequences of knowledge hiding for both hiders and targets. Our results suggest that potential hiders' prosocial motivation and perspective taking moderate the effect of time pressure on their knowledge hiding, but it would be interesting to examine whether the requestors' prosocial motivation and perspective taking affects the likelihood that they will be hidden from, as well as their reactions to perceived hiding. It is possible that requestors with high levels of perspective taking or prosocial motivation will make more reasonable requests, and therefore incite less knowledge hiding. It is also possible that they will perceive knowledge hiding that is directed at them to be reasonable under the circumstances, perhaps lead to constructive deviance (cf., Vadera et al., 2013), and generally result in positive and desirable consequences. Future research can examine these possibilities.

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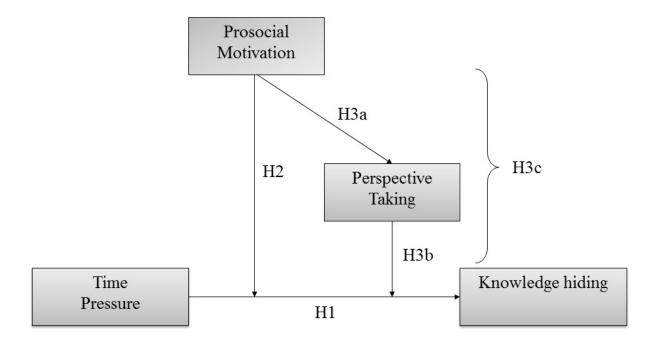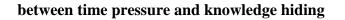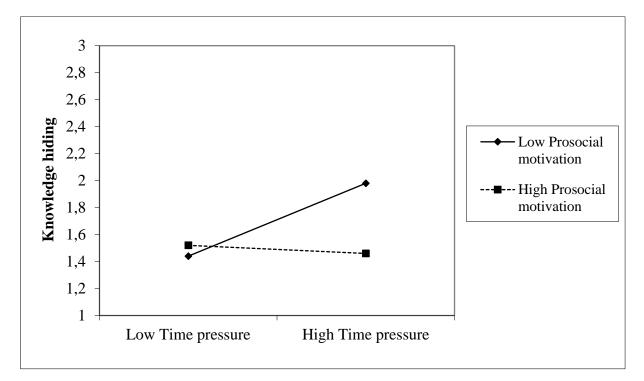
Figure 1: Theoretical model

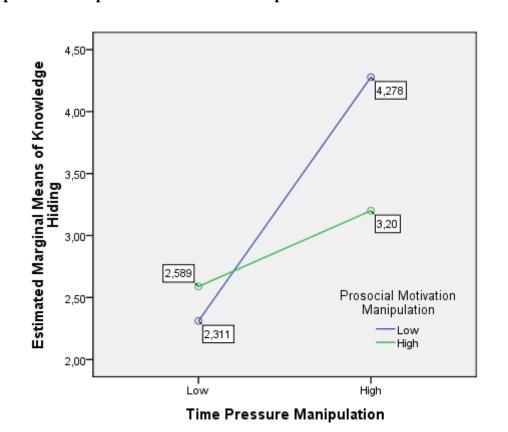**Figure 2: Study 1: The moderating effect of prosocial motivation on the relationship between time pressure and knowledge hiding**

Figure 3: Study 2: Estimated marginal means of knowledge hiding by levels of time pressure and prosocial motivation manipulations

Table 1: Study 1 - Means, Standard Deviations, and Correlations

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	Age (Time 1)	42.44	8.61	-								
2	Gender (Time 1)	1.43	.496	.04	-							
3	Education (Time 1)	3.01	1.00	-.19**	.01	-						
4	Work experience (Time 1)	8.88	8.22	.44**	-.03	-.36**	-					
5	Dyad tenure (Time 1)	4.75	4.84	.24**	-.05	-.21**	.40**	-				
6	Managerial duties (Time 1)	1.15	.35	.07	.17	.31**	-.12**	-.08	-			
7	Time pressure (Time 1)	4.22	1.33	.02	.00	.16*	.02	.07	.14**	(.87)		
8	Prosocial motivation (Time 1)	5.92	1.06	-.04	-.00	.07	-.05	-.02	.11**	.14**	(.91)	
9	Knowledge hiding (Time 2)	1.57	.96	-.06	.10*	-.15**	.08	.10*	-.03	.13**	-.14**	(.93)

Notes: n = 285. Coefficient alphas are on the diagonal in parentheses. Age is measured in years. For gender, 1 = 'female,' 2 = 'male. Dyad tenure reflects the number of years employees have worked with their current supervisor. For managerial duties, 1 = 'no', 2 = 'yes'. $^{**}p < .01$, $^{*}p < .05$

Table 2: Study 1 – Hierarchical regression analyses results for knowledge hiding as the dependent variable

	Model 1	Model 2	Model 3
Age	-.09 (.01)	-.11 (.01)	-.08 (.04)
Gender	.20** (.10)	.20** (.10)	.19** (.10)
Education	-.07 (.07)	-.10 (.06)	-.10 (.06)
Work experience	.04 (.01)	.05 (.01)	.04 (.06)
Dyad tenure	.20** (.01)	.18** (.01)	.18** (.01)
Managerial duties	.02 (.06)	.04 (.16)	-.03 (.15)
Time pressure		**.12* (.04)**	**.14* (.04)**
Prosocial motivation			-.11† (.06)
Interaction effects			
Time pressure x Prosocial motivation			-.09† (.03)
R^2	.09	.11	.11
F (df)	4.448 (279)	4.578 (278)	3.86 (269)

Notes: n = 285. Standard errors are in parentheses next to standardized coefficients (betas). Values in bold are relevant to the tests of the hypotheses. **$p < .01$, *$p < .05$, †$p < .10$

Table 3: Study 2- Means and standard deviations by condition

Condition	Time pressure	Prosocial motivation	Perspective taking	Confederate-reported knowledge hiding	Self-reported knowledge hiding
Low time pressure, low prosocial motivation ($n = 15$)	1.91 (.46)	2.67 (1.03)	2.73 (.86)	2.76 (.49)	2.31 (.68)
Low time pressure, high prosocial motivation ($n = 15$)	1.60 (.28)	5.02 (1.12)	4.90 (.99)	2.93 (.74)	2.58 (.77)
High time pressure, low prosocial motivation ($n = 15$)	5.84 (.56)	2.23 (.78)	2.43 (.80)	5.61 (.53)	4.28 (1.94)
High time pressure, high prosocial motivation ($n = 15$)	5.00 (.45)	5.70 (.71)	5.03 (.60)	4.14 (.69)	3.20 (1.65)

Notes: Standard deviations are in parentheses.