

Tilburg University

Relational climates moderate the effect of openness to experience on knowledge hiding

Banagou, Maria; Batistič, Sasa; Do, Hien; Poell, Robert Frans

Published in:
Journal of Knowledge Management

DOI:
[10.1108/JKM-11-2019-0613](https://doi.org/10.1108/JKM-11-2019-0613)

Publication date:
2021

Document Version
Peer reviewed version

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):
Banagou, M., Batistič, S., Do, H., & Poell, R. F. (Accepted/In press). Relational climates moderate the effect of openness to experience on knowledge hiding: A two-country multi-level study. *Journal of Knowledge Management*. <https://doi.org/10.1108/JKM-11-2019-0613>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

**Relational climates moderate the effect of openness to experience on
knowledge hiding: A two-country multi-level study**

Maria Banagou

**Tilburg University, School of Social and Behavioral Sciences
Department of Human Resource Studies
The Netherlands
*e-mail: maria.banagou@tilburguniversity.edu***

Saša Batistič*

**Tilburg University, School of Social and Behavioral Sciences
Department of Human Resource Studies
The Netherlands
*e-mail: s.batistic@uvt.nl***

Hien Do

**Tilburg University, School of Social and Behavioral Sciences
Department of Human Resource Studies
The Netherlands
*e-mail: hienthudo2307@gmail.com***

Rob F. Poell

**Tilburg University, School of Social and Behavioral Sciences
Department of Human Resource Studies
The Netherlands
*e-mail: R.Poell@uvt.nl***

In press.

Journal of Knowledge Management

DOI: 10.1108/JKM-11-2019-0613

Deposit licences

Emerald allows authors to deposit their AAM under the Creative Commons Attribution Non-commercial International Licence 4.0 (CC BY-NC 4.0). To do this, the deposit must clearly state that the AAM is deposited under this licence and that any reuse is allowed in accordance with the terms outlined by the licence. To reuse the AAM for commercial purposes, permission should be sought by contacting permissions@emeraldinsight.com.

For the sake of clarity, commercial usage would be considered as, but not limited to:

- Copying or downloading AAMs for further distribution for a fee;
- Any use of the AAM in conjunction with advertising;
- Any use of the AAM by for promotional purposes by for-profit organisations;
- Any use that would confer monetary reward, commercial gain or commercial exploitation.

Emerald appreciates that some authors may not wish to use the CC BY-NC licence; in this case, you should deposit the AAM and include the copyright line of the published article. Should you have any questions about our licensing policies, please contact permissions@emeraldinsight.com.

*** Corresponding author**

Relational climates moderate the effect of openness to experience on knowledge hiding: A two-country multi-level study

Abstract

Purpose: Understanding employee knowledge hiding behavior can serve organizations in better implementing knowledge management practices. The purpose of this study is to investigate how personality and work climate influence knowledge hiding, by examining the respective roles of openness to experience and relational (specifically, communal sharing and market pricing) climates.

Design/methodology/approach: Multilevel modeling was used with two distinct samples, one from Vietnam with 119 employees in 20 teams and one from the Netherlands with 136 employees in 32 teams.

Findings: In both samples, the hypothesized direct relationship between openness and knowledge hiding was not found. In the Vietnamese sample, only the moderating effect of market pricing climate was confirmed; in the Dutch sample, only the moderating effect of communal sharing climate. The findings of the Vietnamese sample suggest that people with a high sense of openness to experience hide knowledge less under low market pricing climate. In the Dutch sample, people with high openness to experience hide knowledge less under high communal sharing climate. We conclude that, in comparison with personality, climate plays a stronger role in predicting knowledge hiding behavior.

Research limitations/implications: Small sample size and self-reported data might limit the generalizability of our results.

Practical implications: The paper highlights how organizational context (relational climate) needs to be taken into account in predicting how personality (openness to experience) affects knowledge hiding.

Originality/value: This paper contributes to a better understanding of the knowledge hiding construct by extending the set of known antecedents and exploring the organizational context in which such phenomena happen.

Keywords: knowledge hiding, personality, openness to experience, relational climate, communal sharing, market pricing, multilevel modeling.

Introduction

Knowledge management is crucial to the success and survival of any organization as it provides competitive advantages (Chuang, 2004). First, knowledge management processes can help organizations efficiently acquire, store and use knowledge for work-related tasks (Ferraris, Santoro, & Dezi, 2017). Moreover, knowledge management uses existing knowledge as a resource and input in various other key organizational processes, such as the innovation process, which might result in competitive advantage.

However, a study among 700 US companies by Husted and Michailova (2002) reported that only small amounts of knowledge are shared while the majority is kept with employees, even when they leave the company. Building on this premise, Babcock (2004) concluded that Fortune 500 companies lose at least \$31.5 billion a year by failing on knowledge sharing initiatives. An important question for management, HR and researchers therefore remains how to utilize knowledge embedded in the organization by encouraging employees to share more knowledge. Nevertheless, the phenomenon of knowledge hiding – an intentional attempt to conceal or withhold knowledge that others have requested – may represent a threat to beneficial outcomes as well.

Researchers have argued and found that knowledge hiding is different from a mere lack of knowledge sharing, as it includes an *intentional* attempt to withhold knowledge from someone else (Connelly et al., 2012). It is often compared to other negative behaviors, such as knowledge hoarding, counterproductive working behavior, aggression or even knowledge sabotage (Connelly et al., 2012; Konstantinou & Fincham, 2011; Serenko, 2019). These findings suggest that knowledge hiding is a distinct and overlooked construct worth exploring, as it could negatively relate to individual, unit and/or organizational performance.

Surprisingly little research has been done so far to explore the antecedents and consequences of knowledge hiding (Connelly, Zweig, Webster, & Trougakos, 2012; Peng, 2013; Wang, Han, Xiang, & Hampson, 2019). A few studies did examine the correlates of knowledge hiding, including the distrust loop between knowledge hider and knowledge seeker (Connelly et al., 2012); knowledge-based psychological ownership (Peng, 2013), Machiavellianism (Pan, Zhou, & Zhang, 2016), reduced creativity (Černe, Nerstad, Dysvik, & Škerlavaj, 2014) and increased voluntary turnover intentions (Serenko & Bontis, 2016). Studies conducted so far, however, have neglected two important aspects that could either hinder or enhance knowledge hiding in organizations, especially when interrelated – personality and context. In the present paper, therefore, two crucial antecedents of knowledge hiding will be central to the investigation. We argue that knowledge hiding is the result of an intricate combination of individual characteristics (openness to experience) and contextual factors (relational climate). We firmly believe that we need to deploy a person-by-situation approach to get the best possible picture of how knowledge hiding works. Now that the phenomenon of knowledge hiding as such has been established in literature, it is time to address the serious gaps that exist in our understanding of how personality and context interact to explain its occurrence.

First, then, the role of personality traits and their relationship with knowledge hiding remain underexplored in literature (Connelly & Zweig, 2015; Malik et al., 2019; Pan, Zhang, Teo, & Lim, 2018). This is problematic as studies on personality traits have found that employees' dispositions predict job attitudes and behaviors throughout their careers (Staw, Bell, & Clausen, 1986). It seems very likely that some personality traits can lead individuals to be more or less prone to hiding knowledge (Demirkasimoglu, 2016). For example, previous studies have found that personality traits, such as the Big Five, are closely related to behavioral intentions

(Guadagno, Okdie, & Eno, 2008) and motivation towards individual outcomes (Neuman, Wagner, & Christiansen, 1999), such as knowledge sharing (Cabrera, Collins, & Salgado, 2006) or job performance (Tett & Burnett, 2003). Among the Big Five traits, especially openness to experience has been under-researched compared to the other four characteristics (Klein & Lee, 2006; Penney, David, & Witt, 2011). This is surprising as openness highlights intellectual curiosity and can be linked to creativity, seeking out new independent ways of exploration and expression (Simha & Parboteeah, 2019) and knowledge sharing (Cabrera et al., 2006). This suggests that the openness trait can be highly important for positive knowledge-related activities as indicated above; however, findings related to negative and deviant behaviors are rare and contradictory. For example, research has shown that in an educational context there is a negative relationship between openness to experience and knowledge withholding intention (Wang et al., 2014), yet openness might also be related to workplace delinquency (Murphy & Lee, 1994). We argue that further exploration of openness in relationship with knowledge hiding might provide new evidence of how personality, specifically openness to experience, relates to negative workplace behaviors such as knowledge hiding (Connelly & Zweig, 2015; Malik et al., 2019; Simha & Parboteeah, 2019).

Second, although research suggests that knowledge hiding is situation specific and its motivation depends on the surroundings (Connelly et al., 2012), very few studies in the knowledge hiding domain have taken into consideration the role of organizational context as yet (Connelly, Černej, Dysvik, & Škerlavaj, 2019). The context of a work situation (in the present study: relational climate) motivates individuals, provides cues as to how they should behave (Johns, 2018; Tett & Burnett, 2003) and boosts conformity and adherence to specific norms (Brock, Zmud, Kim, & Lee, 2005). Investigating how organizational climate interacts with personality to activate

individuals' traits and affect their behaviors could provide important insights into how knowledge hiding works. Specifically, we link the dyadic relational characteristic of knowledge hiding with an organizational climate that emphasizes relationships at work (Xiong, Chang, Scuotto, Shi, & Paoloni, 2019). A fundamental framework underlying human relational dynamics is Relational Model Theory, first proposed by Fiske (1992). This theory stipulates that interactions between individuals follow certain patterns, grounded in practices, norms and formal rules (Batistič, Černe, Kaše, & Zupic, 2016); individuals might, therefore, act in a different way under different relational climates (Brock et al., 2005). Thus, such climates might actively complement or inhibit individuals' openness to experience, hence affecting their motivation and behavior at work, which could result in different knowledge hiding outcomes.

Based on these considerations, our research question is as follows: To what extent do team-level relational climates moderate the relationship between individual-level openness to experience and knowledge hiding? The present inductive study will therefore contribute to knowledge management literature in two ways.

First, we aim to clarify how openness to experience relates to knowledge hiding. Addressing one of the most under-researched Big Five traits, we will investigate if individuals highly open to experience are less likely to hide knowledge (Simha & Parboteeah, 2019). This first aim answers to the call to explore how personality traits might relate to knowledge hiding (Connelly & Zweig, 2015; Pan et al., 2018; Serenko & Bontis, 2016), as there might be important differences compared to previous studies focusing on knowledge sharing (Anand & Jain, 2014) or negative behaviors (such as knowledge withholding) in the educational sector (Wang et al., 2014).

Second, our study aims to further expand the understanding of how contextual influences (specifically, relational climates) interact with personality characteristics (especially openness to

experience) to affect knowledge hiding (Lewin, 1951; Pervin, 1989; Tett & Burnett, 2003; Xiong et al., 2019). This second aim answers to the call for further multi-level approaches in studying knowledge hiding (e.g., Serenko & Bontis, 2016), where an interaction exists between personality and climate (Wang & Noe, 2010). It also elucidates how the context might change the way individuals hide knowledge (Connelly et al., 2019). Moreover, it further enriches our understanding of what kind of context, namely a relational based one, might hinder or enhance knowledge hiding in organizations (Connelly et al., 2019; Connelly et al., 2012).

In the sections below, we will develop and test a model of knowledge hiding that integrates contextual and personality characteristics, namely relational climates and openness to experience. Then we will discuss the implications of our results for research on knowledge hiding, explain potential practical implications, and elaborate on potential limitations and promising future research directions.

Theoretical framework

Knowledge hiding

Knowledge is a process, and knowledge management systems are aimed at the knowledge flow and the process of creating, sharing and distributing knowledge to allow the organization to gain or maintain competitive advantage (Alavi & Leidner, 2001). One of the key aims of knowledge management projects, according to Davenport and Prusak (1998), is to develop a knowledge-intensive culture by encouraging positive behaviors such as knowledge sharing, as opposed to negative ones such as knowledge withholding or knowledge hiding.

Connelly et al. (2012) defined knowledge hiding as the intentional attempt to conceal or withhold knowledge requested by others. This definition emphasizes that when knowledge

hiding occurs, it requires someone requesting specific knowledge or information and a knowledge holder intentionally not sharing it (Černe et al., 2014; Connelly & Zweig, 2015; Connelly et al., 2012). Knowledge hiding can have positive intentions or outcomes. It may be intended to protect the other party's feelings or interests, preserve confidentiality or even relate to higher sales performance (Connelly et al., 2012; Wang et al., 2019). As such it is not a uniformly negative behavior (Connelly et al., 2012). However, in most work settings it is considered a negative individual knowledge contribution (Babič, Černe, Connelly, Dysvik, & Škerlavaj, 2019; Peng, 2013; Wang et al., 2019).

Previous research has shown that knowledge sabotage, knowledge hoarding and knowledge sharing are constructs that are different from knowledge hiding (cf. Serenko, 2019). Knowledge hoarding represents an act of accumulating knowledge that may or may not be shared later on (Evans, Hendron, & Oldroyd, 2015; Hislop, 2003). Both knowledge hiding and hoarding might be characterized by a repertoire of possible behaviors that can be linked to knowledge withholding; however, knowledge hiding represents the intentional concealment of knowledge requested by another individual (cf. Connelly et al., 2012), whereas knowledge hoarding captures the accumulation of knowledge that has not necessarily been requested by another individual (Webster et al., 2008). Recently, scholars have also proposed knowledge sabotage as a negative behavior in organizations (Serenko, 2019). While with knowledge hiding the asked party has the required knowledge, they do not know whether this knowledge is of critical importance and whether the requester will be able to effectively apply it to the work environment. With knowledge sabotage, however, employees intentionally give their colleagues wrong knowledge or hide critical knowledge despite being aware of the latter's need for this knowledge and their

ability to apply it at work. This results in one of the most negatively impactful behaviors for an organization, even more so than knowledge hiding (Serenko, 2019).

Turning to a comparison of knowledge hiding and sharing, hiding is not the mere absence of sharing; hiding is rather the intentional attempt to withhold or conceal knowledge requested by another party. Authors highlight that the key difference might be in the motivation behind both behaviors (cf. Connelly et al., 2012). Knowledge hiding might be motivated by several different reasons, as mentioned above, whereas a lack of sharing is likely driven by an absence of knowledge itself (cf. Connelly et al., 2012).

Openness to experience as a predictor of knowledge hiding

Despite these nomological differences, research on antecedents of knowledge hiding tackling the motivational aspect of this behavior remains scarce (Connelly et al., 2019). One possible antecedent of such motivational and behavioral processes could be personality traits.

Personality is defined as the characteristic sets of behaviors, cognitions and emotional patterns that evolve from biological and environmental factors (Corr & Matthews, 2020). They are important in organizational contexts because they can predict an individual's actions (Staw et al., 1986). Personality traits, and especially the Big 5, are among the most studied traits (John & Srivastava, 1999). Their success might be due to a replicable representation of the major dimensions: neuroticism (vs. emotional stability), extraversion (vs. introversion), openness to experience (vs. cautiousness), conscientiousness (vs. carelessness) and agreeableness (vs. antagonism). Their five factor structure can be reliably generalized across different types of samples, raters and methodological variations when comprehensive sets of variables are factored in (John & Srivastava, 1999). Our current focus on openness to experience as a predictor of

knowledge hiding is based on its well-established links with positive behaviors, such as creativity (Judge & Zapata, 2015) and knowledge sharing (Cabrera et al., 2006).

The relationship of openness to experience with negative and deviant behavior, however, remains inconclusive at this time. For example, openness to experience is not considered part of a higher-order 'moral personality' (McFerran, Aquino, & Duffy, 2010) and some studies find only marginal correlations with unethical outcomes (Simha & Parboteeah, 2019). Several studies, on the other hand, suggest that low openness to experience results in right-wing authoritarianism, which tends to be associated with lower levels of moral reasoning (McAdams, 2009). Low openness to experience might also lead to deviant behavior in organizations (Amiri, Farhoodi, Abdolvand, & Bidakhavidi, 2011). We believe that this inconclusiveness warrants more research and argue that openness to experience might be related to less negative behaviors. We explain why this is the case below.

Individuals with high levels of openness are curious about both inner and outer worlds and they are willing to consider new ideas and unconventional values; they experience both positive and negative emotions more keenly, thus probably influencing wanted and unwanted behaviors such as knowledge hiding or sharing (Anand & Jain, 2014; Matzler, Renzl, Müller, Herting, & Mooradian, 2008). More specifically, Gupta (2008) described people with high openness to experience as imaginative, creative, cultured, original, broad-minded, intelligent and artistically sensitive. Openness was also found to be positively related to self-perceptions of learning ability, motivation to learn, and participation in development activities (Major, Turner, & Fletcher, 2006). These findings relate to the notion that openness to experience is one of the key personality traits related to morality (Simha & Parboteeah, 2019) and dishonesty in general (Nguyen & Biderman, 2013). For example, McAdams (2009) argues that individuals high on

openness to experience might have higher levels of moral reasoning, which suggests that they might be less prone to engage in negative behaviors (which knowledge hiding is often considered to be). Furthermore, Simha and Parboteeah (2019) did not find any relationship between openness to experience and willingness to justify ethically suspect behaviors, which shares some characteristics with knowledge hiding as well. They speculate that this might relate to individuals high on openness being more likely to be creative and seek out new independent ways of expression and exploration. Thus, it is quite likely that this part of their personality might prevail and buffer their unethical activity counterpart (Baucus, Norton, Baucus, & Human, 2008; Simha & Parboteeah, 2019). Therefore, open individuals might be more likely to share knowledge than hide it (Cabrera et al., 2006; Matzler & Mueller, 2011; Matzler et al., 2008). The core of openness, after all, is originality and curiosity, and open people tend to contribute knowledge and seek insights from others. Prior research by Wasko and Faraj (2000) illustrated that individuals are motivated to contribute knowledge to others when they perceive it as an “intellectual pursuit”, in other words, helping people solve problems is “challenging and fun”. This intrinsic motivation is best suited to those with high levels of openness to experience as they are usually keen to find new ways of overcoming problems and uncertain issues (Srinivasan, 2009).

Finally, it was found that openness to experience positively influenced perceived social identity, that is, reflecting how people perceive their fit within a certain social group (Abrams & Hogg, 1988), and in turn negatively affected knowledge withholding intentions (Wang et al., 2014). Hence, higher levels of openness to experience could lead to lower levels of knowledge hiding behavior. Therefore, we hypothesize:

H1: Openness to experience is negatively related to knowledge hiding.

The role of relational climate

The organizational context consists of situational or environmental constraints and opportunities that can affect the occurrence and meaning of organizational behavior (cf. Johns, 2017). Such an idea is not new and has shown promising results in social psychology, where individuals exposed to a certain context (e.g., region) might display different personalities and, as a consequence, behave in different ways (Rentfrow, 2010). Thus, the understanding of several traditional variables, which are mostly explored at the individual level (e.g., personality and behaviors) can be considerably augmented by a contextual perspective (Johns, 2018). A higher-level organizational context can lead to the activation of certain constraints changing lower-level relationships, such as knowledge hiding behavior (Tett & Burnett, 2003).

We specifically focus our understanding of higher-level organizational context on the organizational climate (Tett & Burnett, 2003), which can thus serve as a higher-level moderator of the relationship between personality and individual behaviors (Johns, 2018; Tett & Burnett, 2003). More in detail we propose, similarly to Tett and Burnett (2003), that a context is relevant to a trait or behavior if it is thematically connected by the provision of cues/stimuli—response (or lack thereof) indicating a person's standing on the trait/behavior. For example, a situation that is characterized by heavy social exchange might be relevant for negative behaviors such as knowledge hiding, because conforming to such a context by exchanging knowledge (or not) might for various reasons relate to the essence of high or low knowledge hiding. Similar logic and framework have also been applied in studies exploring knowledge sharing (Liu & DeFrank, 2013), and for the above reasons we believe it might work in the same way for knowledge hiding.

Knowledge hiding by definition is a dyadic and inherently relational exchange, and it has been demonstrated that employees consider situational and contextual signals when reacting to coworkers' requests for knowledge (cf. Connelly et al., 2012). Therefore, the higher-level context provided by a climate that highlights the relational and exchange nature of work relationships in an organization might be important. The Relational Model Theory proposed by Fiske (1992) could provide such a climate and framework, as it explicitly argues that individuals are sociable – they generally organize their social lives in function of their relationships with other individuals. This theory proposes four elementary cognitive models in terms of which social relationships are represented, comprehended, evaluated and constructed (Haslam & Fiske, 1999). The Relational Model Theory proposes that all individuals' interactions can be described in terms of just four “relational models” or elementary forms of individual interactions. As such, these four types of social interactions can form the context – relational climates – in which individuals build schemata to construct relationships (cf. Johns, 2017; Tett & Burnett, 2003). Thus, relational climates can be defined as: “shared employee perceptions and appraisals of policies, practices and behaviors affecting interpersonal relationships in a given context” (Mossholder, Richardson, & Settoon, 2011, p. 36).

More in detail, there are thus four fundamental relation models to which people refer to generate social actions, understand and evaluate other's social behaviors as well as coordinate, plan, encode and remember social actions. They are Communal Sharing (*people interact with each other because they are in the same bounded group*), Authority Ranking (*people are ordered along a hierarchical social dimension*), Equality Matching (*people expect a balanced return and one-for-one correspondence*) and Market Pricing (*people rationally consider the cost-benefit analysis*). The relational climate model has been argued to affect an individual's attitudes and

behaviors through shared norms and interactions among people (Batistič et al., 2016). Previous research has indicated the effects of relational climate on individual characteristics, such as social cynicism (Tumasjan & Strobel, 2012) and proactivity (Batistič et al., 2016). Overall, relational climate is relevant to understanding knowledge hiding as the latter focuses on dyadic relationships between individuals, which can be affected by the climate in place. While studying this effect has been advocated in the past, the role of climate remains underexplored in the knowledge hiding literature (Connelly et al., 2019). Doing so will also allow us to explore how various relational climates can activate behavior in traits that might result in knowledge hiding (cf. Xiong et al., 2019).

In studying relational climates, we opted to focus on two extremes as such an approach leads to a clear recognition of central constructs, relationships and logics of the focal phenomenon (Eisenhardt & Graebner, 2007). This focus allows us to find patterns in the data more easily as well as provides more straightforward theoretical underpinnings and motivation (e.g., purely transactional relationships vs. a Samaritan one) (Mills, Durepos, & Wiebe, 2010). A polar type approach has already been used previously, where communal sharing and market pricing climates were compared because they are opposed, and the striking differences could lead to better theoretical advancement (Batistič et al., 2016).

Thus in the next sections, based on the premise that a higher-level construct (relational climate) can activate individuals' behaviors (Johns, 2018; Tett & Burnett, 2003), we will explore how these two relational extremes – the communal sharing and market pricing climates – can affect the relationship between openness and knowledge hiding. Overall, people who are high in openness to experience will most likely adjust easily to changing and diversified work environments (LePine, Colquitt, & Erez, 2000). Goldberg (1990) classified one's openness to

experience as “intellect”, therefore, people high in openness to experience are predicted to adjust their behaviors according to the relational climate. They are expected to act upon the returns of exchanged knowledge due to the nature of curiosity and the quest for new knowledge and experience.

Moderating effect of communal sharing climate on the relationship between openness to experience and knowledge hiding. The communal sharing relationship is based on a conception of some bounded group of people as equivalent and undifferentiated (Fiske, 1992). Knowledge is viewed as a common good belonging to the whole group, thus members will share and exchange their knowledge for the group interest instead of personal interests (Faraj & Wasko, 2001). This relationship contains an almost pure type of altruism, as members in the communal sharing model regard other members like themselves and they voluntarily contribute their knowledge without receiving monetary rewards (Lee & Cole, 2003). The major elements in the communal sharing relation include altruism, community interest, helping others, group identification and collectivism (Haslam & Fiske, 1999); hence, a strong communal sharing climate would facilitate a decrease in knowledge hiding behavior.

This positive message of the climate will further activate behaviors in individuals with high openness. Potential negative behaviors spawning from openness to experience (e.g., low moral reasoning; McAdams, 2009) which could lead to knowledge hiding will be substituted with positive behaviors in this climate (problems are an intellectual pursuit for highly open people, all are in the same boat here and ‘we need to help each other out’). This will lower potential knowledge hiding behaviors. In such a situation knowledge is considered common property of the whole group (Fiske, 1992). Ultimately, we believe the communal sharing climate will ease the hesitation to share knowledge in this case and thus decrease the level of knowledge hiding.

A situation characterized by communal sharing and openness will result in a match between the characteristics of the context and personality, leading to a so-called fit situation (Cable & Edwards, 2004). Cable and Edwards (2004) argue that when the values of the person are congruent with the values of the climate, the person will experience cognitive assonance and positive job attitudes. In our case this means that under a condition of high communal sharing, highly open individuals will be less prone to knowledge hiding.

H2: Communal sharing climate moderates the negative relationship between openness to experience and knowledge hiding behavior, in such a way that this relationship is stronger (more negative) under higher levels of communal sharing climate.

Moderating effect of market pricing climate on the relationship between openness to experience and knowledge hiding. The market pricing relationship is based on a model of proportionality in social relationships, in which all the relevant features and components under consideration are reduced into a single value that allows for the comparison of many qualitative and quantitative factors (Fiske, 1992). This is partly explained by psychological-need fulfillment studies, which indicate that a person cognitively compares the amount of reward they desire and the supplies provided by the organization (French, Caplan, & Van Harrison, 1982). Van Baalen et al. (2013) studied the principle behind knowledge sharing in a market pricing climate, where people could trade their knowledge for something they desire from the recipient or from the organization, and where cost-benefit ratios and rational calculation are applied. Many researchers found evidence supporting this relationship, such as Watson and Hewett (2006), who revealed the link between frequency of knowledge contribution and advancement within the organization; or Cabrera et al. (2006) who found a positive correspondence between extrinsic rewards and knowledge sharing; and Wang and Noe (2010) even suggested that the effectiveness of extrinsic

rewards in motivating knowledge sharing could be dependent on individual personality traits (including openness).

Overall, the negativity of the market pricing climate will result in competitiveness, which has been found to be positively related to knowledge hiding (Semerci, 2019). Individuals hide knowledge if they perceive no or lower benefits – either physical returns like rewards, compensations, gifts or non-physical returns like similar knowledge or intellectual rewards (Boer, Berends, & van Baalen, 2011); hence, a strong market pricing climate would facilitate an increase in knowledge hiding behavior.

In terms of personality, we believe that the market pricing climate might activate more negative behaviors associated with the openness to experience trait. Thus, highly open individuals under such a climate would be motivated to show higher levels of dishonesty and deviance (Williams, Nathanson, & Paulhus, 2010). Under a market pricing climate, we believe that the context is going to offset the individual. In this climate people cognitively compare the value of their resources with the amount they see as being received by the organization (French et al., 1982). In our case this means that under a condition of high market pricing, highly open individuals will be more prone to knowledge hiding.

H3: Market pricing climate moderates the negative relationship between openness to experience and knowledge hiding behavior, in such a way that this relationship is weaker (less negative) under higher levels of market pricing climate.

The conceptual model that results from our combined hypotheses is presented in Figure 1.

‘Place Figure 1 here’

Method

Sample and procedure

The cross-sectional data of the present study were collected online using Qualtrics software in 2017 and comprised multiple work sectors from Vietnam and the Netherlands.

The empirical data of the Vietnamese sample were collected from 119 employees nested within 20 teams from 20 companies. The average number of participants per team was 5.95, ranging from four to twelve. About 36 percent of the participants were male and their average age was 28.73 years ($SD = 4.35$). The participants had been working at their current place of employment for an average of 3.31 years ($SD = 2.65$).

The empirical data of the Dutch sample were collected from 136 employees nested within 32 teams from 28 organizations. The average number of participants per team was 4.25, with a range from two to nine. Approximately 36 percent of the participants were male and their average age was 37.95 years ($SD = 11.58$). The participants had been working at their current place of employment for an average of 8.78 years ($SD = 9.93$). The sample in each country could be seen as rather small for a multi-level analysis (Scherbaum & Ferreter, 2009); however, it may be deemed appropriate for exploratory studies (e.g., Wang, Fang, Qureshi, & Janssen, 2015).

A comparative design was used to assess whether knowledge hiding scores differed between these two countries. To identify the differences between the key variables of the Vietnamese and Dutch sample, a one-way ANOVA was conducted. The results indicated that there were statistically significant differences between the two countries in the independent variable openness to experience and the focal (dependent) variable knowledge hiding. Specifically, the average score on knowledge hiding in the Vietnamese sample ($M = 2.64$, $SD = 1.25$) was

significantly higher than that in the Dutch sample ($M = 1.54, SD = .77$), $F(1, 253) = 73.904, p < .001$. In the same vein, the average score on openness to experience in the Vietnamese sample ($M = 5.10, SD = .92$) was significantly higher than that in the Dutch sample ($M = 4.78, SD = .91$), $F(1, 253) = 7.729, p = .006$. The average scores on communal sharing climate in the Vietnamese sample ($M = 4.95, SD = .84$) were not significantly different from those in the Dutch sample ($M = 5.15, SD = .87$), $F(1, 253) = 3.543, p = .061$. Likewise, the average scores on market pricing climate in the Vietnamese sample ($M = 3.99, SD = .96$) were not significantly different from those in the Dutch sample ($M = 3.79, SD = .80$), $F(1, 253) = 3.115, p = .079$. Therefore, all hypotheses were examined separately for the Vietnamese and Dutch samples.

To acquire these samples, companies from the personal networks of the research group members were approached to participate in the study. Usually through the HR department, several teams per company were then approached and selected on their willingness to participate. Although at first glance this might seem problematic for generalizability, such sampling techniques are adequate when the aim of the analysis is theory building (Vandenbosch, Saatcioglu, & Fay, 2006), which is how we see our study. Teams were seen as having at least three members and a single supervisor to allow for a multilevel structure to be analyzed (cf. Hox, 2010), therefore departments with several supervisors could have several teams in the study. Through the data collection procedure (using Qualtrics software) joint team members could be identified as such.

The scales for both samples were translated from English to the official language of each country and then back to English, following a translation–back-translation procedure (Brislin, 1986).

Organizations had to meet a specific requirement to be included in both samples: they had to have at least 50 employees per company to ensure an established organizational climate. We did not limit the sample to specific industries; however, most of the sample in both countries (70% in

Vietnam and 63% in The Netherlands) comes from knowledge-intensive industries where knowledge exchange is at the core of business, such as banking, insurance, audit, data solutions, universities, consultancy, smart industries, et cetera.

Measures

Knowledge hiding was self-reported and assessed with a 12-item scale developed by Connelly et al. (2012), Vietnam, $\alpha = .92$; Netherlands, $\alpha = .87$. This scale has been widely used by recent research on knowledge hiding, such as (Černe et al. (2014); Demirkasimoglu (2015)) and Pan et al. (2016). The items asked participants to think about a recent situation when a specific colleague had requested knowledge from them and they rejected to provide the answers, followed by “In this case, I ...”. Consistent with the original scale (Connelly et al., 2012) and literature on deviant behaviors (Krosgaard, Brodt, & Whitener, 2002) the introduction question was based on the critical incident technique, in which participants were asked to answer questions about a recent incident at work. Sample items are “Agreed to help him/her but never really intended to” or “Pretended that I did not know the information” with a rating scale from 1 = “not at all” to 7 = “to a very great extent”.

Openness to experience was selected from the Big 5 personality model. There are several self-reported constructs to measure the Big 5. In the present study, the respondent’s personality structure was assessed using 15 items from the Big Five Inventory Version (BFI-S) by Gerlitz and Schupp (2005); Lang, John, Lüdtke, Schupp, and Wagner (2011)), and John and Srivastava (1999). The BFI-S is a relevant and short instrument designed to measure the Big 5 personality factors in large surveys. Langford (2003) suggested that this scale is an optimal balance between economy and validity. In addition, the 15-item scale was found to be robust in different assessment methods such as computer-assisted, paper and pencil, telephone and self-

administration versions, across 5-year longitudinal research and across young, middle and old adulthood (Lang et al., 2011).

For openness to experience, 3 items were included in the questionnaire (Vietnam, $\alpha = .70$; Netherlands, $\alpha = .46$). To be noted here is that this scale was not developed specifically to maximize internal consistency (Cronbach's alpha), as with only 3 items this cannot be effectively achieved (Gosling, Rentfrow, & Swann Jr, 2003). For example, Lang et al. (2011) reported reliability of .63, whereas Gosling et al. (2003) reported .45. Rather, the scale emphasizes the content validity, by means of lower inter-item correlations than typically more homogenous scales. Short personality scales are more reliable in the long run, as the reliability of a short scale after the test—retest is considered to be acceptable in most cases (Gosling et al., 2003; Lang et al., 2011). The short scale was chosen because data had to be collected as part of a larger research project. Respondents had to indicate to what extent the personality statement best described and applied to them, ranging from 1 = “strongly disagree” to 7 = “strongly agree”.

Communal sharing and market pricing relational climates were measured using eight-item scales by Haslam and Fiske (1999), with the respondent's other team members as referent other. Sample items for communal sharing climate include “You share many important responsibilities jointly, without assigning them to either of you alone” or “You make decisions together by consensus” (Vietnam, $\alpha = .81$; Netherlands, $\alpha = .79$). Sample items for market pricing climate include “What you get from your coworkers is directly proportional to how much you give them” or “With this person, you make decisions according to the ratio of the benefits you get and the costs to you” (Vietnam, $\alpha = .83$; Netherlands, $\alpha = .68$). The participants were asked to rate the relationship with their co-workers from 1 = “very untrue of this relationship” to 7 = “very true of this relationship”.

Since the perceived climate reflects employees' shared perceptions (Batistič et al., 2016), communal sharing and market pricing climates were captured at team level by aggregating the scores of all individual employees in each team. The intraclass correlations (ICCs) and the multi-item within-group agreement ($r_{wg(j)}$) were calculated to validate the aforementioned aggregations. For the Vietnamese sample, $r_{wg(8)}$ of communal sharing climate ranged from .72 to .93 (a slightly skewed shape) with a mean of .83; ICC1 was .20 and ICC2 was .60 ($F = 2.48, p = .002$). For market pricing climate, the range of $r_{wg(8)}$ fluctuated between 68 and 92 (also a slightly skewed shape) and the mean was .80, with ICC1 at .20 and ICC2 at .60 ($F = 2.51, p = .002$).

For the Dutch sample, $r_{wg(8)}$ of communal sharing climate ranged from .69 to .94 (a slightly skewed shape) and the mean was .83; ICC1 was .30 and ICC2 was .64 ($F = 2.79, p < .001$). For market pricing climate, the range of $r_{wg(8)}$ was .67 to .95 (also a slightly skewed shape) and the mean was .80, with ICC1 at .19 and ICC2 at .51 ($F = 2.02, p = .004$).

According to James, Demaree, and Wolf (1984), the range of ICC1 is generally between 0 and .50, with a median of .12. The values obtained in the present study are above this median and indicate significant between-group variances in relational climate. Nevertheless, there are no definite guidelines for determining acceptable values. Although no critical cutoff exists for $r_{wg(j)}$ estimates, the traditional heuristic cutoff suggested for aggregation is .70 (James et al., 1984; Lance, Butts, & Michels, 2006). To address our research question and ground our efforts to aggregate measures regarding the relational climate in a team as perceived by employees, we decided to create aggregate measures of the communal sharing and the market pricing climates. Perceived team climates represent employees' shared perceptions and, as a result, an aggregated measure for climate may be the most appropriate way to examine its relationship with knowledge hiding (Connelly et al., 2012).

Control variables. Besides personality, other individual factors like age, gender and working tenure can also influence employees' knowledge behavior (Wang & Noe, 2010). Hence, it was essential to control for these factors to further explore their impact on our key variables. Age, gender and working tenure were included in the questionnaires and self-reported by the participants. Age and working tenure (general work experience) were coded as ratio variables and measured in years. Gender was coded as a nominal variable, in which male was coded as 1 and female was coded as 2.

Analysis and results

Common method bias

Instead of using Harman's single-factor test, we used a technique of controlling for the effect of an unmeasured latent methods factor in both samples to detect the potential problem of common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Using this method allows us to check if the variance of the responses to a specific measure is partitioned into three components; trait, method and random error. However, this method cannot tackle the identification of the specific cause of method variance. In spite of this, Podsakoff et al. (2003) suggest using this approach if the foci phenomena are measured in different contexts, like in our research.

The items were loaded on their theoretical constructs as well as on a latent common method variance factor and the significance of the structural parameters was examined both with and without the latent common methods variance factor in the model. The two models of both samples were not significantly different, as the largest difference of the standardized regression weights between the models was .086 for the Vietnamese sample and .019 for the Dutch sample. Therefore, common method bias was not a pervasive problem in the present study.

Descriptive statistics, validity, reliability and model specification

The descriptive statistics for all variables of both samples are presented in Table 1. Model fit with the data for both the Vietnamese and Dutch sample was evaluated by confirmatory factor analysis using AMOS 24 software. For the Vietnamese sample, the expected four-factor solution (openness to experience, knowledge hiding, communal sharing and market pricing) fit reasonably with the data (χ^2 [397] = 567.499, CFI=.90, TLI=.882, RMSEA= .060). The factor loadings ranged from .362 to .662 for the communal sharing climate items, .458–.721 for the market pricing climate items, .427–.886 for the knowledge-hiding items and .482–1.085 for the openness to experience items. For the Dutch sample, the expected four-factor solution (openness to experience, knowledge hiding, communal sharing and market pricing) fit moderately with the data (χ^2 [384] = 550.731, CFI=.891, TLI=.868, RMSEA= .057). The factor loadings ranged from .260 to .817 for the communal sharing climate items, .099–.682 for the market pricing climate items, .435–.854 for the knowledge-hiding items and .207–1.182 for the openness to experience items. Although some factor loadings were rather low, no item was deleted, to sustain the integrity of the scales.

We also checked for discriminant validity and multicollinearity. All variance inflation factors (VIFs) were below 10 (Hair, Black, Babin, & Anderson, 2010), ranging from 1.01 to 1.15 for the Vietnamese sample and from 1.02 to 1.04 for the Dutch sample. Discriminant validity was checked by looking at the square root of the average variance extracted (AVE) and compared to its correlations with other factors. Results for both countries were acceptable (the square root of AVE was always greater than inter-construct correlations), although AVE for market pricing and communal sharing was below the suggested threshold of 0.5 in Vietnam (0.40 and 0.41, respectively) and quite problematic in The Netherlands (0.34 for the market pricing and 0.32 for

communal sharing). This is on the low side and some authors suggest low factor loadings should be deleted to increase AVE (Hair et al., 2010); however, for the same reasons as described above – retaining the scale integrity – and as VIF did not flag any problems and the composite reliability for all climates was always above 0.6 (Fornell & Larcker, 1981), we decided to continue with the analyses.

‘Place Table 1 here’

Multilevel analysis results

When data are collected from multiple individuals in a team, the individual data are considered nested within that team, therefore our data consists of two levels – individuals and teams (as one comprehensive score for all individuals in the team). Since relational climates were aggregated at the team level, using multilevel analysis is warranted as such a method allows us to split residual components and variance between levels (individual and team), as both can influence the focal outcomes (Hox, 2010). We used multilevel analyses as traditional regression techniques treat the unit of analysis as independent observations, failing to recognize the nested structure (having multiple individuals nested with a team; because individuals in the team are not independent of each other), thus leading to underestimation of standard errors and an overstatement of statistical significance. This is especially true for higher-level constructs, such as contextual ones (cf. Klein & Kozlowski, 2000). A similar approach to ours has been used already in various knowledge hiding studies, which are based on nested data (e.g., Babič et al., 2019; Černe, Hernaus, Dysvik, & Škerlavaj, 2017; Huo, Cai, Luo, Men, & Jia, 2016). Thus we see our approach as correct and superior to classical regression approaches.

Multilevel analysis was conducted using HLM software, version 7.03, with restricted maximum likelihood estimation for both samples. The Vietnamese dataset had two hierarchical levels: 119

employees as level 1 and 20 teams as level 2. The Dutch data set had two hierarchical levels: 136 employees as level 1 and 32 teams as level 2. Following the steps in hierarchical linear modeling (or random coefficient modeling), four models were tested: (1) The intercept model to test the existence of a multilevel structure. (2) The level-1 model to test the relationship between openness to experience and knowledge hiding – Hypothesis 1. (3) The cross-level model to test the relationships of communal sharing climate and market pricing climate with knowledge hiding, holding all other variables constant. (4) The interaction model to test the moderation of communal sharing climate as well as market pricing climate and openness to experience towards knowledge hiding – Hypotheses 2 and 3.

For hypotheses testing, Table 2 represents the results (per sample) of all four multilevel models in predicting knowledge hiding. Pseudo R^2 by Snijders and Bosker (2012) and deviance are also reported at the end of Table 2.

‘Place Table 2 here’

Vietnamese sample. First, knowledge hiding was added as the outcome variable (Model 1) and it was tested if there was any difference at the group level, to confirm the necessity of multilevel modeling. The chi-square test was statistically significant ($\chi^2 = 33.38, p < .05$), indicating that there was variance in knowledge hiding by the higher-level grouping. Therefore, multilevel modeling was needed.

Second, we inserted openness to experience as a level-1 predictor variable to knowledge hiding, along with gender, age and working tenure as control variables (Model 2). Hypothesis 1 proposed that openness to experience had a negative effect on knowledge hiding. However, based on the results, this relationship was not statistically significant ($\gamma = -.07, SE = .16, p = .65$). Hypothesis 1 was therefore not supported by the Vietnamese sample.

Third, the communal sharing and market pricing climates were added to test the cross-level effects of level 2 towards the outcome variable (Model 3). The coefficients of the communal sharing and market pricing climates were both significant ($\gamma = -0.60$, $SE = .24$, $p = .023$; $\gamma = .60$, $SE = .27$, $p = .041$, respectively). Communal sharing climate related negatively to knowledge hiding, whereas market pricing climate related positively to knowledge hiding.

Fourth, in Model (4) a random intercepts and slopes model was used to test the interactions of openness to experience and both the communal sharing and market pricing climates towards knowledge hiding. Hypothesis 2 stated that there is a negative relationship between openness to experience towards knowledge hiding and a communal sharing climate would strengthen this relationship. As presented in Table 2, the interaction term between openness to experience and communal sharing climate was marginally significant ($\gamma = -.66$, $SE = .35$, $p = .064$). Given the marginally significant result, simple-slopes tests were conducted with the online tool developed by Preacher, Curran, and Bauer (2006). The lower and upper values were set at 1 standard deviation above and below the mean. For communal sharing, the simple slope was not significant at either the lower or higher bound, ($w(1) = -3.11$, $SE = 1.62$, $t = -1.92$, $p = .058$, $w(2) = -3.74$, $SE = 1.96$, $t = 1.91$, $p = .059$, respectively)¹. Figure 2 (from HLM) displays the model. Hypothesis 2 was therefore not supported.

‘Place Figure 2 here’

Regarding market pricing climate, Hypothesis 3 argued that people will hide more knowledge under higher levels of market pricing climate and higher levels of openness to experience.

Results showed that the interaction term between openness to experience and market pricing

¹ We also conducted the regions of significance computation. The slopes' significance regions went from .56 for the lower region to 1.27 for the upper region. Simple slopes are significant outside this region.

climate was positive, and the effect was statistically significant ($\gamma = .69, SE = .19, p < .001$).

Simple-slopes tests were conducted using the same procedure as explained above. Simple-slopes test showed significant results at both the lower and upper bounds ($w(1) = 2.24, SE = .62, t = 3.60, p = .0005$ and $w(2) = 2.99, SE = .83, t = 3.61, p = .0005$, respectively)². Figure 3 displays this result and, hence, Hypothesis 3 was supported for the Vietnamese sample.

‘Place Figure 3 here’

Dutch sample. The exact same procedure as in the Vietnamese sample was used for the Dutch sample, so as to keep the results comparable. First, knowledge hiding was added as the dependent variable (Model 1). The chi-square test was statistically significant ($\chi^2 = 47.75, p < .05$). The necessity of multilevel modeling was confirmed by this, as there was variance in knowledge hiding by the higher-level grouping.

Then, openness to experience was added as a level-1 predictor variable of knowledge hiding, along with the control variables (Model 2). The results did not support the assertion that openness to experience had a negative effect on knowledge hiding ($\gamma = -.07, SE = .09, p = .45$). Hypothesis 1 was therefore not supported.

To examine the cross-level main effects of relational climate, both communal sharing and market pricing climates were added in the model (Model 3). The coefficients of both the communal sharing and market pricing climates were not significant ($\gamma = -0.04, SE = .10, p = .68; \gamma = .24, SE = .12, p = .056$, respectively).

Next, we tested the interaction effects of openness to experience and both relational climates on knowledge hiding (Model 4). Hypothesis 2 stated that there is a negative relationship between

² We also conducted the regions of significance computation. The slopes' significance regions went from $-.22$ for the lower region to $.56$ for the upper region. Simple slopes are significant inside this region.

openness to experience and knowledge hiding, with communal sharing climate strengthening this relationship. As shown in Table 2, the interaction term between openness to experience and communal sharing climate was negative and significant ($\gamma = -.24$, $SE = .12$, $p = .044$). Simple-slopes tests, following the same procedure as in the Vietnamese sample, revealed significant results at both the lower and upper bounds ($w(1) = -1.15$, $SE = .52$, $t = 2.21$, $p = .029$, and $w(2) = -1.43$, $SE = .66$, $t = 2.94$, $p = .032$, respectively)³. Figure 4 displays the model. Hypothesis 2 was therefore supported for the Dutch sample.

‘Place Figure 4 here’

Hypothesis 3 stated that people would hide more knowledge under higher levels of market pricing climate and higher levels of openness to experience. Results showed that the interaction term between openness to experience and market pricing climate was not statistically significant ($\gamma = .04$, $SE = .12$, $p = .751$). Therefore, Hypothesis 3 was not supported by the Dutch sample. Table 3 contains an overview for all hypotheses of whether they were supported or rejected in both samples.

Additional analyses

We decided to check how our analysis would turn out if both samples (Vietnamese and Dutch) were merged into one large sample with the country being used as a control variable. Following the same procedure as before, knowledge hiding was added as the dependent variable. The chi-square test was statistically significant ($\chi^2 = 156.24$, $p < .01$) and thus, the necessity of multilevel modeling was confirmed.

³ We also conducted the regions of significance computation. The slopes' significance regions went from -17.38 for the lower region to .27 for the upper region. Simple slopes are significant inside this region.

Openness to experience was added as a level-1 predictor variable of knowledge hiding, along with the control variables. The results did not support the hypothesis that openness to experience had a negative effect on knowledge hiding ($\gamma = -.07$, $SE = .09$, $p = .46$). Hypothesis 1 was therefore not supported.

Both communal sharing and market pricing climates were then added to the model. The coefficient of communal sharing climate towards knowledge hiding was not significant ($\gamma = -.17$, $SE = .11$, $p = .13$), whereas the coefficient of market pricing climate was significant ($\gamma = .33$, $SE = .14$, $p = .02$). The interaction effects of openness to experience and both relational climates were regressed on knowledge hiding. Hypothesis 2 stated that there would be a negative relationship between openness to experience and knowledge hiding, with communal sharing climate strengthening this relationship. The interaction term between openness to experience and communal sharing climate was negative and significant ($\gamma = -.28$, $SE = .14$, $p = .04$). Simple-slopes tests, following the same procedure as before, revealed significant results at both the lower and upper bounds ($w(1) = -1.23$, $SE = .49$, $t = -2.52$, $p = .013$, and $w(2) = -1.76$, $SE = .71$, $t = -2.49$, $p = .014$, respectively)⁴. Hypothesis 2 was therefore supported.

Hypothesis 3 stated that people would hide knowledge more under higher levels of market pricing climate and higher levels of openness to experience. Results showed that the interaction term between openness to experience and market pricing climate was positive and statistically significant ($\gamma = .32$, $SE = .13$, $p = .012$). Simple-slopes tests showed significant results at both the

⁴ We also conducted the regions of significance computation. The slopes' significance regions went from -2.15 for the lower region to .24 for the upper region. Simple slopes are significant outside this region.

lower and upper bound ($w(1) = 1.17$, $SE = .51$, $t = 2.29$, $p = .023$, and $w(2) = 1.77$, $SE = .74$, $t = 2.38$, $p = .019$, respectively)⁵. Thus, Hypothesis 3 was supported.

Discussion

Building on personality traits theories (Pervin, 2003), contextual theory (Johns, 2006) and Relational Model Theory (Fiske, 1992), the present study investigated antecedents of knowledge hiding by examining the role of openness to experience as well as the interaction between openness and context, namely communal sharing and market pricing relational climates. Our research question was: To what extent do these two team-level relational climates moderate the relationship between individual-level openness to experience and knowledge hiding? Multilevel modeling was applied using two distinct samples (from Vietnam and the Netherlands). In both samples, the personal characteristic of openness to experience did not significantly predict knowledge hiding. A non-hypothesized but significant negative cross-level relationship between communal sharing and knowledge hiding, and a positive cross-level relationship between market pricing climate and knowledge hiding were found in the Vietnamese sample. These results were not replicated in the Dutch sample.

Regarding the moderating effects of both climates, the Vietnamese and Dutch samples yielded different results. In the Vietnamese sample, no moderation was found between communal sharing climate and openness to experience towards knowledge hiding. Market pricing climate, however, acted as moderator. Specifically, at higher levels of openness to experience and higher levels of market pricing climate, people were found to hide knowledge significantly more. In contrast, in the Dutch sample we found evidence supporting a moderating effect on the

⁵ We also conducted the regions of significance computation. The slopes' significance regions went from -2.96 for the lower region to .24 for the upper region. Simple slopes are significant outside this region.

relationship between openness to experience and knowledge hiding, for communal sharing climate but not for market pricing climate. Particularly, at higher levels of communal sharing climate and lower levels of openness to experience, people were found to hide knowledge more.

Theoretical contributions

Strategies and tools to make full use of knowledge among employees are crucial to any organization's knowledge management process and systems in order to gain and retain competitive advantage (Ferraris et al., 2017). Among these, minimizing knowledge hiding is considered one of the main challenges (Connelly et al., 2012). Our findings contribute to the knowledge and general management literatures dealing with this phenomenon in two ways.

In terms of our first aim, this study provides a better understanding of the personality characteristic openness to experience specifically as it relates to knowledge hiding (Pan et al., 2018). Even though highly open people have been described as individualistic (McCrae & Sutin, 2009), interrupting the harmonious relationship in the workgroup (Lun & Bond, 2006) and negatively correlating to how well team members get along with each other (Stewart, Fulmer, & Barrick, 2005), empirical and theoretical findings in an educational context have shown that openness to experience is negatively related to knowledge withholding intentions through social identity (Sheng Wang et al., 2014). Our results supported this direct relationship neither in Vietnam nor in the Netherlands. Even if these findings were not conclusive, it may be the case that knowledge hiding is indeed a situational characteristic, as theorized by Connelly et al. (2012), and as such needs an activator, which can be found in an organizational context such as a climate (Tett & Burnett, 2003). This speculation is partially supported by our finding that climates can indeed interact with openness to experience to affect knowledge hiding behavior. Moreover, the characteristics of openness to experience (e.g., highly tolerant, accepting of

different opinions; (Sheng Wang et al., 2014) may be reflected in more creative individuals who seek out new independent ways of exploration and expression (Judge & Zapata, 2015). This independent creativity in turn may be rather different from more negative behaviors such as knowledge hiding (Simha & Parboteeah, 2019), thus in a way mitigating or preventing unethical behavior.

In terms of our second aim, the theoretical contribution of the current study lies in the moderating roles of the communal sharing and market pricing climates in interaction with openness to experience towards knowledge hiding. As knowledge hiding is a situational behavior (Černe et al., 2014; Connelly et al., 2012), it might be the case that the behavior will be shown only under a certain trait supported by the right or appropriate context (Connelly et al., 2019; Johns, 2006; Serenko & Bontis, 2016). Such a combination can also be reflected in a situation of fit vs. non-fit between context and individual (Cable & Edwards, 2004), which carries important theoretical implications with it for the knowledge hiding phenomenon. To tackle this issue we used a multi-level framework, where climate was treated as a bottom-up emerging phenomenon (Batistič et al., 2016). Overall, our results support the notion that the interaction between individual and context is important in predicting knowledge hiding; however, it also emphasizes that the story behind the results might be more complicated than proposed in the first place. The market pricing climate had a significant impact on the relationship between openness to experience and knowledge hiding only in the Vietnamese sample. Individuals were found to hide more knowledge under high openness to experience and market pricing climate. On the contrary, the communal sharing climate had a significant moderating role only in the Dutch sample, where more knowledge hiding was found under low openness to experience and high communal

sharing climate. These divergent results might result from different characteristics of each country's national culture (Brock et al., 2005), a possibility that we will elaborate upon below.

Brock et al. (2005) argue that there might be a spillover of national culture, norms and beliefs to a more localized organization culture. Some authors go even further, arguing that national culture can actually constrain the organizational culture by providing accepted rules of how one should behave, and argue that the national culture can explain as much as 43% of organizational culture (Gerhart, 2009).

Thus looking at our case, Parks and Vu (1994) argued that the Vietnamese culture is likely to be defined as highly collectivist since it holds characteristics similar to other very collectivistic societies. Specifically, Asian cultures generally score highest on collectivism scales (Triandis, 1989). In addition, an underdeveloped rural nation, such as Vietnam, depicts a close-knit social context that might arouse employees' cooperative orientation where the focus is on the greater good of the team (Kagitcibasi & Berry, 1989). On the other hand, Dutch culture has been found to be rather individualistic (Eugène et al., 2017). Therefore, participants in this study, due to their culture, might perceive relational climates differently and be influenced by them in a divergent way (cf. Ferraris et al., 2019, who found different moderating effects for individualistic [Italian] vs. collectivist [Brazilian] cultures in the area of marketing).

The philosophy of a market pricing climate, which indicates the equivalent reciprocation of physical and non-physical rewards (Fiske, 1992), contradicts with the values of collectivism that prioritizes the group's needs over the individuals. However, it seems that under low openness to experience, people are more sensitive to the influence of context. The feature of proportionality in the social relations under this climate (Fiske, 1992) could activate the "intellect" and quick adaptation side (Goldberg, 1990) in people high on openness, which makes them take into

account the cost-benefit ratio before deciding to share or conceal the knowledge they possess. In addition, the principles that are represented in a communal sharing climate, such as altruism and community interest (Fiske, 1992), are opposed to the values of individualism, where the priority of employees is their own interest and not the group. Hence, the findings that in an individualistic culture (such as the Netherlands) employees with low openness to experience hide more knowledge under high communal sharing climate are in alignment with the above line of reasoning, since knowledge hiding might be perceived as a means for personal success or keeping resources (Černe et al., 2014).

On top of national culture, a different factor that might explain why some hypotheses were not supported in both samples may be the measurement scale used for knowledge hiding. While this instrument represents a cumulative measure, knowledge hiding is composed of three dimensions – playing dumb, evasive hiding and rationalized hiding (Fong, Men, Luo, & Jia, 2018). More specifically, hiding knowledge can be associated with pretending to be ignorant (playing dumb), wanting to postpone the answer for tactical reasons (evasive hiding) and/or a desire to maintain confidentiality (rationalized hiding) (Webster et al., 2008). Although such behaviors may be viewed as mostly negative, the intention (e.g., confidentiality) may not necessarily be to harm a colleague, it may even be the opposite (Connelly & Zweig, 2015). Perhaps highly open people would be more inclined to engage in evasive hiding than in playing dumb or rationalized hiding. Moreover, it could be the case that in a communal sharing climate people would play dumb (to save face) more often than show evasive or rationalized knowledge hiding, compared to people in a market pricing climate. Investigating such potential interactions of the three dimensions underlying our measure with the personal and situational variables in the present study would however require more sophisticated analyses than our sample sizes would warrant.

Overall, our results indicate that knowledge hiding is indeed the result of an intricate combination of individual characteristics (e.g., openness to experience) and contextual factors (e.g., relational climate). The main message here is that we will need to deploy a person-by-situation approach to get the best possible picture of how knowledge hiding works in practice. We believe that this is an important message for knowledge management literature as it adds a further layer of complexity in understanding how organizations can best manage and exploit knowledge management processes in culturally diverse contexts (Del Giudice, Carayannis, & Della Peruta, 2012; Ferraris et al., 2017).

Practical implications

In today's fast-changing workplace, intentionally concealing knowledge from others might threaten the organization's competitive advantage. Our results emphasize the significant role of climate and personality in predicting knowledge hiding; however, there is no universal recommendation that would work in every context. Organizations need to carefully assess the interaction between openness to experience and relational climates in a case-by-case scenario. These suggestions are highly relevant especially to multinational organizations, where business units situated in different countries might need to take into consideration different context-specific situations.

In the case of Vietnam, organizations need to realize that the context (relational climates) seems to dominate over individual characteristics (Cable & Edwards, 2004). Accordingly, practical strategies should aim to decrease the market pricing climate irrespective of people's level of openness to experience, as people under low market pricing score consistently lower on knowledge hiding. For some sectors or professions with highly open people (such as education or services), the practical implications from the present study become even more salient and

extreme. Research by Tsay, Lin, Yoon, and Huang (2014) found that knowledge withholding is related to normative conformity, thus our results expand this notion and suggest that a climate related to cost-benefit exchanges, such as market pricing, might lead to higher knowledge hiding. To prevent this, organizations should aim to implement HR practices aimed at reducing such a cost-benefit oriented social-exchange environment (Mossholder et al., 2011). For example, downplaying the importance of various forms of rewards (both physical in terms of bonus, incentives, salary increase, and non-physical in terms of performance ratings or promotion criteria) might contribute to a weaker market pricing climate leading to lower knowledge hiding (Tett & Burnett, 2003).

In the Netherlands, the combination of relational climates and openness to experience is not so straightforward. As openness to experience is a stable characteristic, organizations might primarily want to change the context in place. Our results suggest that building a strong communal sharing climate might reduce knowledge hiding. The HR system is a crucial means by which managers can influence the relational climate (Mossholder et al., 2011). Furthermore, commitment HR practices can be linked to trust and cooperation (Collins & Smith, 2006). Mossholder et al. (2011) proposed that helping behaviors, as one of the key components of the communal sharing climate, will be less task focused, more person focused and occurring more frequently under commitment HR systems. Moreover, findings from the Dutch sample also revealed that people with low levels of openness to experience hide more knowledge under a high communal sharing climate (compared to when the communal sharing climate is low). Therefore, the optimal approach for organizations in the Netherlands might be to not only increase the level of communal sharing climate but also activate people's sense of openness to experience. Our results highlight an important notion that enhancing the communal sharing

climate might provide unique opportunities for personality trait expression. People prefer to work in cultures and climates similar to their personality (Tett & Burnett, 2003). Thus providing HR practices aimed at enhancing communal sharing climate might also cascade in enhancing individual openness to experience. Open individuals are more sensitive to rewards, returns and value they receive in exchange for the decision to hide or share knowledge (McCrae & Sutin, 2009; Wang et al., 2014).

Limitations and future research suggestions

As with all research, this study is not without limitations. First, we had a relatively small sample size of 20 and 32 teams for multilevel research (Maas & Hox, 2005) in Vietnam and the Netherlands. Therefore, we might not have enough statistical power in multilevel modeling to obtain accurate estimations for the hypothesized effects (Scherbaum & Ferreter, 2009). For example, Kreft (1996) suggested a minimum sample size of 30 groups for multi-level analysis. Yet, small sample sizes might be deemed appropriate for exploratory research (e.g., Wang et al., 2015), as we also see our study. Moreover, with medium effect sizes, we still achieved a statistical power of .70 (Scherbaum & Ferreter, 2009). The power issues need to be kept in mind however when interpreting and generalizing our findings. In this vein, our study also did not follow suggested statistical cut-off points for item deletion. We believe, similarly to many authors (e.g., Kopalle & Lehmann, 1997), that such an approach is tricky and can jeopardize scale integrity and comparisons with other studies using the same scale; moreover, item deletion requires extensive re-validation and re-reliability checks. We reported all scale issues in the sections above, so the reader can decide him/herself about the potential implications of such problems.

Second, our study adopted the survey method using self-reports, with cross-sectional data. Knowledge hiding is assumed to be a negative behavior (Connelly et al., 2012); consequently, people tend to underreport the true level of this undesirable behavior. Meta-analytical evidence suggests, however, that other-reported assessments of negative work behaviors might not capture unique and valid incremental variance beyond the self-reported variance (Berry, Carpenter, & Barratt, 2012). Nevertheless, we believe that complementing or expanding self-report measures with others might further enrich our understanding of this phenomenon. For example, a match or mismatch in perceptions of knowledge hiding between individuals and line managers might provide interesting insights into what organizations could do to lower knowledge hiding. As our study was cross-sectional, the causality inferred should be taken with caution. Further research is suggested to implement an experimental method or longitudinal data collection, which strengthens causal inferences and better captures participants' responses related to knowledge hiding and climate perceptions (Bogilović, Černe, & Škerlavaj, 2017; Černe et al., 2014). Additionally, one could argue that the measure of knowledge hiding cannot capture the frequency of phenomena; however, previously published research (e.g., Babič et al., 2019; Burmeister, Fasbender, & Gerpott, 2019; Černe et al., 2014; Wang et al., 2019) has successfully used it to measure the extent to which individuals hide knowledge. Furthermore, context theory researchers (cf. Johns, 2017) have called to explore discrete events, which can be seen as occurrences that vary in strength. Thus, exploring knowledge hiding incidents can help us further understand how the context in place can relate to various organizational processes.

Third, while the present study considers relational climate, other organizational, workplace and individual characteristics also could explain why and when individuals deliberately conceal knowledge from their colleagues. For example, leadership style (transformational vs.

transactional) or middle management approach can influence employee behaviors in terms of organizational commitment, job satisfaction and job involvement (Mester, Visser, Roodt, & Kellerman, 2003), which in turn might be related to knowledge hiding. In addition to antecedents, better examining the consequences of knowledge hiding would add value to this topic and knowledge management practices in general. Besides existing studies focusing on individual and team creativity (Bogilović et al., 2017; Černe et al., 2014) as well as voluntary turnover intentions (Serenko & Bontis, 2016) and sales performance (Wang et al., 2019), much more research is needed to explore the consequences of knowledge hiding. For example, to what extent does knowledge hiding influence individual and team performance? In terms of context, one might also consider the extent to which workers are afforded agency in their work and the extent to which workload pressures might disallow time for discretionary knowledge sharing, that is, might create a context in which knowledge hiding is somewhat inevitable. Another relevant avenue for further research in this area would be to add the organizational level to the individual and team levels that interplay to impact upon employees' knowledge hiding behavior.

Our final recommendation is to look at various facets of knowledge hiding. Our study mainly focused on general knowledge hiding and did not aim to distinguish its various dimensions. It cannot be assumed per se that failing to meet a request for knowledge is necessarily antisocial, dysfunctional, or indeed knowledge hiding at all. Employees in practice typically have to prioritize how they spend their working time and it may be a pro-functional decision to choose to discourage colleagues from asking for knowledge to be shared with them or indeed to not share knowledge, which might then be interpreted by management as knowledge hiding. As outlined above, however, knowledge hiding is composed of three dimensions – playing dumb, evasive hiding and rationalized hiding. It may be that these three dimensions have different consequences

and underlying mechanisms (Fong et al., 2018). For example, rationalized hiding may be more strongly related to positive intentions than the other two dimensions. Innovative knowledge management strategies focusing on identifying knowledge hiding behavior, especially its more positive dimensions, might lead to better organizational results than those based on yet another plea for more and better knowledge sharing initiatives. Further research should therefore help organizations make better sense of the full range of ways to apply knowledge management approaches with a view to achieving desired organizational outcomes.

Conclusion

In this study we explored to what extent team-level communal sharing and market pricing relational climates moderate the relationship between individual-level openness to experience and knowledge hiding. We found the direct relationship between openness to experience and knowledge hiding neither in Vietnam nor in the Netherlands. In the Vietnamese sample, only the market pricing climate acted as a moderator, with higher levels of openness to experience and higher levels of market pricing climate being related to higher knowledge hiding. In contrast, in the Dutch sample, the interaction between higher levels of communal sharing climate and lower levels of openness to experience was related to higher knowledge hiding. While our paper cannot offer conclusive evidence, clearly the moderating role of relational climate in explaining the effect of personality traits, such as openness to experience, on knowledge hiding deserves further investigation. It may be even more worthwhile to conduct such studies in the wider context of different national cultures, as comparing just two countries (Vietnam and the Netherlands) in the current study already yielded markedly different outcomes. We call upon our international colleagues to share their, and further our, collective knowledge.

References

- Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self - esteem in social identity and intergroup discrimination. *European Journal of Social Psychology*, 18(4), 317-334.
- Alavi, M., & Leidner, D. E. (2001). Knowledge management and knowledge management systems: Conceptual foundations and research issues. *MIS quarterly*, 107-136.
- Amiri, M., Farhoodi, F., Abdolvand, N., & Bidakhavidi, A. R. (2011). A study of the relationship between Big-five personality traits and communication styles with marital satisfaction of married students majoring in public universities of Tehran. *Procedia-social and behavioral sciences*, 30, 685-689.
- Anand, P., & Jain, K. K. (2014). Big Five personality types and knowledge hiding behaviour: A theoretical framework. *Archives of Business Research*, 2(5), 47-56.
- Babcock, P. (2004). Shedding light on knowledge management. *HR Magazine*, 49(5), 46-51.
- Babič, K., Černe, M., Connelly, C. E., Dysvik, A., & Škerlavaj, M. (2019). Are we in this together? Knowledge hiding in teams, collective prosocial motivation and leader-member exchange. *Journal of Knowledge Management*.
- Batistič, S., Černe, M., Kaše, R., & Zupic, I. (2016). The role of organizational context in fostering employee proactive behavior: The interplay between HR system configurations and relational climates. *European Management Journal*, 34(5), 579–588. doi: <http://dx.doi.org/10.1016/j.emj.2016.01.008>
- Baucus, M. S., Norton, W. I., Baucus, D. A., & Human, S. E. (2008). Fostering creativity and innovation without encouraging unethical behavior. *Journal of Business Ethics*, 81(1), 97-115.

- Berry, C. M., Carpenter, N. C., & Barratt, C. L. (2012). Do other-reports of counterproductive work behavior provide an incremental contribution over self-reports? A meta-analytic comparison. *Journal of Applied Psychology, 97*(3), 613-636. doi: 10.1037/a0026739
- Bock, G.-W., Zmud, R. W., Kim, Y.-G., & Lee, J.-N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS Quarterly, 87*-111.
- Boer, N.-I., Berends, H., & van Baalen, P. (2011). Relational models for knowledge sharing behavior. *European Management Journal, 29*(2), 85-97.
- Bogilović, S., Černe, M., & Škerlavaj, M. (2017). Hiding behind a mask? Cultural intelligence, knowledge hiding, and individual and team creativity. *European Journal of Work and Organizational Psychology, 26*(5), 710-723.
- Brislin, R. W. (1986). Research instruments. *Field Methods in Cross-cultural Research, 8*, 137-164.
- Burmeister, A., Fasbender, U., & Gerpott, F. H. (2019). Consequences of knowledge hiding: The differential compensatory effects of guilt and shame. *Journal of occupational and organizational psychology, 92*(2), 281-304.
- Cable, D. M., & Edwards, J. R. (2004). Complementary and supplementary fit: A theoretical and empirical integration. *Journal of applied psychology, 89*(5), 822.
- Cabrera, A., Collins, W. C., & Salgado, J. F. (2006). Determinants of individual engagement in knowledge sharing. *International Journal of Human Resource Management, 17*(2), 245-264.
- Černe, M., Hernaus, T., Dysvik, A., & Škerlavaj, M. (2017). The role of multilevel synergistic interplay among team mastery climate, knowledge hiding, and job characteristics in

- stimulating innovative work behavior. *Human Resource Management Journal*, 27(2), 281-299.
- Černe, M., Nerstad, C. G., Dysvik, A., & Škerlavaj, M. (2014). What goes around comes around: Knowledge hiding, perceived motivational climate, and creativity. *Academy of Management Journal*, 57(1), 172-192.
- Chuang, S.-H. (2004). A resource-based perspective on knowledge management capability and competitive advantage: An empirical investigation. *Expert Systems with Applications*, 27(3), 459-465.
- Collins, C. J., & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management journal*, 49(3), 544-560.
- Connelly, C. E., Černe, M., Dysvik, A., & Škerlavaj, M. (2019). Understanding knowledge hiding in organizations. *Journal of Organizational Behavior*, 40(7), 779-782. doi: 10.1002/job.2407
- Connelly, C. E., & Zweig, D. (2015). How perpetrators and targets construe knowledge hiding in organizations. *European Journal of Work and Organizational Psychology*, 24(3), 479-489.
- Connelly, C. E., Zweig, D., Webster, J., & Trougakos, J. P. (2012). Knowledge hiding in organizations. *Journal of Organizational Behavior*, 33(1), 64-88.
- Corr, P. J., & Matthews, G. (2020). *The Cambridge handbook of personality psychology*: Cambridge University Press.
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: How organizations manage what they know*. Boston: Harvard Business Press.

- Del Giudice, M., Carayannis, E. G., & Della Peruta, M. R. (2012). Culture and cooperative strategies: knowledge management perspectives *Cross-cultural knowledge management* (pp. 49-62): Springer.
- Demirkasimoglu, N. (2015). Knowledge hiding in academia: Is personality a key factor? *International Journal of Higher Education*, 5(1), 128.
- Demirkasimoglu, N. (2016). Knowledge Hiding in Academia: Is Personality a Key Factor? *International Journal of Higher Education*, 5(1), 128-140.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of management journal*, 50(1), 25-32.
- Eugène, L., Loredana, I., Mireia, F.-A., Sourbati, M., Maria, E., Monika, W. s., . . . Ioana, S. (2017). Ageing well? A cross-country analysis of the way older people are visually represented on websites of organizations for older people. *Journal of Comparative Research in Anthropology and Sociology*, 8(2, Winter), 63-83.
- Evans, J. M., Hendron, M. G., & Oldroyd, J. B. (2015). Withholding the ace: The individual-and unit-level performance effects of self-reported and perceived knowledge hoarding. *Organization Science*, 26(2), 494-510.
- Faraj, S., & Wasko, M. M. (2001). The web of knowledge: An investigation of knowledge exchange in networks of practice. *Paper submitted for publication*.
- Ferraris, A., del Giudice, M., Grandhi, B., & Cillo, V. (2019). Refining the relation between cause-related marketing and consumers purchase intentions: A cross-country analysis, *International Marketing Review*, 37(4), 651-669. <https://doi.org/10.1108/IMR-11-2018-0322>.

- Ferraris, A., Santoro, G., & Dezi, L. (2017). How MNC's subsidiaries may improve their innovative performance? The role of external sources and knowledge management capabilities. *Journal of Knowledge Management*, 21(3), 540-552. doi: 10.1108/JKM-09-2016-0411
- Fiske, A. P. (1992). The four elementary forms of sociality: Framework for a unified theory of social relations. *Psychological Review*, 99(4), 689.
- Fong, P. S., Men, C., Luo, J., & Jia, R. (2018). Knowledge hiding and team creativity: The contingent role of task interdependence. *Management Decision*, 56(2), 329-343.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50.
- French, J. R., Caplan, R. D., & Van Harrison, R. (1982). *The mechanisms of job stress and strain* (Vol. 7): New York: J. Wiley.
- Gerhart, B. (2009). How much does national culture constrain organizational culture? *Management and Organization Review*, 5(2), 241-259.
- Gerlitz, J., & Schupp, J. (2005). *Assessment of Big Five personality characteristics in the SOEP* (Research Notes 4). Berlin, Germany: German Institute of Economic Research.
- Goldberg, L. R. (1990). An alternative" description of personality": The big-five factor structure. *Journal of Personality and Social Psychology*, 59(6), 1216.
- Gosling, S. D., Rentfrow, P. J., & Swann Jr, W. B. (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in personality*, 37(6), 504-528.
- Guadagno, R. E., Okdie, B. M., & Eno, C. A. (2008). Who blogs? Personality predictors of blogging. *Computers in Human Behavior*, 24(5), 1993-2004.

- Gupta, B. (2008). Role of personality in knowledge sharing and knowledge acquisition behavior. *Journal of the Indian Academy of Applied Psychology, 34*(1), 143-149.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, NJ: Pearson Prentice-Hall.
- Haslam, N., & Fiske, A. P. (1999). Relational models theory: A confirmatory factor analysis. *Personal Relationships, 6*(2), 241-250.
- Hislop, D. (2003). Linking human resource management and knowledge management via commitment. *Employee relations*(25), 182–202.
- Hox, J. J. (2010). *Multilevel analysis. Techniques and applications* (2nd ed.). New York: Routledge.
- Huo, W., Cai, Z., Luo, J., Men, C., & Jia, R. (2016). Antecedents and intervention mechanisms: a multi-level study of R&D team's knowledge hiding behavior. *Journal of Knowledge Management, 20*(5), 880-897. doi: 10.1108/JKM-11-2015-0451
- Husted, K., & Michailova, S. (2002). Diagnosing and fighting knowledge-sharing hostility. *Organizational Dynamics, 31*(1), 60-73.
- James, L. R., Demaree, R. G., & Wolf, G. (1984). Estimating within-group interrater reliability with and without response bias. *Journal of applied psychology, 69*(1), 85.
- John, O. P., & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. *Handbook of personality: Theory and research, 2*(1999), 102-138.
- Johns, G. (2006). The Essential Impact of Context on Organizational Behavior. *Academy of Management Review, 31*(2), 386-408.

- Johns, G. (2017). Reflections on the 2016 Decade Award: Incorporating Context in Organizational Research. *Academy of Management Review*, 42(4), 577-595.
- Johns, G. (2018). Advances in the treatment of context in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior*, 5, 21-46.
- Judge, T. A., & Zapata, C. P. (2015). The person–situation debate revisited: Effect of situation strength and trait activation on the validity of the Big Five personality traits in predicting job performance. *Academy of Management Journal*, 58(4), 1149-1179.
- Kagitcibasi, C., & Berry, J. W. (1989). Cross-cultural psychology: Current research and trends. *Annual Review of Psychology*, 40(1), 493-531.
- Klein, H. J., & Lee, S. (2006). The effects of personality on learning: The mediating role of goal setting. *Human Performance*, 19(1), 43-66.
- Klein, K. J., & Kozlowski, S. W. J. (2000). From micro to meso: Critical steps in conceptualizing and conducting multilevel research. *Organizational Research Methods*, 3(3), 211-236.
- Konstantinou, E., & Fincham, R. (2011). Not sharing but trading: Applying a Maussian exchange framework to knowledge management. *Human Relations*, 64(6), 823-842. doi: 10.1177/00187267110388676
- Kopalle, P. K., & Lehmann, D. R. (1997). Alpha inflation? The impact of eliminating scale items on Cronbach's alpha. *Organizational Behavior and Human Decision Processes*, 70(3), 189-197.
- Kreft, I. G. G. (1996). *Are multilevel techniques necessary? An overview, including simulation studies*. Los Angeles: California State University. Unpublished manuscript.

- Krosgaard, M. A., Brodt, S. E., & Whitener, E. M. (2002). Trust in the face of conflict: The role of managerial trustworthy behavior and organizational context. *Journal of Applied Psychology, 87*(2), 312-319. doi: 10.1037/0021-9010.87.2.312
- Lance, C. E., Butts, M. M., & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did they really say? *Organizational Research Methods, 9*(2), 202-220.
- Lang, F. R., John, D., Lüdtke, O., Schupp, J., & Wagner, G. G. (2011). Short assessment of the Big Five: Robust across survey methods except telephone interviewing. *Behavior Research Methods, 43*(2), 548-567.
- Langford, P. H. (2003). A one-minute measure of the Big Five? Evaluating and abridging Shafer's (1999a) Big Five markers. *Personality and Individual Differences, 35*(5), 1127-1140.
- Lee, G. K., & Cole, R. E. (2003). From a firm-based to a community-based model of knowledge creation: The case of the Linux kernel development. *Organization science, 14*(6), 633-649.
- LePine, J. A., Colquitt, J. A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. *Personnel Psychology, 53*(3), 563-593.
- Lewin, K. (1951). *Field theory in social science: Selected theoretical papers* (Edited by Dorwin Cartwright.).
- Liu, Y., & DeFrank, R. S. (2013). Self-interest and knowledge-sharing intentions: the impacts of transformational leadership climate and HR practices. *The International Journal of Human Resource Management, 24*(6), 1151-1164.

- Lun, V. M. C., & Bond, M. H. (2006). Achieving relationship harmony in groups and its consequence for group performance. *Asian Journal of Social Psychology*, 9(3), 195-202.
- Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, 1(3), 86-92.
- Major, D. A., Turner, J. E., & Fletcher, T. D. (2006). Linking proactive personality and the Big Five to motivation to learn and development activity. *Journal of applied psychology*, 91(4), 927.
- Malik, O. F., Shahzad, A., Raziq, M. M., Khan, M. M., Yusaf, S., & Khan, A. (2019). Perceptions of organizational politics, knowledge hiding, and employee creativity: The moderating role of professional commitment. *Personality and Individual Differences*, 142, 232-237.
- Matzler, K., & Mueller, J. (2011). Antecedents of knowledge sharing: Examining the influence of learning and performance orientation. *Journal of Economic Psychology*, 32(3), 317-329.
- Matzler, K., Renzl, B., Müller, J., Herting, S., & Mooradian, T. A. (2008). Personality traits and knowledge sharing. *Journal of economic psychology*, 29(3), 301-313.
- McAdams, D. P. (2009). The moral personality *Personality, identity, and character: Explorations in moral psychology* (pp. 11-29).
- McCrae, R. R., & Sutin, A. R. (2009). Openness to experience. *Handbook of individual differences in social behavior*, 15, 257-273.
- McFerran, B., Aquino, K., & Duffy, M. (2010). How personality and moral identity relate to individuals' ethical ideology. *Business Ethics Quarterly*, 35-56.

- Mester, C., Visser, D., Roodt, G., & Kellerman, R. (2003). Leadership style and its relation to employee attitudes and behaviour. *SA Journal of Industrial Psychology*, 29(2), 72-82.
- Mills, A. J., Durepos, G., & Wiebe, E. (2010). *Encyclopedia of Case Study Research*. Thousand Oaks, California: SAGE Publications.
- Mossholder, K. W., Richardson, H. A., & Settoon, R. P. (2011). Human resource systems and helping in organizations: A relational perspective. *Academy of Management Review*, 36(1), 33-52.
- Murphy, K. R., & Lee, S. L. (1994). Personality variables related to integrity test scores: The role of conscientiousness. *Journal of Business and Psychology*, 8(4), 413-424.
- Neuman, G. A., Wagner, S. H., & Christiansen, N. D. (1999). The relationship between work-team personality composition and the job performance of teams. *Group & Organization Management*, 24(1), 28-45.
- Nguyen, N. T., & Biderman, M. (2013). *Predicting counterproductive work behavior from a bi-factor model of big five personality*. Paper presented at the Academy of Management Annual Meeting Proceedings.
- Pan, W., Zhang, Q., Teo, T. S., & Lim, V. K. (2018). The dark triad and knowledge hiding. *International Journal of Information Management*, 42, 36-48.
- Pan, W., Zhou, Y., & Zhang, Q. (2016). Does darker hide more knowledge? The relationship between machiavellianism and knowledge hiding. *International Journal of Security and Its Applications*, 10(11), 281-292.
- Parks, C. D., & Vu, A. D. (1994). Social dilemma behavior of individuals from highly individualist and collectivist cultures. *Journal of Conflict Resolution*, 38(4), 708-718.

- Peng, H. (2013). Why and when do people hide knowledge? *Journal of Knowledge Management, 17*(3), 398-415.
- Penney, L. M., David, E., & Witt, L. (2011). A review of personality and performance: Identifying boundaries, contingencies, and future research directions. *Human Resource Management Review, 21*(4), 297-310.
- Pervin, L. A. (1989). Persons, situations, interactions: The history of a controversy and a discussion of theoretical models. *Academy of Management Review, 14*(3), 350-360.
- Pervin, L. A. (2003). *The science of personality*: Oxford university press.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology, 88*(5), 879.
- Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of educational and behavioral statistics, 31*(4), 437-448.
- Rentfrow, P. J. (2010). Statewide differences in personality: Toward a psychological geography of the United States. *American Psychologist, 65*(6), 548-558. doi: 10.1037/a0018194
- Scherbaum, C. A., & Ferreter, J. M. (2009). Estimating statistical power and required sample sizes for organizational research using multilevel modeling. *Organizational Research Methods, 12*(2), 347-367.
- Semerci, A. B. (2019). Examination of knowledge hiding with conflict, competition and personal values. *International Journal of Conflict Management*.

- Serenko, A. (2019). Knowledge sabotage as an extreme form of counterproductive knowledge behavior: conceptualization, typology, and empirical demonstration. *Journal of Knowledge Management*, 23(7), 1260-1288. doi: 10.1108/JKM-01-2018-0007
- Serenko, A., & Bontis, N. (2016). Understanding counterproductive knowledge behavior: antecedents and consequences of intra-organizational knowledge hiding. *Journal of knowledge management*, 20(6), 1199-1224.
- Simha, A., & Parboteeah, P. K. (2019). The Big 5 Personality Traits and Willingness to Justify Unethical Behavior—A Cross-National Examination. *Journal of Business Ethics*, 1-21.
- Snijders, T. A. B., & Bosker, R. J. (2012). *Multilevel analysis: An introduction to basic and advanced multilevel modeling* (2nd edition). Los Angeles, CA: Sage.
- Srinivasan, S. S. (2009). Performance under requirements uncertainty: A personality perspective. *PACIS 2009 Proceedings*, 84.
- Staw, B. M., Bell, N. E., & Clausen, J. A. (1986). The dispositional approach to job attitudes: A lifetime longitudinal test. *Administrative Science Quarterly*, 56-77.
- Stewart, G. L., Fulmer, I. S., & Barrick, M. R. (2005). An exploration of member roles as a multilevel linking mechanism for individual traits and team outcomes. *Personnel Psychology*, 58(2), 343-365.
- Tett, R. P., & Burnett, D. D. (2003). A personality trait-based interactionist model of job performance. *Journal of Applied psychology*, 88(3), 500-517.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96(3), 506.

- Tsay, C. H.-H., Lin, T.-C., Yoon, J., & Huang, C.-C. (2014). Knowledge withholding intentions in teams: The roles of normative conformity, affective bonding, rational choice and social cognition. *Decision Support Systems, 67*, 53-65.
- Tumasjan, A., & Strobel, M. (2012). Why would I trust them? How relational climates moderate the effect of social cynicism on team trust. *Academy of Management Proceedings, 2012(1)*, 13178.
- van Baalen, P., van Dalen, J., & van Malsen, J. (2013). Relational model conflicts in knowledge sharing behavior.
- Vandenbosch, B., Saatcioglu, A., & Fay, S. (2006). Idea management: a systemic view. *Journal of Management Studies, 43(2)*, 259-288.
- Wang, S., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review, 20(2)*, 115-131.
- Wang, S., Noe, R. A., & Wang, Z.-M. (2014). Motivating knowledge sharing in knowledge management systems: A quasi-field experiment. *Journal of Management, 40(4)*, 978-1009.
- Wang, X. H. F., Fang, Y., Qureshi, I., & Janssen, O. (2015). Understanding employee innovative behavior: Integrating the social network and leader-member exchange perspectives. *Journal of organizational Behavior, 36(3)*, 403-420.
- Wang, Y.-S., Lin, H.-H., Li, C.-R., & Lin, S.-J. (2014). What drives students' knowledge-withholding intention in management education? An empirical study in Taiwan. *Academy of Management Learning & Education, 13(4)*, 547-568.

- Wang, Y., Han, M. S., Xiang, D., & Hampson, D. P. (2019). The double-edged effects of perceived knowledge hiding: empirical evidence from the sales context. *Journal of Knowledge Management*, 23(2), 279-296. doi: doi:10.1108/JKM-04-2018-0245
- Wasko, M. M., & Faraj, S. (2000). "It is what one does": Why people participate and help others in electronic communities of practice. *Journal of Strategic Information Systems*, 9(2-3), 155-173.
- Watson, S., & Hewett, K. (2006). A multi - theoretical model of knowledge transfer in organizations: Determinants of knowledge contribution and knowledge reuse. *Journal of Management Studies*, 43(2), 141-173.
- Webster, J., Brown, G., Zweig, D., Connelly, C. E., Brodt, S., & Sitkin, S. (2008). Beyond knowledge sharing: Knowledge withholding at work. In J. J. Martocchio (Ed.), *Research in personnel and human resources management* (Vol. 27, pp. 1-37). Bradford: Emerald Group Publishing.
- Williams, K. M., Nathanson, C., & Paulhus, D. L. (2010). Identifying and profiling scholastic cheaters: Their personality, cognitive ability, and motivation. *Journal of Experimental Psychology: Applied*, 16(3), 293.
- Xiong, C., Chang, V., Scuotto, V., Shi, Y., & Paoloni, N. (2019). The social-psychological approach in understanding knowledge hiding within international R&D teams: An inductive analysis. *Journal of Business Research*. doi: <https://doi.org/10.1016/j.jbusres.2019.04.009>

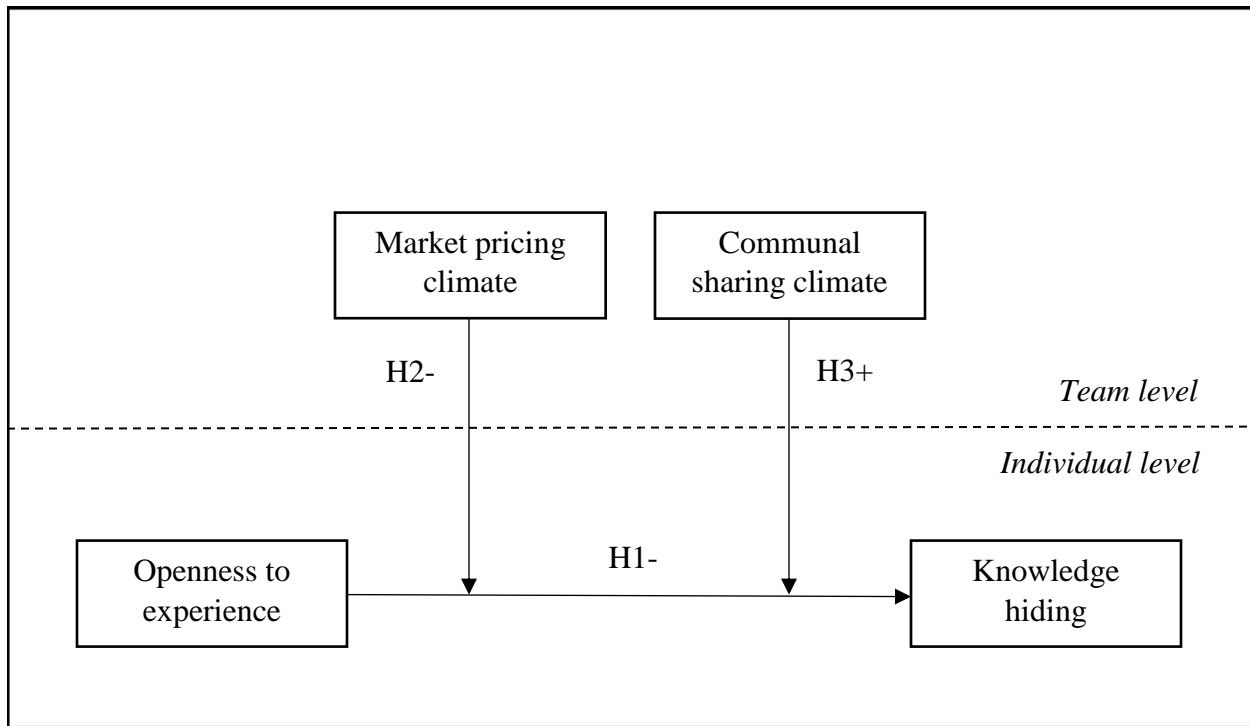


Figure 1. Conceptual model and hypotheses

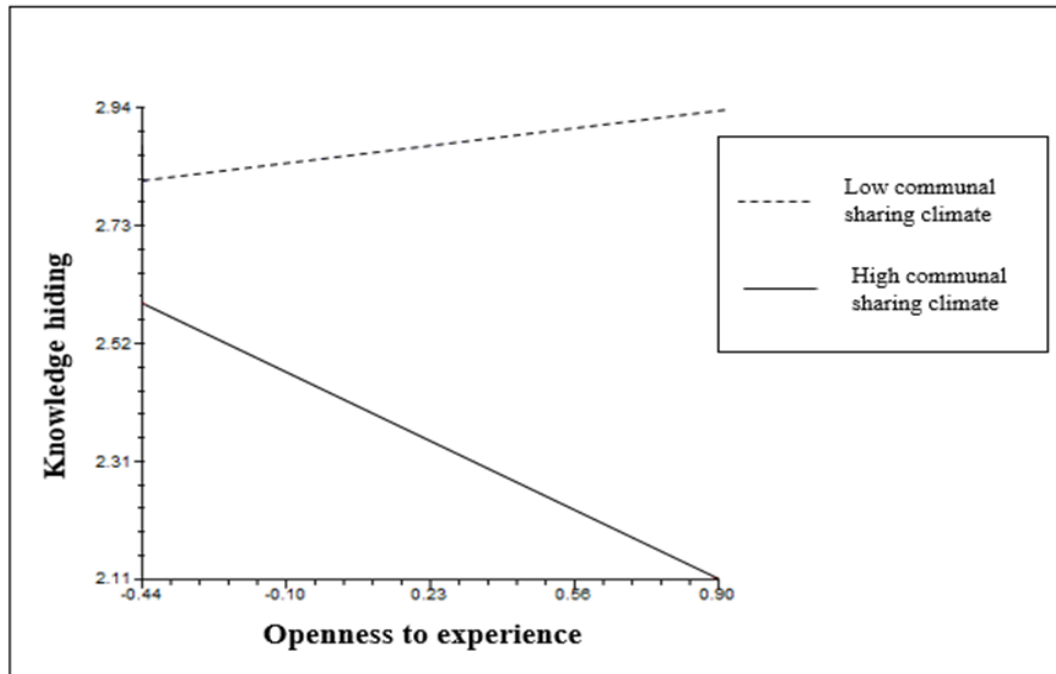


Figure 2. Cross-level interaction between openness to experience and communal sharing climate towards knowledge hiding in Vietnam

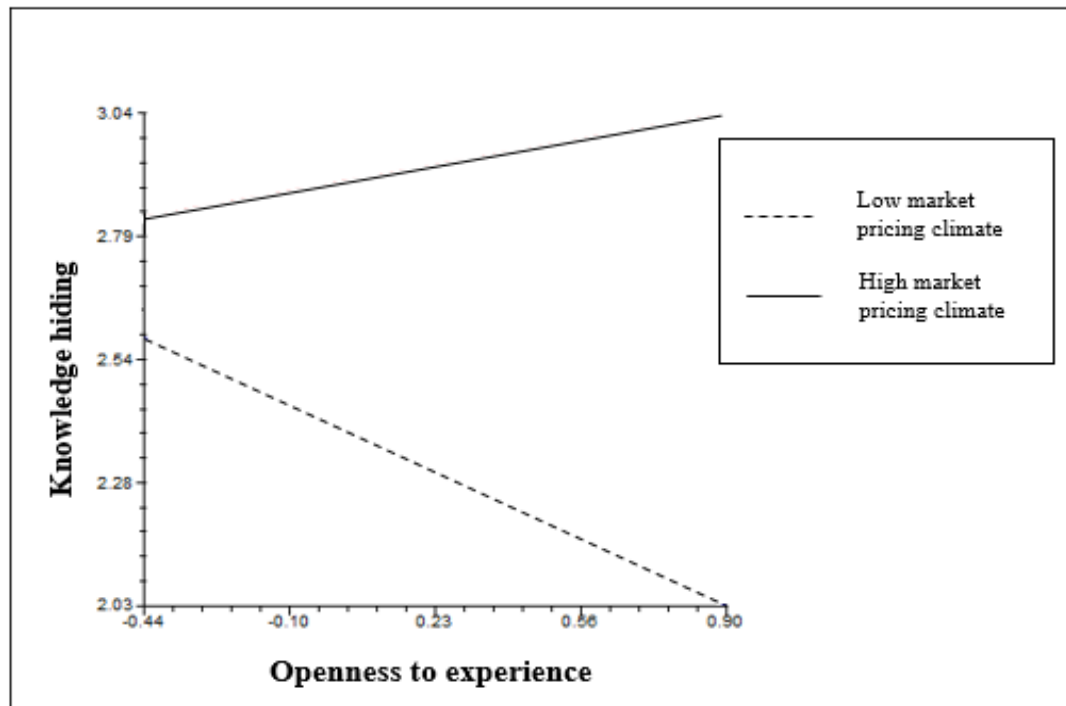


Figure 3. Cross-level interaction between openness to experience and market pricing climate towards knowledge hiding in Vietnam

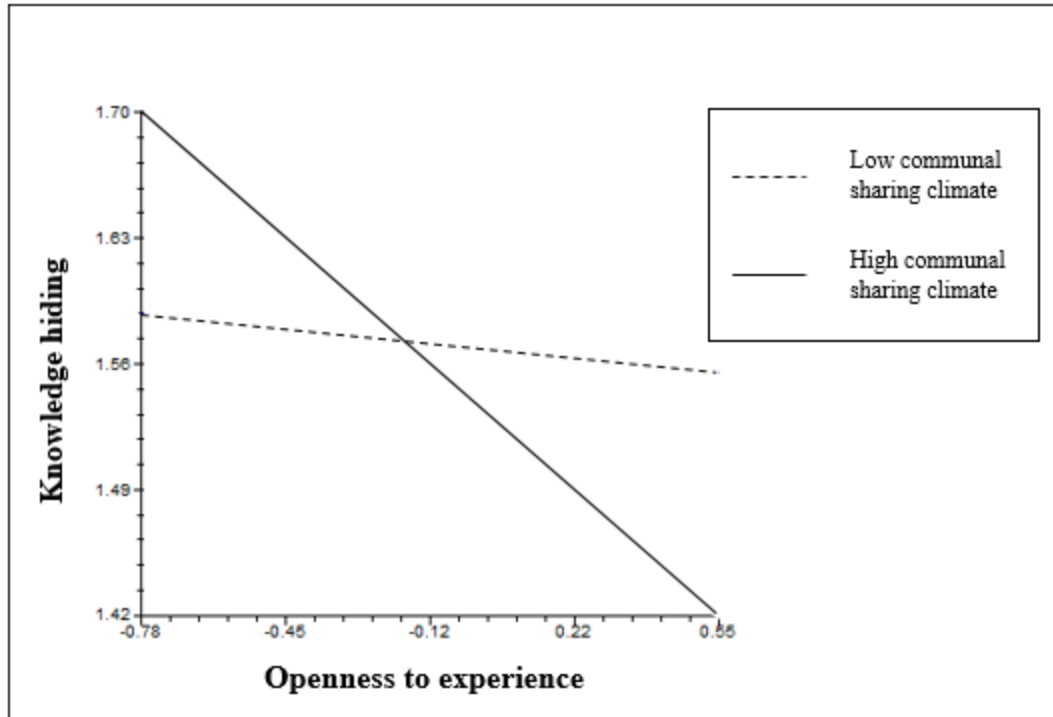


Figure 4. Cross-level interaction between openness to experience and communal sharing climate towards knowledge hiding in the Netherlands

Table 1
Means, standard deviations and correlations

Variables	Mean	SD	1	2	3	4	5	6	7
<i>Level 1 (Individual level)</i>									
Openness to experience	5.10/4.78	.92/.91	(.70/.46)	-.10	.09	.14	-.06	.13	-.06
Knowledge Hiding	2.64/1.54	1.25/.77	-.02	(.92/.87)	-.11	.12	-.15	-.22*	-.02
Communal sharing climate	4.95/5.15	.84/.87	.10	-.04	(.81/.79)	.16	.11	-.13	-.04
Market pricing climate	3.99/3.79	.96/.80	.01	.20*	.30**	(.83/.68)	-.03	-.06	.01
Gender			-.15	-.06	-.05	.04	-	-.20	-.08
Age	28.73/37.95	4.35/11.58	.32**	.09	.15	.09	-.13	-	.70**
Working Tenure	3.31/8.78	2.65/9.93	.23*	.13	.24**	.18*	-.14	.58**	-
<i>Level 2 (Team level)</i>									
Communal sharing climate	4.95/5.15	.48/.59	(.81/.79)	.10					
Market pricing climate	3.99/3.79	.55/.49	.61**	(.83/.68)					

Note. ^aCorrelations for the Vietnamese and Dutch samples are in the lower and upper triangles, respectively.

^bMeans and standard deviations for the Vietnamese and Dutch samples are reported on the left and right-hand sides of the slashes, respectively.

^c**Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed).

^dCoefficient alphas are on the diagonal in parentheses. On the left and right-hand sides of the slashes are the coefficient alphas of the Vietnamese and Dutch sample, respectively.

^eGender: male coded as 1 and female coded as 2. Relational climates at level 1 represent employee perceptions, whereas at level 2 they represent aggregated scores at the team level.

Table 2
Multilevel analysis results for knowledge hiding as dependent variable

	Vietnamese sample				Dutch sample			
	Model (1)	Model (2)	Model (3)	Model (4)	Model (1)	Model (2)	Model (3)	Model (4)
<i>Level 1</i>								
Intercepts	2.64(.14)**	2.64(.14)**	0.30(1.06)	2.63(.13)**	1.56(.08)**	1.56(.08)**	1.56(.08)**	1.56(.07)**
Gender		-.20(.19)	-.20(.20)	-.25(.20)		-.19(.22)	-.19(.22)	-.24(.17)
Age		-.02(.03)	-.02(.03)	-.01(.03)		-.02(.01)*	-.02(.01)*	-.02(.01)*
Tenure		.05(.04)	.05(.04)	.04(.04)		.01(.02)	.01(.02)	.01(0.1)
Openness to experience		-.07(.16)	-.07(.16)	-.14(.12)		-.07(.09)	-.07(.09)	-.09(.08)
<i>Level 2</i>								
Communal sharing			-.60(.24)*	-.60(.24)*			-.04(.10)	-.04(.10)
Market pricing			.60(.27)*	.60(.27)*			.24(.13)	.25(.13)
<i>Interaction effects</i>								
Openness to experience x Communal sharing				-.66(.35)				-.23(.12)*
Openness to experience x Market pricing				.69(.19)**				.04(.12)
Pseudo R ²		-.017	.001	.026		.016	.021	.036
Deviance	389.90	400.23	397.56	393.13	311.44	324.55	326.11	325.83
N (Level 1)	119	119	119	119	136	136	136	136
N (Level 2)	20	20	20	20	32	32	32	32

Note. ^a The results are the estimates of the fixed effects with robust standard errors. Vietnamese results are reported on the left-hand side, whereas Dutch results are reported on the right-hand side of the table.

^b * p-value <.05

** p-value < .01

Table 3

Overview of hypotheses and whether they were supported or rejected in both samples.

Hypothesis	Vietnamese sample	Dutch sample
H1: Openness to experience is negatively related to knowledge hiding.	Rejected	Rejected
H2: Communal sharing climate moderates the negative relationship between openness to experience and knowledge hiding behavior, in such a way that this relationship is stronger (more negative) under higher levels of communal sharing climate.	Rejected	Supported
H3: Market pricing climate moderates the negative relationship between openness to experience and knowledge hiding behavior, in such a way that this relationship is weaker (less negative) under higher levels of market pricing climate.	Supported	Rejected

APPENDIX 1: Knowledge hiding scale

Please think of a recent episode in which a specific co-worker requested knowledge from you and you declined to share your knowledge or expertise with him/her or did not give all of the information needed.

In this instance, I:

- Agreed to help him/her but never really intended to.
- Agreed to help him/her but instead gave him/her information different from what she/he wanted.
- Told him/her that I would help him/her out later but stalled as much as possible.
- Offered him/her some other information instead of what he/she really wanted.
- Pretended that I did not know the information.
- Said that I did not know, even though I did.
- Pretended I did not know what she/he was talking about.
- Said that I was not knowledgeable about the topic.
- Explained that I would like to tell him/her, but was not supposed to.
- Explained that the information is confidential and only available to people on particular project.
- Told him/her that my boss would not let anyone share this knowledge.
- Said that I would not answer his/her questions.

Source: Connelly et al. (2012).