Exploring the relationships of knowledge hiding with job autonomy, career motivation, and perceived communal sharing climate: A moderated mediation model

Master thesis Human Resource Studies

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Abstract

Since knowledge is a critical resource for organizational success, the knowledge management literature has been dominated by studies focusing on fostering knowledge sharing behavior. The current study expands this field of literature by examining factors that can influence knowledge hiding behavior. Drawing on the social exchange theory, this study proposed that career motivation mediates the relationship between job autonomy and knowledge hiding. Moreover, this study investigated the role of the perceived communal sharing climate as a moderator in the relationship between career motivation and knowledge hiding. A cross-sectional research was conducted, using a sample of 235 employees within 46 teams. The results indicate that career motivation is not predicted by job autonomy, and that job autonomy and career motivation are not related to knowledge hiding. Moreover, a perceived communal sharing climate does not influence knowledge hiding behavior of career motivated employees. The findings of this study contribute to the current knowledge management literature by examining unexplored relationships between job autonomy, career motivation, perceived communal sharing climate, and knowledge hiding behavior. Additionally, this study offers the opportunity for discussion and gives practical implications for organizations.

Keywords: knowledge hiding, career motivation, job autonomy, perceived communal sharing climate, social exchange theory.

Introduction

Ever since knowledge has been recognized as a critical organizational resource that can lead to sustained competitive advantage (Barney, 1991), scholars and practitioners share a strong interest in stimulating knowledge sharing among employees (Wang & Noe, 2010). As sharing knowledge can lead to beneficial outcomes, such as creativity (Perry-Smith, 2006) and increased employee and firm performance (Cummings, 2004), many organizations have focused on knowledge management systems that facilitate the collection, storage, and distribution of knowledge (Wang & Noe, 2010). While extensive research in the knowledge management literature has focused on finding contributing factors of knowledge sharing among employees, relatively little research has focused on examining why employees may hide knowledge from their coworkers (Connelly, Zweig, Webster, & Trougakos, 2012; Pan, Zhang, Teo, & Lim, 2018). Knowledge hiding is not simply the absence of sharing, but rather "an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person" (Connelly et al., 2012, p. 65). This definition emphasizes the importance of distinguishing knowledge hiding from knowledge sharing, as the motivations behind the constructs are rather different (Connelly et al., 2012; Pan et al., 2018). The impact that knowledge hiding can have on organizations has been shown by previous research, in which knowledge hiding impaired individual creativity (Černe, Nerstad, Dysvik, & Škerlavaj, 2014), reduced collaborations, and harmed individual and organizational performance (Peng, 2013). Because of the negative consequences of knowledge hiding, gaining more insight in what predicts this construct is a highly relevant issue. Recently, studies have found several antecedents of knowledge hiding, such as distrust (Černe et al., 2014), knowledge complexity (Connelly et al., 2012) and job insecurity (Serenko & Bontis, 2016). However, a comprehensive understanding of this construct is still lacking, as many possible antecedents are still unexplored. Therefore, this study focusses on unveiling factors that are related to knowledge hiding to gain a better understanding of this construct, and thereby contributes to reducing this gap in the knowledge management literature.

Deriving from knowledge management literature, attention is drawn to the lack of research that is conducted on the possible influence of motivational factors on knowledge transfer behavior (Bock, Zmud, Kim, & Lee, 2005). In essence, employees' decisions and behaviors can be explained by their underlying motivational factors (London, 1983). With regard to decisions and behaviors that are relevant to one's career, the construct of career motivation includes the individual characteristics and career choices that reflect a person's driving force in achieving career goals (London, 1983; Fang, Zhang, Mei, Chai, & Fan, 2018). It represents employees' motivation for long-term self- and career development (Van Rijn, Yang, & Sanders, 2013). Previous research has shown the importance of employees' career motivation, as it can lead to employee engagement, informal workplace learning, and knowledge sharing (Van Rijn et al., 2013). Since career motivated employees often depend on coworkers for accomplishing tasks (London, 1983), it could be that employees' career motivation also influences their decision in

terms of whether to engage in counterproductive work behaviors such as knowledge hiding. Therefore, this study will examine if highly career motivated employees are less likely to hide knowledge.

Furthermore, a significant amount of research has focused on job characteristics and their work related outcomes (Cabrera, Collins, & Salgado, 2006). Especially, work designs that include autonomy can positively influence employees' work decisions and behaviors (Hackman & Oldham, 1975; Cabrera et al., 2006). Hackman and Oldham (1975) define job autonomy as employees' freedom in choosing how and when to carry out work tasks. According to Foss, Minbaeva, Pedersen, and Reinholt (2009), a more comprehensive understanding is needed with respect to the effects of work design on knowledge transfer behavior. Since autonomy can enhance teamwork and social interaction (Gagné, 2009), it may also influences employees' behavior regarding knowledge hiding. Therefore, this study will examine if highly autonomous employees are less likely to hide knowledge. Additionally, as previous research pointed out the importance of job autonomy in positively predicting employees' motivation (Foss et al., 2009), job autonomy could also play a role in predicting career motivation. Since autonomy gives employees greater discretion in their work, this may facilitates employees to take action in achieving their desired career goals (Colakoglu, 2011). Therefore, this study will examine if highly autonomous employees are more likely to be career motivated. Based on these suggested direct relationships for the concept of knowledge hiding, this study also investigates the possible mediating role of career motivation between job autonomy and knowledge hiding behavior.

Moreover, several studies in the knowledge management literature point out a current gap in understanding the role of the organizational context in knowledge hiding behavior (Connelly et al., 2012). In essence, previous research argued that a relational climate can play an essential role in understanding employees' work behaviors and decisions (Mossholder, Richardson, & Settoon, 2011). Relational climates can be described as the perceptions and behaviors employees share that affect their interpersonal relationships (Mossholder et al., 2011). This study focusses on the communal sharing climate, which is about employee equivalence, solidarity, and trust (Batistič, Černe, Kaše, & Zupic, 2016). As previous research pointed out the importance of a communal sharing climate in predicting proactivity (Batistič et al., 2016) and helping behavior (Mossholder et al., 2011), it may also influences dyadic behaviors such as knowledge hiding. Since a communal sharing climate is characterized by a dense web of relationships, increased sense of reciprocity, and altruism (Mossholder et al., 2011; Fiske, 1992), it could be a fostering context for career motivated employees to hide less knowledge. Therefore this study will examine if highly career motivated people in a perceived communal sharing climate tend to hide less knowledge. Based on the above arguments, the aim of the study is expressed in the following guiding research question:

'*To what extent does career motivation mediate the relationship between job autonomy and knowledge hiding, and to what extent does perceived communal sharing climate moderate the relationship between career motivation and knowledge hiding'?*

By answering this research question, this study will gain a more comprehensive understanding of the factors that influence the relatively new construct of knowledge hiding, and thereby contribute to filling the existing gaps in knowledge management literature in several ways. First, this study answers to the calls to enrich existing knowledge hiding research with work- and motivational predictors. By including job autonomy and career motivation as antecedents of knowledge hiding, a deeper understanding of why employees hide knowledge will be obtained. Second, by examining the unexplored influence of perceived communal sharing climate on knowledge hiding, this study contributes to the knowledge management literature by gaining a deeper understanding of under what contextual circumstances employees hide knowledge. Third, as most research in the knowledge management literature is about knowledge sharing, the current study will bring back more balance in this field of study by focusing on knowledge hiding. Thereby, this study contributes to gaining a deeper understanding of the relationships between the relatively new construct of knowledge hiding and other constructs. Additionally, in practice, the results from this study can add valuable information for practitioners to better understand why employees hide knowledge, and therefore for improving knowledge management practices within organizations.

Theoretical framework

Job autonomy and knowledge hiding

According to Hackman and Oldham (1975), autonomy is defined as "the degree to which the job provides substantial freedom, independence, and discretion to the employee in scheduling the work and in determining the procedures to be used in carrying it out" (p. 162). The more autonomy someone has in their job, the more freedom that person has in choosing how, when, and where to carry out the job (Cabrera et al., 2006). According to the job characteristics model (Hackman & Oldham, 1975), job autonomy is one of the five core job characteristics (skill variety, task identity, task significance, autonomy, and feedback) that lead to three critical psychological states (meaningfulness of work, responsibility of outcomes, and knowledge of results), and in turn to individual outcomes. Morgeson and Campion (2003) extended this job characteristics model with social- and contextual factors that influence the relationships in the model. Both Morgeson and Campion (2003) and Hackman and Oldham (1975) have found a positive relationship between job autonomy and the critical psychological state of feeling more responsible for work outcomes. Several other studies have found positive relationships between job autonomy and other beneficial outcomes, such as knowledge sharing (Cabrera et al., 2006), performance (Morgeson, Delaney-Klinger, & Hemingway, 2005) and creativity (Spreitzer, 1995).

In contrast to these beneficial outcomes, knowledge hiding is seen as a less favorable workplace outcome. Knowledge hiding is a relatively new construct developed by Connelly et al. (2012), in which people withhold or conceal requested knowledge (Tang, Bavik, Chen, & Tjosvold, 2015). In particular, knowledge hiding occurs when a specific request for knowledge has been made by one employee to

another, and this request will not be fulfilled (Connelly et al., 2012). The biggest difference between knowledge sharing and knowledge hiding lies in the motivation behind the constructs (Connelly & Zweig, 2015). While a lack of knowledge sharing is because of the absence of the knowledge itself, knowledge hiding is an intentional attempt to withhold knowledge, which can be motivated by anti-social or instrumental drives (Connelly et al., 2012; Connelly & Zweig, 2015). Nonetheless, hiding knowledge is not necessarily intended to do harm (Connelly et al., 2012).

The way that job autonomy could be a possible antecedent of knowledge hiding can be explained through the following reasoning. In autonomous work environments, managers empower employees to handle issues regarding problem-solving independently (Černe, Hernaus, Dysvik, & Škerlavaj, 2017). Consequently, autonomous employees feel more responsible for their work outcomes (Hackman and Oldham, 1975) and may try to find more efficient ways to do their work (Pee & Lee, 2015). Therefore, autonomous employees often seek for better collaboration with their colleagues (Černe et al., 2017). This is in line with Gagné's (2009) argument that autonomous jobs usually enhance teamwork and communication to achieve their performance goals, as instructions from supervisors are minimized. Subsequently, it is expected that the opportunity to exchange knowledge will be increased, since employees spend more time together and communicate more frequently (Cabrera & Cabrera, 2005). Moreover, as increased social interactions often result in a shared language and closer relationships, employees may be less inclined to hide knowledge from their coworkers (Cabrera & Cabrera, 2005). In addition to the increased opportunity to exchange knowledge, autonomous employees may hide less knowledge to avoid that their colleagues reciprocate this behavior. Deriving from the social exchange theory, it is argued that employees often behave in a similar reciprocal way (Blau, 1964). In this way, autonomous employees may have to share knowledge with their colleagues to invoke similar behavior from them, which in turn is necessary for performing their own job to the best of their ability. Thus, as autonomy increases the opportunity and willingness to exchange knowledge, employees are expected to hide less knowledge from their coworkers, and therefore the following hypothesis is suggested:

Hypothesis 1. Job autonomy is negatively related to knowledge hiding.

Job autonomy and career motivation

Where a career consists of an employee's objective for participation in their work, and their subjective commitment to this, motivation is more about the direction and strength of the behavior of an individual (Leung & Clegg, 2001). Based on these two concepts, London (1983) has developed the concept of career motivation, which regards the driving forces of employees' decisions and behaviors regarding achieving individual career goals (Fang et al., 2018). London (1983) defined career motivation as "the set of individual characteristics and associated career decisions and behaviors that reflect the person's career identity, insight into factors affecting his or her career, and resilience in the face of unfavorable career conditions" (p. 620). These career decisions and behaviors include deciding to stay with an organization, reconsider career plans, develop oneself through training and new job experiences,

and setting and accomplishing career goals (London, 1983). Long-term employee development is central in career motivation (Van Rijn et al., 2013) and employees themselves are in charge of making their career development happen (Van der Sluis & Poell, 2003). In a study of Noe, Noe, and Bachhuber (1990), factors influencing career motivation were identified. They found that autonomy was positively related to career motivation in a way that employees have more work enthusiasm and self-esteem, which can lead to more interest in reaching their career goals (Noe et al., 1990).

In line with this, it is proposed in this study that job autonomy could be a possible antecedent of career motivation. In particular, by minimizing control over employees through increasing their autonomy, their perception of being autonomous and competent will be enhanced (Guay, Senécal, Gauthier, & Fernet, 2003). These perceptions can give rise to positive outcomes, such as increased motivation for optimal functioning (Guay et al., 2003) and therefore possibly to enhanced career motivation. Supporting this reasoning, previous research indicated that autonomy is an important predictor of employee motivation (Deci & Ryan, 2000). Because autonomous jobs allow employees to use a variety of skills (Noe et al., 1990) and give employees higher feelings of responsibility for the outcomes (Hackman & Oldham, 1975), it can lead to a higher job interest, commitment, and motivation (Noe et al., 1990). Additionally, according to Colakoglu (2011), autonomy gives employees the ability to influence their careers in a way that their career choices are congruent with their desired career needs. Greater discretion in their job allows employees to spend more time on other activities (Llopis & Foss, 2016), such as learning and development and training their full potential (Gist & Mitchell, 1992; Bandura, Adams, & Beyer, 1977). In this way, autonomy could enhance employees' person-career fit, which is described as the extent to which employees' competences, values and interests are in line with their career (Colakoglu, 2011). In essence, employees who have the ability and chance to do more in their career, are expected to be more motivated to do so (Morgeson et al., 2005). Taken together, therefore the following hypothesis is suggested:

Hypothesis 2. Job autonomy is positively related to career motivation.

Career motivation and knowledge hiding

The extent to which a person seeks opportunities for development and maintaining high performance levels to reach career goals, is part of someone's career motivation (London, 1993; Noe et al., 1990). Hiding less knowledge could be an important factor for achieving employees' career goals efficiently, based on the social exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). In particular, the way people behave toward another, will implicitly invoke similar reciprocal behavior (Černe et al., 2014). According to Cohen (1998), when employees participate in knowledge sharing, they will get access to the information and knowledge shared by other contributors in return. Applied to knowledge hiding, Černe et al. (2014) found that when employees hide knowledge from their coworkers, they end up hurting their own creativity and performance, because their coworkers reciprocate negatively through withholding knowledge as well. Deriving from a cost-benefit analysis, it

is proposed that people engage in behaviors of which they think it will bring them the best returns (Bordia, Irmer, & Abusah, 2006). In line with this, the perceived value of hiding less knowledge from a coworker needs to exceed the expected costs (Nebus, 1006). The benefits employees can get in return for hiding less knowledge include an enhanced reputation, status, job security, promotional prospects (Cabrera & Cabrera, 2005), and the creation of obligations for colleagues to reciprocate with help or valuable knowledge (Bordia et al., 2006). These are all factors that can help employees to achieve their desired career goals. In line with this, it is expected that highly career motivated people will hide less knowledge, because hiding knowledge may prevent them from gaining reciprocated valuable knowledge or other beneficial returns, which can help them to move their career forward. Despite the fact that some people may hide knowledge to gain personal competitive advantage, it is expected that hiding knowledge leads in the end to less favorable outcomes for that person (Černe et al., 2014), and therefore the following hypothesis regarding knowledge hiding is suggested:

Hypothesis 3. Career motivation is negatively related to knowledge hiding.

The mediating role of career motivation

In addition to the suggested direct negative effect of job autonomy on knowledge hiding, career motivation may function as a mediator in this relationship. As earlier mentioned, it is proposed that employees with job autonomy feel more competent (Guay et al., 2003), intrinsically motivated (Deci and Ryan, 2000), and experience more responsibility for their work outcomes (Hackman & Oldham, 1975). Together with the ability to enhance employees' person-career fit (Colakoglu, 2011), autonomy is therefore expected to enhance employees' career motivation. This positively suggested relationship between job autonomy and career motivation can in turn lead to less knowledge hiding. In essence, based on the social exchange theory (Blau, 1964), it is suggested that career motivated employees hide less knowledge in order to get beneficial returns from their colleagues, which may help them in achieving their career goals (Černe et al., 2014; Bordia et al., 2006). Although hiding knowledge could also create a competitive advantage, it is expected that career motivated employees are less inclined to engage in this behavior since it can simultaneously lead to the reciprocation of knowledge hiding behavior (Černe et al., 2014). Taken these suggested effects together, it is proposed that the more autonomy employees have, the more career motivated they are and in order to achieve their career goals, employees will hide less knowledge. Therefore, the following hypothesis is suggested:

Hypothesis 4. The relationship between job autonomy and knowledge hiding is mediated by career motivation.

The moderating role of perceived communal sharing climate

The organizational climate in which employees perform their work can play an important role in their decisions to either hide or share knowledge (Černe et al., 2014; Connelly et al., 2012). A climate can be seen as an abstraction of the environment that is based on employees' shared perceptions (Schulte,

Ostroff, Shmulyian, & Kinicki, 2009). According to Fiske (1992) and his theory of relational models, relational climate is defined as "shared employee perceptions and appraisals of policies, practices, and behaviors affecting interpersonal relationships in a given context" (Mossholder et al., 2011, p. 36). It provides employees with information about how interpersonal relationships can be understood, and includes shared norms and interactions among employees, which influence employee behaviors and decision making (Batistič et al., 2016). According to Fiske (1992), four distinct relational climates exist, namely communal sharing, equality matching, market pricing, and authority ranking. The present study will only include the communal sharing climate, because previous research indicated that this climate can stimulate positive employee behavior (Mossholder et al., 2011). In particular, Mossholder et al. (2011) argued that in a communal sharing climate, employees engage in more helping behavior because of the close relationships experienced. Since the present study is focused on exploring factors influencing knowledge hiding behavior, in order to decrease this behavior, a communal sharing climate could therefore be a fostering organizational context. Further explained, in a communal sharing climate, relationships are based on equivalence among a bounded group of people (Fiske, 1992) and others' welfare is often treated above self-concerns (Mossholder et al., 2011; Fiske & Haslam, 2005). In this kind of relationship, people are all treated as the same and the focus is on commonalities (Fiske, 1992), as in families (Ouchi, 1980). This leads to the experience for employees of a positive working climate where they feel supported and helped by their peers, feel safe in making mistakes, and where trust among each other is valued (Batistič et al., 2016).

The atmosphere created by a communal sharing climate is expected to enhance career motivated employees to hide less knowledge. In particular, Mossholder et al. (2011) state that by giving help to employees and by exchanging resources, positive emotions will flow and lead to an even more dense web of relationships. Subsequently, a good relational network increases a sense of reciprocity among employees (Mossholder et al., 2011). The exchange of ideas, information, and knowledge in this dense relational network can increase employees' career effectiveness, as it generates instrumental and relational benefits (Mossholder et al., 2011). Moreover, as Černe et al. (2014) state that employees behave in a similar reciprocal way, it is expected that when employees withhold knowledge from their coworkers they will invoke similar behavior (Černe et al., 2014). Especially in a communal sharing climate, where this counterproductive behavior is seen as non-solidary (Mossholder et al., 2011), employees are expected to receive less valuable returns, such as enhanced reputation and knowledge (Bordia et al., 2006). This in turn will hinder career motivated employees in their career. Indeed as argued by London (1983), reputation in the organization and expanding one's knowledge are important factors to reach career goals.

Additionally, alongside the potential beneficial gains that career motivated employees can receive from hiding less knowledge, it is also expected that in a perceived communal sharing climate employees hide less knowledge for altruistic reasons. Because employees in a perceived communal sharing relationship often feel as if they share some common substance, they will be more likely to act

based on altruism (Fiske, 1992). As Fiske (1992) also explains, a communal sharing climate is based on equivalence relations where people who belong to the same equivalence class are more likely to help each other, and where people contribute what they can without the need or obligation to get something in return. This is why people in a perceived communal sharing climate are more willing to unite and share their resources such as knowledge, which they treat as common (Fiske, 1992). Therefore it is suggested that employees will hide less knowledge from their coworkers, not only for the expected self-gains as described above, but for altruistic reasons as well. Taking together the abovementioned arguments, the following hypothesis regarding perceived communal sharing climate is suggested:

Hypothesis 5. Perceived communal sharing climate moderates the relationship between career motivation and knowledge hiding in a way that the higher the perceived communal sharing climate is, the stronger this negative relationship is.

Moderated mediation

In addition to the suggested mediating and moderating relationships, there may exist a relationship in which hypotheses 4 and 5 can be combined into a moderated mediation relationship. Specifically, it is proposed that the negative indirect relationship between job autonomy and knowledge hiding through career motivation, could differ at various levels of the perceived communal sharing climate. In particular, as a communal sharing climate is characterized by trust, close relationships, and support (Mossholder et al., 2011; Batistič et al., 2016), it is expected that this creates a fostering context in which autonomous employees dare to take career related actions and where these employees in turn hide less knowledge from their coworkers. Therefore, the following hypothesis regarding this moderated mediation relationship is suggested:

Hypothesis 6. Perceived communal sharing climate moderates the mediating relationship of job autonomy on knowledge hiding through career motivation in a way that the higher the perceived communal sharing climate is, the stronger this negative indirect relationship is.

Hence, deriving from the discussed literature and theories, Figure 1 proposes the conceptual model to be investigated in this study.

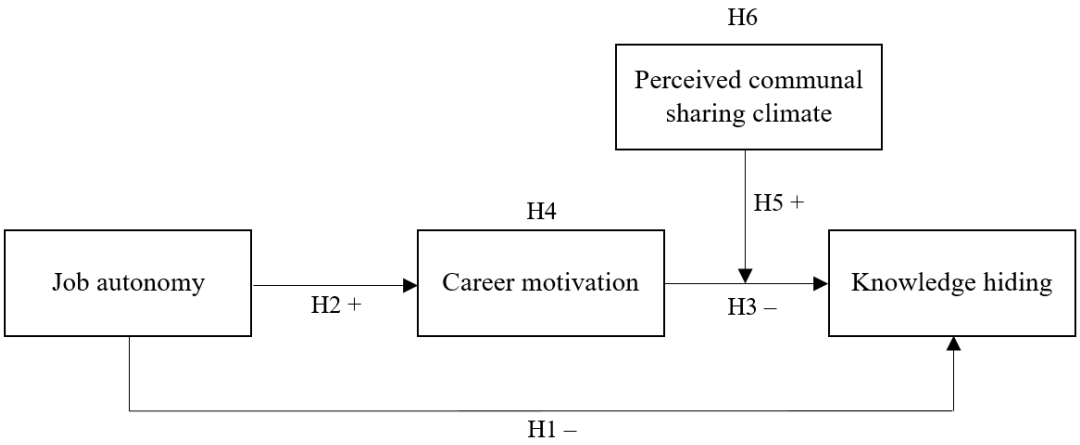

Figure 1. Conceptual model

Method

Research design

In order to test the hypothesized conceptual model a cross-sectional research design was used, meaning that data were only collected at one specific point in time. Five master students of Tilburg University who were in the same thesis circle, collected quantitative data together using an online survey. The reason for using a survey approach is that it provides the possibility of reaching many respondents in a short amount of time. This explanatory research aimed to test the hypothesized relationships between job autonomy, career motivation, perceived communal sharing climate and knowledge hiding, and was conducted on the individual employee level.

Sample

Data was obtained using a convenience sample, as each student used their own network in finding respondents. The minimum required sample size was calculated beforehand with the Monte Carlo power analysis tool (Schoemann, Boulton, & Short, 2017). Based on this tool, that has been specially developed for simple and complex mediation models, a minimum required sample size of 80 observations was determined ($p < .05$). However, with complex analyses such as moderated mediation, somewhat larger sample sizes are necessary to attain statistical power of .80, which is according to Cohen (1988) an appropriate power level for behavioral research. To meet this required sample size, each student gathered data from ten organizational teams, consisting of at least five employees and one line manager per team, and one HR expert per organization. The organizations that have been approached, represent a wide variety of sectors, including digital marketing, healthcare, and education. The response rate was 73%, resulting in a final sample of 235 employees, from 46 teams. 51% of the respondents were male, 46% were female, and 3% of the respondents did not indicate any gender. On average, respondents have been working for 11.44 years in their organization (SD = 11.50) and their average age was 41.81 (SD = 12.73). From the sample, 0% had an elementary education, 4.3% a basic education, 25.5% a middle education, 43.4% a higher education, 23.8% an academic education, and 3% did not indicate any educational level (SD = .82). These descriptive statistics are provided in Table 1.

Procedure

The representatives of the organizations were contacted to distribute the online questionnaires to the participants, through an email containing an URL. Different questionnaires were created in the software program Qualtrics for employees, line managers, and HR managers. The employee questionnaire consisted of 95 items and is attached in Appendix B. The questionnaire was prefaced by a cover letter, including a brief description of the study objectives, the instructions for filling in the questionnaire, and the insurance of the participants' anonymity in the results. This cover letter is attached in Appendix A. The participants could choose to fill in the questionnaire in English or Dutch. The

originally English items were translated into Dutch where necessary, using the backward translation method (Brislin, 1970). In this method the English items were translated into Dutch, and after that they were translated again back into English (Brislin, 1970).

Since knowledge hiding is a type of behavior that employees could perceive as socially undesirable, employees may underreport this behavior (Connelly et al., 2012). This social desirability bias is augmented in self-reported research designs and sensitive constructs, and can affect the validity of the research findings (King & Bruner, 2000). Therefore there is aimed to minimalize this bias by emphasizing employees' anonymity in the cover letter, and because the filled in questionnaires were sent directly to the master students.

Instruments

The following in the literature existing scales were used to measure the different variables. For each scale the Cronbach's alpha (α) from previous research and from the present study was reported, and evaluated based on the rules of thumb of George and Mallery (2003).

Knowledge hiding. Knowledge hiding was measured using the 12-item scale developed by Connelly et al. (2012). The instructions for the scale were: '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'. Additionally, the scale opened with 'in this specific situation, I…'. The items were measured on a 7-point Likert scale running from 1 'not at all' to 7 'to a very great extent'. A sample item is: 'Said that I did not know, even though I did'. Previous research reported that α = .89 (Černe et al., 2014), and this study found that α = .92, both indicating a good reliability (George & Mallery, 2003).

Career motivation. To measure the variable career motivation, the 17-item scale developed by London (1993) was used. The items were prefaced with the sentence: 'Please rate the extent to which you …'. Ratings were made on a 5-point Likert scale in which respondents could answer each item ranging from 1 'low' to 5 'high'. A sample item is: 'Have clear career goals'. London (1993) reported that α = .83, and this study found that α = .81, both indicating good reliability (George & Mallery, 2003).

Job autonomy. The variable job autonomy was measured using the 4-item scale developed by Van Veldhoven, Prins, Van der Laken, and Dijkstra (2014). The items were measured on a 4-point Likert scale ranging from 1 'always' to 4 'never'. A sample item is: 'Do you have autonomy when you pursue your tasks at work?' Previous research reported that α = .86 (Van Veldhoven, Dorenbosch, Breugelmans, & Van De Voorde, 2017), and the present study found that α = .85, which both indicate a good reliability (George & Mallery, 2003).

Perceived communal sharing climate. To measure perceived communal sharing climate, the 8-item scale developed by Haslam and Fiske (1999) was used. The respondents were asked to rate the statements from 1 'very untrue of this relationship' to 7 'very true of this relationship'. A sample item is: 'Many important things you use belong to the team, not to anyone separately'. Previous research

reported that $\alpha = .89$ (Batistič et al., 2016), and the present study found that $\alpha = .80$, which both indicate a good reliability (George & Mallery, 2003).

Control variables. In addition to the key variables in the conceptual model, the control variables age, gender, educational level and organizational tenure were included in this research. The reason for including these control variables is because of their possible relatedness with knowledge hiding, and based on previous relatedness in knowledge sharing or knowledge hiding research (Wang & Noe, 2010).

Analysis

Data screening and test for assumptions. After all data was inserted into IBM SPSS Statistics 24 software, frequencies were calculated to screen the data for any missing values. First, respondents with 50% or more missing values on the whole survey were excluded from the dataset to prevent any biased results. In the remaining dataset the missing values were all relatively low, with 6% or less, per variable (Bennett, 2001). Therefore, one appropriate way to deal with these missing values was to replace them with a single imputation method, namely Expectation Maximization (E-M) Algorithm (Bennett, 2001). This method is an iterative procedure that produces maximum likelihood estimates for the missing values (Graham, 2009). The E-M Algorithm method is preferred over other methods, such as mean substitution, because it is less biased in estimating variances and correlations (Schafer & Graham, 2002). An assumption for this technique is that the data need to be missing in a (completely) random way and does not depend on unobserved measurements, to avoid biased estimates (Bennett, 2001). A non-significant Little's MCAR test, $\chi^2(183) = 166.830$, $p = .796$, revealed that all data were missing (completely) at random. Since single imputation is not an appropriate method for replacing categorical variables (Schafer & Graham, 2002), the missing values of gender and education were recoded as -99 and pairwise excluded from the dataset, to retain useful scores on the other variables.

Subsequently, possible outliers and their impact on the data were detected in SPSS by checking the box-and-whisker plot, the Kurtosis value, and the mean and 5% trimmed mean for each variable. No problems were found for most of the variables. However, the knowledge hiding scale contained several outliers, which resulted in a non-normal distribution for this scale. As Connelly et al. (2012) stated, knowledge hiding is not a desirable behavior and it therefore tends to be an underreported low-base-rate event (Černe et al., 2014). Since this is common for research on counterproductive workplace behaviors (Berry, Carpenter, & Barratt, 2012), and because there was no clear indication that the outliers contained errors made by the respondents, the scores were treated as valuable for the analysis and thus it was decided to remain the original data.

Additionally, to assess the validity of the model, different regression diagnostics were used to explore the underlying statistical assumptions of linearity, multicollinearity, homoscedasticity, and normality (Warner, 2012). All variables were found to be heteroscedastic, and knowledge hiding and organizational tenure violated the assumption of normality. These violations of the assumptions have to be taken into account when interpreting the results.

Confirmatory factor analysis. An important next step was checking the content validity of the scales. Because the variables that are used in this study are based on existing scales, a confirmatory factor analysis (CFA) was used to confirm if the items were sufficiently loading on the scales, as previous research has indicated. This analysis was done in IBM SPSS Amos 25. In order to assess the results of the CFA, the chi-square test ($\chi 2$) for overall model fit was evaluated, and the following fit indices with established guidelines by Hu and Bentler (1999): standardized root mean square residual (SRMR) of .08 or below, root mean square error of approximation (RMSEA) of .06 or below, and comparative fit index (CFI) and Tucker-Lewis index (TLI) of .95 or higher. The baseline model without any modifications resulted in $\chi 2(773) = 2312.91$, CMIN/DF = 2.992 ($p < .01$), CFI = .67, TLI = .65, RMSEA = .09, SRMR = .09. This demonstrated an overall insufficient fit, as most fit indices did not meet the established thresholds.

After assessing the modification indices in the CFA output, an attempt was made to improve the model by specifying covariances. This resulted in a significant chi-square of $\chi 2(751) = 1458.841$, CMIN/DF = 1.943 ($p < .01$). A non-significant $\chi 2$ would normally indicate a good model fit (Iacobucci, 2010). However, as $\chi 2$ is sensitive to sample size, it will almost always be significant in large sample sizes ($n = \geq 200$) and indicating a poor fit (Iacobucci, 2010). Therefore, a model is suggested to demonstrate a reasonable fit when CMIN/DF ≤ 3 (Iacobucci, 2010), which was the case in this improved model. Subsequently, SRMR = .08, RMSEA = .06, and CFI and TLI were still just below the threshold for a good fit with .85 for CFI and .83 for TLI. However, since the other fit indices indicated a sufficient model fit, it was decided to proceed with this model without removing any items from the constructs. Consequently, this has to be taken into account when interpreting the results and drawing conclusions. The output of the CFA and the modifications that were made are displayed in Appendix C.

Common method variance. Since common method variance (CMV) is a potential problem in behavioral research (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the current model was tested for this bias. CMV refers to variance that is attributable to the measurement method, rather than to the construct the measures represent (Podsakoff et al., 2003). To test for this bias, a latent common method factor analysis was done in IBM SPSS Amos 25, by controlling for the effects of an unmeasured latent factor. The regression weights of the items were compared, both with and without the latent CMV factor in the model (Podsakoff et al., 2003). The results showed that there were no differences of more than .20 between the standardized regression weights of the baseline and constrained model. This indicated that common method variance did not affect the variables (Podsakoff, MacKenzie, & Podsakoff, 2012). An overview of the regression weights and the calculated differences is displayed in Appendix D.

Conditional process modelling. Next, the descriptive statistics were calculated, from which the demographic characteristics of the sample and the bivariate correlations could be attained. Finally, hypotheses were tested using conditional process modelling by Hayes PROCESS Macro (Hayes, 2013). The appropriate model template for this study is Model 14. A bootstrap-based procedure is used to make statistical inference about the direct, indirect, and moderation effects, and to test whether the indirect

effect differs from zero at specific values of the moderator (Hayes, 2015). By looking at the index of moderated mediation, there is checked if moderated mediation was present. In this bootstrap procedure, a 95% bootstrap confidence interval is generated by resampling the original data for 5,000 times (Hayes, 2015). For each bootstrap sample of the original data, the regression coefficients of the statistical model will be estimated (Hayes, 2015). Hayes (2015) recommends using this approach because it is high in power and it respects the possible non-normality of the sampling distribution, unlike other methods such as the Sobel test. In fact, the construction of a bootstrap confidence interval is already widely used in regression analysis (Hayes, 2018). Based on the bootstrap confidence intervals, statistical inferences can be made about the size and significance levels of the effects (Hayes, 2015). When zero is excluded from a bootstrap confidence interval, the direct or indirect effect is significant (Hayes, 2015).

Results

Descriptive statistics

The descriptive statistics, correlations and reliability indexes of all variables are provided in Table 1. As shown in the table, perceived communal sharing climate is positively related to career motivation ($r = .29$, $p < .01$), meaning that as employees' perceived communal sharing climate increases, their career motivation increases. Moreover, knowledge hiding and career motivation are negatively related ($r = -.14$, $p < .05$), which means that as employees' career motivation increases, their knowledge hiding behavior deceases.

Table 1

Descriptive statistics, scale reliabilities and correlations

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7	8
1. Perceived comm. sharing climate	235	4.91	.89	(.80)							
2. Career motivation	235	3.86	.40	.29**	(.81)						
3. Job autonomy	235	3.02	.59	.09	.11	(.85)					
4. Knowledge hiding	235	1.51	.80	-.12	-.14*	-.01	(.92)				
5. Age	235	41.81	12.73	-.15*	.06	.00	-.30**	-			
6. Gender (m)	228	-	-	.16*	-.09	-.26**	-.05	-.11	-		
7. Org. tenure	235	11.44	11.50	-.09	-.07	.10	-.19**	.67**	-.03	-	
8. Educational level	228	3.89	.82	-.12	-.06	.14*	.24**	-.26**	-.06	-.22**	-

Notes. Cronbach's alphas are on the diagonal in parentheses. For gender, 1 = male, 2 = female. For educational level, 1 = elementary education, 2 = basic education, 3 = middle education, 4 = higher education, 5 = academic education. *p < .05 (2-tailed), **p < .01 (2-tailed).

Hypothesis testing

Conditional process modelling was used to examine the proposed hypotheses. The results from this analysis are displayed in Table 2, and the complete output is attached in Appendix E. In model 1, where career motivation is presented as outcome variable, 5% of the variance in career is explained by job autonomy and the control variables. However, the overall fit of the model is not significant ($F(5, 221) = 2.19$, $p > .05$). Hypothesis 2 suggested that job autonomy is positively related to career motivation. Model 1 shows that job autonomy is not a significant predictor of career motivation ($b = .09$, $p > .05$), and therefore hypothesis 2 is not supported. Furthermore, hypothesis 4 suggested that career motivation mediates the relationship between job autonomy and knowledge hiding. However, since job autonomy is not a significant predictor of career motivation and since model 1 shows a non-significant model fit, hypothesis 4 is not supported either.

In model 2, where knowledge hiding is presented as outcome variable, 15% of the variance in knowledge hiding can be explained by the variables in the model, and this model fits the data well ($F(8, 218) = 4.71$, $p < .001$). However, by taking a closer look at the model, no key predictor variables are significantly related to knowledge hiding. Hypothesis 5 suggested that perceived communal sharing climate moderates the relationship between career motivation and knowledge hiding. For this moderation to be present, the interaction term in the model needs to be significant. The results show that the interaction term is not significantly related to knowledge hiding ($b = .01$, $p > .05$), so hypothesis 5 is rejected. Additionally, hypothesis 6 suggested that perceived communal sharing climate moderates the mediating relationship of job autonomy on knowledge hiding through career motivation. By the interaction term failing to be significant, this crucial first step of evaluating moderated mediation did not hold. Therefore, hypothesis 6 is not supported either.

Moreover, hypotheses 1 and 3 stated that job autonomy and career motivation are negatively related to knowledge hiding. Despite that model 2 shows that job autonomy ($b = -.04$, $p > .05$) and career motivation ($b = -.19$, $p > .05$) are negatively related to knowledge hiding, these effects are not significant. Therefore, hypothesis 1 and 3 are not supported. However some of the control variables in model 2 seem to be significantly related to knowledge hiding. Age is negatively related to knowledge hiding ($b = -.02$, $p < .01$), which indicates that as employees get older, they tend to hide less knowledge. Furthermore, educational level is positively predicting knowledge hiding ($b = .15$, $p < .05$), which means that employees with a higher educational level hide more knowledge.

In sum, the results of the analysis failed to support the proposed hypotheses, as the relationships lacked statistical significance. Despite this, some effects are found that were not hypothesized beforehand. Organizational tenure negatively predicts career motivation, and knowledge hiding is negatively predicted by age and positively predicted by educational level.

Table 2.

Conditional direct and indirect effects of job autonomy on knowledge hiding, mediated by career motivation, and moderated by perceived communal sharing climate.

Predictor variable	*B*	*SE*	*t*	R^2
Model 1: F(5, 221) = 2.19				.05
Main effect on the mediator variable: career motivation				
Intercept	-.16	.25	-.62	
Job autonomy	.09	.05	1.88	
Gender	-.04	.05	-.64	
Age	.01	.00	1.78	
Organizational tenure	-.01*	.00	-2.40	
Educational level	-.04	.03	-1.30	
*Model 2: F(8, 218) = 4.71****				.15***
Main effect on the dependent variable: knowledge hiding				
Intercept	1.96***	.50	3.93	
Job autonomy	-.04	.09	-.47	
Career motivation	-.18	.14	-1.30	
Perceived communal sharing climate	-.10	.06	-1.51	
Career motivation X Perceived communal sharing climate	.01	.13	.07	
Gender	-.11	.11	-1.05	
Age	-.02**	.01	-3.33	
Organizational tenure	.00	.01	.39	
Educational level	.15*	.07	2.31	
Moderated mediation analysis				
Bootstrap results for conditional indirect effect of job autonomy on knowledge hiding at values of the moderator (perceived communal sharing climate)				
Boot indirect effect	Effect	Boot SE	LL 95% CI	UL 95% CI
-.40 (-1SD)	-.02	.02	-.08	.01
0.00 (0SD)	-.02	.02	-.07	.00
.40 (+1SD)	-.01	.02	-.09	.01
Index of moderated mediation				
	.00	.01	-.03	.03

Notes. n = 227. Bootstrap sample size = 5000. LL, lower limit; CI, confidence interval; UL, upper limit. Centralized regression coefficients are reported. *p <0.05; **p <0.01; ***p <0.001.

Discussion

The current study aimed to gain a deeper understanding of factors that predict knowledge hiding behavior among employees in organizations. Drawing on the social exchange theory (Blau, 1964), this study examined the predicting role of employees' career motivation on knowledge hiding behavior. Additionally, the moderating role of a perceived communal sharing climate was investigated, which was proposed to strengthen this negative relationship between career motivation and knowledge hiding. Furthermore, it was investigated if job autonomy would decrease knowledge hiding behavior, and to what extent this relationship was mediated by employees' career motivation. In conclusion, the results demonstrated that no significant relationships between all variables were found. Nevertheless, and although not hypothesized, knowledge hiding was found to be negatively predicted by age and positively predicted by educational level, and organizational tenure negatively predicted career motivation.

Theoretical contributions

The results of this study contribute to the knowledge management literature in five ways. First, by introducing employees' career motivation as a predictor of knowledge hiding behavior, the results of this study expand the existing literature on knowledge hiding with a yet unexplored motivational factor. Based on the social exchange theory (Blau, 1964), the way that employees behave towards each other will implicitly invoke similar reciprocal behavior (Černe et al., 2014). Therefore, hiding knowledge could prevent career motivated employees from gaining reciprocated benefits and knowledge in return, useful for reaching career goals (Bordia et al., 2006). In line with this, it was hypothesized that career motivated employees would hide less knowledge. However, this hypothesis was not supported. A possible explanation for this result could be that although employees are career motivated, they may not be willing to share their knowledge due to some underlying lack of trust in their colleagues' knowledgeability (Sharratt, & Usoro, 2003). In particular, as career motivated employees are expected to hide less knowledge for reciprocal reasons, they have to trust colleagues to possess a certain level of competence to get valuable returns (Sharratt, & Usoro, 2003). Therefore, this competence-based trust could be an important underlying factor that influences the relationship between career motivation and knowledge hiding behavior. Additionally, another possible explanation for the insignificant result could be that employees do experience career motivation, but rather outside their current organization. In this way, a more boundaryless career path might be applicable (Colakoglu, 2011) and therefore employees do not feel the incentive to share knowledge with their colleagues.

Moreover, this study contributed to the knowledge management literature by examining the unexplored indirect influence of job autonomy on knowledge hiding, through career motivation. As autonomous jobs give employees greater discretion on how to perform their work tasks (Cabrera et al., 2006), employees are often more able to influence their career in the desired direction (Colakoglu, 2011). This ability to improve one's person-career fit was in turn expected to motivate employees to develop

their career (Colakoglu, 2011). Therefore, it was hypothesized that job autonomy is positively related to employees' career motivation. In contrast to previous findings (Noe et al., 1990), no significant relation was found between job autonomy and career motivation, and therefore also the mediating hypothesis of job autonomy on knowledge hiding, through career motivation was not supported. A possible explanation for the insignificant result could be that job autonomy indeed facilitates employees in reaching their career goals as proposed, but that it does not directly motivate employees to develop their career. As Llopis and Foss (2016) describe, before employees decide to expend effort on activities to develop themselves, they need to be motivated to do so. Hence, job autonomy may not capture this relationship with career motivation very well. Rather, career motivation is predicted by the intrinsic motivation employees have in developing their career, which is characterized by a desire to expend effort based on interest and enjoyment (Llopis & Foss, 2016). Moreover, intrinsically motivated people involve themselves more in activities that increase personal development (Foss et al., 2009; Deci & Ryan, 2000). In fact, employees could have the necessary tools for reaching their career goals, such as autonomy, but this may not be sufficient for motivating them in their career.

In addition to the indirect effect of job autonomy on knowledge hiding, this study examined the unexplored direct effect of job autonomy on knowledge hiding, thereby contributing to the existing knowledge management literature. It was hypothesized that job autonomy was negatively related to knowledge hiding. As autonomous work environments stimulate employees to handle problem-solving issues without managerial supervision, employees often seek for collaboration with their colleagues (Černe et al., 2017). This enhanced social interaction was expected to result in more willingness and opportunities to share information and knowledge among employees (Cabrera & Cabrera, 2005). However, this hypothesis was not supported and an explanation for this could be that, although employees have autonomy in their work, this does not simultaneously result in more social interaction (Buch, Dysvik, Kuvaas, & Nerstad, 2015). In fact, due to high amount of autonomy, employees could even experience a loss of social relationships which could lead to less knowledge sharing (Buch et al., 2015). Rather, Černe et al. (2017) argue that the amount of task interdependence within a team can influence knowledge transfer among employees, since it increases communication and helping behavior. Therefore, perhaps task interdependence captures the relationship with knowledge hiding better. Since task interdependence triggers employees to not only feel responsible for their own work outcomes, but also for their colleagues' work outcomes, knowledge hiding would be seen as counterproductive (Černe et al., 2017).

Furthermore, this study explored the influence of the organizational context on knowledge hiding behavior, as Connelly et al. (2012) emphasized that this could be a meaningful influencing factor. By examining the unexplored influence of a perceived communal sharing climate on the relation between career motivation and knowledge hiding, this study contributed to the current knowledge hiding literature. Previous research indicated that a perceived communal sharing climate provides an environment where much knowledge is being shared (Boer, van Baalen, & Kumar, 2004), because trust

is high (Mossholder et al., 2011). Therefore, this study hypothesized that a perceived communal sharing climate would strengthen the negative relationship between career motivated employees and knowledge hiding behavior. Surprisingly, no significant relationship was found. An explanation for this could be that although career motivated employees perceive a communal sharing climate, which can decrease knowledge hiding behavior, their behavior is simultaneously influenced by a different relational climate. This is in line with Fiske's (1992) relational models theory, which states that employee behavior is determined by a combination of multiple relational models. Instead of examining just one relational model in predicting knowledge hiding behavior, it is expected that by taking more relational models into account the understanding of this behavior will be improved (Boer et al., 2004). Perhaps, the decision for career motivated employees to either hide or share knowledge could be suppressed by a more authority ranking climate. Since social comparison is often an indicator for career success, knowledge may give career motivated employees a competitive advantage (Černe et al., 2014). According to Boer, Berends, and Van Baalen (2011), any sharing of their knowledge, and thus their expertise, could reduce the chances for career promotions. The expression 'knowledge is power' (Boer et al., 2011) could therefore exist among career motivated employees, even when group cohesiveness and trust is high, as in a perceived communal sharing climate.

Finally, the influences of demographic characteristics contributed to existing knowledge management- and career literature, since previous research into these fields of literature did not extensively focus on these influences. First, it was found that when the age of employees increases, they tend to hide less knowledge. An explanation for this could be that as employees get older, they may feel more committed to one certain organization, which fosters knowledge transfer behavior (Wang & Noe, 2010; de Vries, Van den Hooff, & de Ridder, 2006). Second, it was found that at higher educational levels, knowledge hiding behavior increases among employees. According to Boer et al. (2011), a possible explanation could be that as higher educated employees may work in more knowledge intensive organizations, knowledge could be seen as a criteria for success and thus as a competitive advantage. Additionally, it was found that when employees work longer in the organization, their career motivation decreased. An explanation could be that employees with greater organizational tenure are closer to their desired career level and put less effort in developing themselves (Ng, Eby, Sorensen, & Feldman, 2005).

Limitations and suggestions for future research

Despite the valuable theoretical contributions, the results of this study should be interpreted in light of two potential limitations. First, as the organizational context can influence knowledge hiding behavior (Connelly et al., 2012), this study examined the influence of a perceived communal sharing climate. However, this study only took one of the four relational climates into account, and according to Fiske (1992) and Boer et al. (2004), including a combination of relational climates predicts employee behavior better. Along with this, besides the relational climates there exist more organizational contexts that could influence employees' knowledge hiding behavior. In particular, HR systems can strongly

influence employee attitudes and behaviors (Batistič et al., 2016). For example, the different HR configurations by Lepak and Snell (1999), which include collaboration-, productivity-, commitment-, and compliance-based HR configurations, can be used to manage employee behavior within organizations (Batistič et al., 2016). Especially, the interplay of relational climates with these HR configurations were found to be crucial for predicting employee behavior (Batistič et al., 2016). As this study did not include other relational climates and HR configurations, the results could be suppressed by these underlying influences which should be taken into account. Therefore, suggested for future research is to examine multiple organizational contexts in order to gain a deeper understanding of their interplay and effect on knowledge hiding behavior. For example, Batistič et al. (2016) found that employee proactive behavior was positively influenced by a weak compliance HR configuration in combination with a strong market-pricing climate. It could be that these interrelated contextual influences also have an effect on knowledge hiding behavior. As a weak compliance-based HR configuration provides employees with autonomy and a strong market-pricing climate focuses on getting return on investments, this combination may encourages employees to fulfill personal goals (Batistič et al., 2016) and could therefore lead to less knowledge hiding behavior. However, future research is required to examine this relationship with knowledge hiding in more detail.

Second, since data were only collected at one given moment in time, the research design was cross-sectional in nature (Rindfleisch, Malter, Ganesan, & Moorman, 2008). This type of research puts the constructs and associations in a static form, meaning that the differences between individuals at one time do not represent change (Ployhart & Vandenberg, 2010). Therefore, no causal relationships between variables can be inferred from this study since a cross-sectional research often gives insufficient insight into how constructs will change over time (Ployhart & Vandenberg, 2010). In fact, the variability of a construct at one given time can be completely different from the variability of a construct over time (Ployhart & Vandenberg, 2010). For the ability to infer causal relationships, temporal order is a key marker, in which an effect is preceded by its cause (Rindfleisch et al., 2008). Therefore, in contrast to cross-sectional research, longitudinal research collects repeated measures from the same units of observation over time, in order to investigate the dynamic nature of a certain construct (Ployhart & Vandenberg, 2010). Hence, suggested for future research is to use a longitudinal research design to enhance the ability of making causal inference. It is recommended for researchers to collect at least three repeated measures with an interval of six months, to be able to determine the form of change (Ployhart & Vandenberg, 2010). In particular, as suggested by Ployhart and Vandenberg (2010), one useful approach to model change is latent growth modeling, which allows complex multivariate change models, and where the constructs of interest can be measured at different moments in time (Ployhart & Vandenberg, 2010).

Practical implications

In addition to the theoretical contributions, the results of this study demonstrate some correlations between variables that can provide relevant practical implications for managers and practitioners. As several studies demonstrated that knowledge hiding occurs in organizations, it is important for manager to be aware of the negative consequences of it, and to strive to minimize this behavior (Connelly & Zweig, 2015). As career motivation is shown in this study to be negatively correlated with knowledge hiding behavior, managers might decrease knowledge hiding behavior by enhancing employees' career motivation. According to Van Rijn et al. (2013), managers can enhance employees' career motivation by stimulating their career development. In particular, managers could for example coach employees in setting clear career goals, provide them with constructive feedback to improve their performance, offer them challenging job tasks, and give them the ability to spend time on tasks that intrinsically motivate them (Van Rijn et al., 2013).

Additionally, it is important for managers to understand the possible influences of the organizational context on employee behavior (Connelly et al., 2012). In particular, a perceived communal sharing climate is shown in this study to be positively correlated with career motivation. Therefore, managers might increase employees' career motivation by implementing practices that could enhance employees' perception of a communal sharing climate. For example, managers could implement self-managing teams in combination with team-based compensation (Mossholder et al., 2011). In this way, opportunities for social interaction and mutual interdependence are increased among employees, and they are stimulated to help each other to reach their individual- and team career goals (Mossholder et al., 2011). Moreover, as a perceived communal sharing climate is characterized by trust, managers can attempt to increase the perceived trustworthiness among employees (Connelly et al., 2012). In particular, managers could establish a shared vision by setting common goals, and hold employees accountable for trust, by including a measure of trustworthiness in employees' work evaluations (Abrams, Cross, Lesser, & Levin, 2003). Finally, managers could enhance a trusting culture by having open communication and by stimulating fairness in decision-making processes (Cabrera & Cabrera, 2005).

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Appendix A – Cover letter

Dear Sir / Madam,

We are students from Tilburg University who are conducting research about knowledge sharing and HR effectiveness in organizations.

You are being approached to participate in this research together with other colleagues from your organization. For us as students, this is our graduation project (master thesis) for our master Human Resource studies.

Strict anonymity of your answers is guaranteed. All data will be replaced by codes, nobody other than the research team of Tilburg University will have access to your answers. The data will be used for education and research purposes only.

In the questionnaire you will find statements about your work and some general questions. Please choose the answer which best represents your opinion and carefully read the instruction with each set of questions before filling out your answers. It will take you approximately 15 minutes to complete the questionnaire.

Thank you very much for your participation!

Kind regards,

Liza Bardoel, Keenen van den Broek, Susan Broos, Lois van Dijk & Anne Roefs

Appendix B – Questionnaire employees

Perceived communal sharing climate – English

Please answer the following questions about the collaboration with your colleagues using the answer categories ranging from (1) very incorrect to (7) very correct.

1. If one person in your team needs somethings, the others give it without expecting anything in return
2. Many important things you use belong to the team, not to anyone separately
3. People in the team share many important responsibilities jointly, without assigning them to anyone alone
4. People in the team feel a moral obligation to feel kind and compassionate to each other
5. People in the team make decisions together by consensus
6. People in the team tend to develop very similar attitudes and values
7. People in the team feel that they have something unique in common that makes them essentially the same
8. People in the team are a unit: they belong together

Perceived communal sharing climate – Dutch

Beantwoord alstublieft de volgende vragen over de samenwerking met uw collega's met behulp van antwoordcategorieën variërend van (1) zeer onjuist tot (7) zeer juist.

1. Als één persoon in uw team iets nodig heeft, geeft een ander dat zonder er iets voor terug te verwachten
2. Veel belangrijke dingen die jullie gebruiken behoren toe aan het team, niet aan één van jullie afzonderlijk
3. Mensen in het team delen veel belangrijke verantwoordelijkheden gezamenlijk, zonder deze aan één persoon apart toe te kennen
4. Mensen in het team voelen een morele verplichting om aardig en welwillend naar elkaar toe te zijn
5. Mensen in het team nemen samen beslissingen op basis van overeenstemming
6. Mensen in het team hebben de neiging om sterk vergelijkbaar gedrag en waarden te ontwikkelen
7. Mensen in het team vinden dat ze iets unieks gemeenschappelijk hebben, waardoor zij hetzelfde zijn
8. Mensen in het team zijn een eenheid: ze horen bij elkaar

Career motivation – English

Please rate the extent to which you...

1. Are able to adapt to changing circumstances
2. Are willing to take risks (actions with uncertain outcomes)
3. Welcome job and organizational changes (e.g. new assignments)
4. Can handle any work problems that come your way
5. Look forward to working with new and different people
6. Have clear career goals
7. Have realistic career goals
8. Know your strengths (the things you do well)
9. Know your weaknesses (the things you are not good at)
10. Recognize what you can do well and cannot do well
11. Define yourself by your work
12. Work as hard as you can, even if it means frequently working long days and weekends
13. Are involved in your job
14. Are proud to work for your organization
15. Believe that your success depends upon the success of your employer
16. Are loyal to your employer
17. See yourself as a professional and/or technical expert

Career motivation – Dutch

Geef alstublieft aan in welke mate u...

1. In staat bent u aan te passen aan veranderende omstandigheden
2. Bereid bent om risico's te nemen (acties met onzekere uitkomsten)
3. Veranderingen in uw werk en de organisatie verwelkomt (bijv. nieuwe opdrachten)
4. Kan omgaan met werkproblemen die op uw weg komen
5. Uitkijkt naar het werken met nieuwe en verschillende mensen
6. Duidelijke loopbaandoelen heeft
7. Realistische loopbaandoelen heeft
8. Uw sterkte punten kent (de dingen die u goed doet)
9. Uw zwakheden kent (de dingen waar u niet goed in bent)
10. Herkent wat u wel goed kunt en niet goed kunt
11. Uzelf definieert door uw werk
12. Zo hard werkt als u kunt, zelfs als dit betekent dat u vaak lange dagen maakt en in weekenden werkt
13. Betrokken bent bij uw werk
14. Trots erop bent dat u voor uw organisatie werkt
15. Gelooft dat uw succes afhankelijk is van het succes van uw werkgever
16. Loyaal bent aan uw werkgever

17. Uzelf ziet als een professioneel en/of technisch expert

Job autonomy – English

Please indicate the extent you agree with each of the statements below:

1. Do you have freedom in carrying out your work activities?
2. Can you decide how your work is executed on your own?
3. Can you personally decide how much time you need for a specific activity?
4. Can you organize your work yourself?

Job autonomy – Dutch

Geef aan in hoeverre u het eens bent met de volgende stellingen:

1. Heeft u vrijheid bij het uitvoeren van uw werkzaamheden?
2. Kunt u zelf bepalen hoe u uw werk uitvoert?
3. Kunt u zelf bepalen hoeveel tijd u aan een bepaalde activiteit besteedt?
4. Kunt u uw werk zelf indelen?

Knowledge hiding – English

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:

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

Knowledge hiding – Dutch

Denkt u alstublieft aan een recente situatie waarin een collega u om kennis verzocht en u weigerde uw kennis/expertise met hem/haar te delen of u niet al de informatie gaf die u heeft. Tijdens deze situatie...

1. Beloofde ik hem/haar te helpen zonder dat ik dit daadwerkelijk meende
2. Beloofde ik hem/haar te helpen, maar deelde ik in plaats daarvan andere informatie dan hij/zij nodig had
3. Vertelde ik hem/haar dat ik hem/haar later zou helpen, maar bleef ik dit zo lang mogelijk uitstellen
4. Gaf ik andere informatie dan hij/zij nodig had
5. Deed ik alsof ik de kennis niet had
6. Zei ik dat ik het niet wist, hoewel ik het wel wist
7. Deed ik alsof ik niet wist waarover hij/zij het had
8. Zei ik dat ik niets van het onderwerp afwist
9. Legde ik uit dat ik het hem/haar wel zou willen vertellen, maar dat dit niet de bedoeling was
10. Legde ik uit dat de informatie vertrouwelijk is en alleen beschikbaar voor mensen uit een bepaald project
11. Vertelde ik hem/haar dat mijn baas die kennis met niemand wilde laten delen
12. Zei ik dat ik zijn/haar vragen niet zou beantwoorden

Appendix C – Output confirmatory factor analysis

Output of baseline model without modifications

Table 3.

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	88	2312.914	773	.000	2.992
Saturated model	861	.000	0		
Independence model	41	5447.299	820	.000	6.643

Table 4.

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.575	.550	.671	.647	.667
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 5.

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.092	.088	.097	.000
Independence model	.155	.151	.159	.000

Default model

Standardized RMR = ,0901

Output of best fit model after modifications

Table 6.

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	110	1458.841	751	.000	1.943
Saturated model	861	.000	0		
Independence model	41	5447.299	820	.000	6.643

Table 7.

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.732	.708	.849	.833	.847
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Table 8.

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.063	.059	.068	.000
Independence model	.155	.151	.159	.000

Default model

Standardized RMR = ,0793

Table 9.

Modifications of correlated items

Construct	
Knowledge hiding	
9: Explained that I would like to tell him/her, but was not supposed to	10: Explained that the information is confidential and only available to people on a particular project
2: Agreed to help him/her but instead gave him/her information different from what she/he wanted	4: Offered him/her some other information instead of what he/she really wanted
5: Pretended that I did not know the information	6: Said that I did not know, even though I did
10: Explained that the information is confidential and only available to people on a particular project	11: Told him/her that my boss would not let anyone share this knowledge
9: Explained that I would like to tell him/her, but was not supposed to	11: Told him/her that my boss would not let anyone share this knowledge
Perceived communal sharing climate	
6: People in the team tend to develop very similar attitudes and values	7: People in the team feel that they have something unique in common that makes them essentially the same
Career motivation	
6: Have clear career goals	7: Have realistic career goals
2: Are willing to take risks (actions with uncertain outcomes)	3: Welcome job and organizational changes (e.g. new assignments)

8: Know your strengths (the things you do well)	9: Know your weaknesses (the things you are not good at)
1: Are able to adapt to changin circumstances	3: Welcome job and organizational changes (e.g. new assignments)
8: Know your strengths (the things you do well)	10: Recognize what you can do well and cannot do well
9: Know your weaknesses (the things you are not good at)	10: Recognize what you can do well and cannot do well
1: Are able to adapt to changing circumstances	2: Are willing to take risks (actions with uncertain outcomes)
3: Welcome job and organizational changes (e.g. new assignments)	5: Look forward to working with new and different people
1: Are able to adapt to changin circumstances	4: Can handle any work problems that come your way
3: Welcome job and organizational changes (e.g. new assignments)	4: Can handle any work problems that come your way
2: Are willing to take risks (actions with uncertain outcomes)	12: Work as hard as you can, even if it means frequently working long days and weekends
2: Are willing to take risks (actions with uncertain outcomes)	4: Can handle any work problems that come your way
17: See yourself as a professional and/or technical expert	12: Work as hard as you can, even if it means frequently working long days and weekends
12: Work as hard as you can, even if it means frequently working long days and weekends	14: Are proud to work for your organization
8: Know your strengths (the things you do well)	4: Can handle any work problems that come your way
14: Are proud to work for your organization	15: Believe that your success depends upon the success of your employer
2: Are willing to take risks (actions with uncertain outcomes)	5: Look forward to working with new and different people
5: Look forward to working with new and different people	6: Have clear career goals

Appendix D – Output common method variance

Table 9.

Results common method variance with and without common latent factor (CLF)

Loading			Estimate with CLF	Estimate without CLF	Delta
CS_8	<---	CS	0,821	0,819	-0,002
CS_7	<---	CS	0,735	0,742	0,007
CS_6	<---	CS	0,605	0,618	0,013
CS_5	<---	CS	0,584	0,592	0,008
CS_4	<---	CS	0,486	0,503	0,017
CS_3	<---	CS	0,462	0,47	0,008
CS_2	<---	CS	0,297	0,307	0,01
CS_1	<---	CS	0,465	0,481	0,016
CM_17	<---	CM	0,376	0,438	0,062
CM_16	<---	CM	0,601	0,63	0,029
CM_15	<---	CM	0,355	0,378	0,023
CM_14	<---	CM	0,67	0,667	-0,003
CM_13	<---	CM	0,63	0,674	0,044
CM_12	<---	CM	0,548	0,549	0,001
CM_11	<---	CM	0,492	0,51	0,018
CM_10	<---	CM	0,297	0,376	0,079
CM_9	<---	CM	0,212	0,273	0,061
CM_8	<---	CM	0,239	0,338	0,099
CM_7	<---	CM	0,19	0,263	0,073
CM_6	<---	CM	0,235	0,291	0,056
CM_5	<---	CM	0,174	0,253	0,079
CM_4	<---	CM	0,271	0,363	0,092
CM_3	<---	CM	0,159	0,247	0,088
CM_2	<---	CM	0,164	0,24	0,076
CM_1	<---	CM	0,209	0,294	0,085
Aut_4	<---	Aut	0,788	0,804	0,016
Aut_3	<---	Aut	0,659	0,681	0,022
Aut_2	<---	Aut	0,832	0,861	0,029
Aut_1	<---	Aut	0,713	0,745	0,032
KH_12	<---	KH	0,595	0,602	0,007
KH_11	<---	KH	0,668	0,679	0,011
KH_10	<---	KH	0,437	0,454	0,017
KH_9	<---	KH	0,534	0,543	0,009
KH_8	<---	KH	0,763	0,772	0,009
KH_7	<---	KH	0,876	0,886	0,01
KH_6	<---	KH	0,833	0,839	0,006
KH_5	<---	KH	0,792	0,796	0,004
KH_4	<---	KH	0,688	0,694	0,006
KH_3	<---	KH	0,836	0,842	0,006
KH_2	<---	KH	0,732	0,74	0,008
KH_1	<---	KH	0,742	0,749	0,007

Appendix E – Output conditional process modelling

```
Run MATRIX procedure:

************* PROCESS Procedure for SPSS Release 2.16.1 *****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2013). www.guilford.com/p/hayes3

**************************************************************************
Model = 14
    Y = KH_Mean
    X = AUT_Mean
    M = CM_Mean
    V = CS_Mean

Statistical Controls:
CONTROL= Gender   Age      Educatio Tenure

Sample size
        227

**************************************************************************
Outcome: CM_Mean

Model Summary
          R       R-sq        MSE          F        df1        df2        p
      ,2172      ,0472      ,1545     2,1880     5,0000   221,0000    ,0566

Model
             coeff         se          t          p       LLCI       ULCI
constant     -,1578      ,2539     -,6216      ,5348     -,6581      ,3425
AUT_Mean      ,0866      ,0461     1,8766      ,0619     -,0043      ,1775
Gender       -,0352      ,0548     -,6428      ,5210     -,1432      ,0728
Age           ,0050      ,0028     1,7849      ,0756     -,0005      ,0105
Educatio     -,0456      ,0335    -1,3622      ,1745     -,1116      ,0204
Tenure       -,0074      ,0031    -2,3953      ,0174     -,0134     -,0013

**************************************************************************
Outcome: KH_Mean

Model Summary
          R       R-sq        MSE          F        df1        df2        p
      ,3840      ,1475      ,5882     4,7133     8,0000   218,0000    ,0000

Model
             coeff         se          t          p       LLCI       ULCI
constant     1,9628      ,4996     3,9284      ,0001      ,9780     2,9476
CM_Mean      -,1789      ,1378    -1,2980      ,1957     -,4505      ,0927
AUT_Mean     -,0428      ,0915     -,4673      ,6407     -,2231      ,1376
CS_Mean      -,0965      ,0641    -1,5064      ,1334     -,2228      ,0298
int_1         ,0095      ,1343      ,0708      ,9436     -,2552      ,2743
Gender       -,1143      ,1093    -1,0457      ,2969     -,3296      ,1011
Age          -,0187      ,0056    -3,3318      ,0010     -,0297     -,0076
Educatio      ,1539      ,0665     2,3149      ,0215      ,0229      ,2850
Tenure        ,0024      ,0061      ,3885      ,6980     -,0097      ,0144

Product terms key:

 int_1    CM_Mean     X     CS_Mean
```

```
******************** DIRECT AND INDIRECT EFFECTS *************************

Direct effect of X on Y
     Effect         SE          t          p       LLCI       ULCI
     -,0428      ,0915     -,4673      ,6407     -,2231      ,1376

Conditional indirect effect(s) of X on Y at values of the moderator(s):

Mediator
           CS_Mean     Effect    Boot SE   BootLLCI   BootULCI
CM_Mean     -,8936     -,0162      ,0207     -,0800      ,0082
CM_Mean      ,0000     -,0155      ,0172     -,0678      ,0048
CM_Mean      ,8936     -,0147      ,0213     -,0869      ,0083

Values for quantitative moderators are the mean and plus/minus one SD from
mean.
Values for dichotomous moderators are the two values of the moderator.

******************** INDEX OF MODERATED MEDIATION ************************

Mediator
             Index   SE(Boot)   BootLLCI   BootULCI
CM_Mean      ,0008      ,0136     -,0274      ,0313

******************** ANALYSIS NOTES AND WARNINGS *************************

Number of bootstrap samples for bias corrected bootstrap confidence
intervals:
     5000

Level of confidence for all confidence intervals in output:
    95,00

NOTE: The following variables were mean centered prior to analysis:
 CM_Mean  CS_Mean

NOTE: Some cases were deleted due to missing data.  The number of such
cases was:
  8

------ END MATRIX -----
```