Can knowledge hiding promote creativity among IT professionals

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Abstract

Purpose – Knowledge sharing is believed to enhance creativity; however, the purpose of this study is to find out how and when knowledge hiding perception of target affects creativity of IT professionals.

Design/methodology/approach – Using a temporally segregated survey based data from IT professionals, this study investigates a three-way interplay of knowledge hiding, supervisor support for creativity and creative self-efficacy to examine employee's creativity. Time lagged data were collected from 253 respondents working in IT-based organizations across Pakistan.

Findings – Findings provide interesting insights revealing that knowledge hiding perception of target enhances target's creativity through the mechanism of benign envy. Another appealing finding is that the three-way interaction effect of supervisor support and creative self-efficacy is found to weaken the effect of knowledge hiding perception on employee creativity.

Originality/value – This is first of its kind study which is specifically related target's knowledge hiding perception with their own creativity among IT professionals. This study further explores the mechanism of benign envy as a motivational drive through which target's knowledge hiding perception enhances creativity. The cumulative role of conditional factors that affect knowledge hiding perception to creativity link from target's perspective has also been clarified. Most of the studies focus on benefits of knowledge sharing and ignoring the outcomes of knowledge hiding.

Keywords Knowledge hiding, Target, Benign envy, Creativity, Creative self-efficacy, Supervisor support

Paper type Research paper

The rapidly emerging knowledge-based economy confronts organizations with challenges regarding knowledge management to enhance creativity which is critical for organizational competitiveness. As creativity involves generation of novel ideas (Amabile, 1988), organizations emphasize on promoting knowledge sharing among employees to boost up their creativity (Dong *et al.*, 2016; Thuan, 2020). Despite the positive effects of knowledge sharing on creativity, many employees hide their knowledge from their fellow workers (Connelly *et al.*, 2019; Connelly *et al.*, 2012). Owing to its believed detrimental effects, knowledge hiding is a rampant challenge for management and organizations (Černe *et al.*, 2017; Fong *et al.*, 2018).

Knowledge hiding involves the intentional concealment or witholding of knowledge (Connelly and Zweig, 2015). Knowledge hiding occurs within a dyad involving knowledge hider, the one who hides knowledge, and the target, knowledge seeker who perceives knowledge hiding by coworker(s). A number of studies have examined knowledge hiding from hider's perspective including its types, namley, evasive hiding, rationalized hiding and playing dumb (Connelly *et al.*, 2012), antecedents and consequences for both employees and organizations (Anand and Hassan, 2019; Bogilović *et al.*, 2017; Černe *et al.*, 2014).

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Despite impeding consequences of knowledge hiding for both hider and target (Černe *et al.*, 2014; Rhee and Choi, 2016), the phenomenon has generally been discussed with a unidirectional perspective looking at it from the lense of knowledge hider, while the perspective of target who perceives knowledge hiding is largely ignored (Wang *et al.*, 2019). However, this perspetive tells one side of the story, and this ommission seems precarious, as both parties in the dyad may perceive and experience knowledge hiding differently. Lately, experts of knowledge hiding literature have begun to call for research from target's perspective regarding its positive or negative consequences, mechanism and boundary conditions (for example, Connelly *et al.*, 2019). In our study, we explore the phenomenon by focusing on the target who perceives knowledge hiding and its effect on target's creativity.

We further propose that it is crucial to examine the mechanism by identifying target's emotional reaction, as targets' knowledge hiding perception triggers their emotions and psychological states which can lead to behavioral reactions and performance outcomes (Connelly and Zweig, 2015; Holten *et al.*, 2016; Serenko and Bontis, 2016). A recent study by Wang *et al.* (2019) suggests that targets' perceived knowledge hiding makes them feel deprived of knowledge and causes psychological discomfort which motivates them to respond with self-determined adaptive behavior to enhance their competence and performance.

Similarly, upward social comparison suggests that when targets perceive they lack the something which their counterparts have, it generates psychological discomfort which inspires them for self-improvement (Collins, 1996). Benign envy is a depriving and discomforting feeling developed by upward comparison of oneself lacking something as compared to the other person (Van de Ven *et al.*, 2009, 2011). This social comparison and feeling of being deprived of knowledge motivate the target to improve his/her knowledge and performance (Khan *et al.*, 2017a; van de Ven, 2017). We propose that the targets under the influence of benign envy are likely to engage in self-enhancement activities to become more competent which will shape their performance.

Moreover, we present a three-way interaction with the combination of supervisor support for creativity and employee's creative self-efficacy in this relationship, as interactional perspective of creativity needs both contextual and individual factors (Shalley *et al.*, 2004; Woodman and Schoenfeldt, 1990).

Our research seeks to contribute to the literature and practice in the domain of knowledge management through several ways. First, we explore the neglected side of knowledge hiding by focusing on target's perception and determine its effect on creativity. In doing so, we respond to recent calls to study target's perspective and its outcomes (Connelly *et al.*, 2019). Further, based on upward comparison literature (Festinger, 1954), we extend the literature of psychological reactions to knowledge hiding by examining the mechanism of benign envy as target's emotional reaction to knowledge hiding. In addition, this study provides insights about how contextual and individual factors shape the creativity of targets who perceive knowledge hiding. To our knowledge, this is first study which examines the three-way interplay among target's perceptions of knowledge hiding, supervisor support for creativity and creative self-efficacy on creativity. We conducted our study in IT-based organizations where knowledge management is critical in achieving organizational success. Acquiring latest and robust knowledge is imperative for IT professionals to perform their job effectively which determines their performance. Our study will provide insights for organizational decision-makers in managing knowledge behaviors of employees their outcomes and also identifying creative self-efficacy and supervisor support for creativity as coping mechanisms to deal with knowledge hiding at work.

Literature review

Target's perception of knowledge hiding and creativity

Employee creativity is defined as the generation and exploration of novel and useful ideas and knowledge related to work (Amabile, 1988; Oldham, 2003; Woodman *et al.*, 1993; Zhou and Shalley, 2008). To develop new ideas at work, employees are required to have information regarding the issues and tasks at hand (Amabile, 1983). Hence, they look for knowledge from different sources of information around them such as their coworkers(Alavi and Leidner, 2001; Ford and Staples, 2010). In this regard, several studies have acknowledged that knowledge sharing among coworkers facilitates the ability of production of new ideas, thereby enhancing creativity of employees (Kremer *et al.*, 2019; Men *et al.*, 2019). Conversely, studies argue that when employees intentionally withhold knowledge from each other when it is requested from the other, it inhibits the creativity of coworkers, as it limits the availability of information and ideas (Černe *et al.*, 2017; Černe *et al.*, 2014).

However, this phenomenon is required to be looked from the perspective of targets who perceive that knowledge has been hidden from them by their coworker/coworkers (Bogilović *et al.*, 2017; Connelly *et al.*, 2019). Past research suggests that when targets perceive that their coworkers hide knowledge from them, it evokes negative emotions and behaviors in them (Connelly and Zweig, 2015; Serenko and Bontis, 2016). This idea is also supported by Černe *et al.* (2014), who argue that when employees perceive knowledge hiding behavior from coworkers, this develops feelings of distrust for the knowledge hiders. This may also develop feelings about the hider that he would not help the target in future in acquiring knowledge. We argue that this distrust on the hider develops feelings in the target to stop relying on hider to get information, and they rely on their own abilities and other sources of knowledge to get the desired information (Wang *et al.*, 2019). This will mitigate their dependence on knowledge hider for knowledge.

Moreover, when targets perceive that knowledge is being hidden from them, they realize that they lack some information that their coworkers have. This knowledge gap makes them feel deprived of knowledge and makes them feel dissatisfied (Loewenstein, 1994; Shani and Zeelenberg, 2007; Wilson and Gilbert, 2005). Hence, because of curiosity, they strive harder to acquire more information (Loewenstein, 1994; Veeravalli *et al.*, 2019). Acquiring new information from other sources will help them in generating new ideas, and hence, this will improve their creative performance. This leads to our first hypothesis:

H1. Target's perception of knowledge hiding is positively and significantly related to creativity.

Target's perception of knowledge hiding and benign envy

Employees working together make request and ask for knowledge frequently from their organizational members and colleagues (Werner and Dickson, 2018). They generally ask for knowledge from those coworkers who have good knowledge and expertise of the task at hand (van Ginkel and van Knippenberg, 2009). In other words, those who ask for knowledge make requests to those fellow workers who they deem to be having more expertise and information about task at hand as compared to them. Hence, individuals make information requests on the basis of upward comparison with the coworkers who are more knowledgeable.

Upon requesting some knowledge, if the target perceives that the information asked has been refused, stalled or ignored by the coworker, it develops a perception of target that knowledge is been hidden from him or her (Connelly *et al.*, 2012). Given the target's perception that his/her coworker has better knowledge, and he/she is hiding that knowledge

based on justified or unjustified reasons, the target may develop frustrating feelings of not knowing what other coworkers know (Holten *et al.*, 2016). This frustrating feeling of not having the knowledge that someone else has, developed by upward comparison of oneself with others in which one feels lacking something that others have, is called benign envy (Salerno *et al.*, 2019; Van de Ven *et al.*, 2009, 2011). Hence, targets of knowledge hiding develop benign envy for coworkers who have better knowledge than them. Based on these arguments, the following hypothesis is formulated:

H2. Target's perception of knowledge hiding is positively and significantly related to benign envy.

Benign envy and creativity

Benign envy evokes the feelings of motivation developed in the individual by upward comparison with other fellow workers (Lange and Crusius, 2015; Smallets *et al.*, 2016). Van de Ven *et al.* (2009) provide evidence for this by giving the notion that benign envy can lead to an individual feeling frustrated and inferior owing to lack of something which others in comparison have. Further, benign envy evokes inferiority and inspires individuals to wish to improve and level up in comparison to their counterparts (Crusius *et al.*, 2020). The upward social comparison and the frustration elicited by it triggers an orientation of challenge in the targets to acquire what others have but they lack (Crusius and Mussweiler, 2012; Salerno *et al.*, 2019), such as knowledge and expertise. More specifically, when individuals perceive that their coworkers are better off in resources such as knowledge, it motivates them to strive hard to achieve more knowledge as well (Lee and Duffy, 2019). Hence, employees work hard and look for information from different sources and establish their resources.

Creativity requires the preliminary information about the tasks at hand to produce novel ideas (Amabile, 1983), and benign envy motivates individuals to collect those existing concepts that are required to generate new ideas (Crusius *et al.*, 2020); this challenge orientation is likely to increase individual's creativity. In other words, social comparison processes stimulate the learning of new skills through motivation and challenge orientation (Aleksic and Mihelic, 2018), which can lead to new abilities such as the increased application of creative processes in the workplace such as acquiring and exploring ideas and information from diverse sources. By engaging in such creative activities, employees are more likely to perform more creatively thereby leading to improvement in their creativity performance(De Dreu *et al.*, 2011). Moreover, creativity requires the individual to take risks, and benign envy is the pulling force that urges the individual to take risks (Kwon *et al.*, 2017). Therefore, benign envy promotes creativity of employees, and hence it leads to the hypothesis:

H3. Benign envy is positively and significantly associated with creativity.

Mediating role of benign envy

As *H2* and *H3* provide support for the phenomenon that knowledge hiding perceptions of target promote benign envy in targets, and benign envy facilitates creativity of targets, we propose benign envy as the mediating mechanism between knowledge hiding perception and target's creativity.

The perception of knowledge hiding develops when employees make knowledge request to their coworkers having better knowledge about the issue at hand and they are denied to

be given that knowledge (Connelly *et al.*, 2012). This can develop negative feelings in the targets (Arain *et al.*, 2018). Previous studies support this idea that when knowledge hiders refuse to share their knowledge, targets develop emotions for them such as distrustful feelings for the knowledge hider (Černe *et al.*, 2014). In the same line, the targets develop some emotions which have the propensity to make them carry out their own tasks in a better way like the knowledge hiders can do with their expertise and knowledge. Such feelings involve feeling of frustration and inferiority developed by upward comparison (Khan *et al.*, 2017b), that coworkers possess the knowledge that they refused to share and target lacks that knowledge. This feeling that is benign envy motivates the targets to equip themselves with the knowledge they lack through different sources (Van de Ven *et al.*, 2009, 2011). Hence, the knowledge depth and breadth of employees enhances while acquiring and exploring new information from different sources which improves their creativity (Mannucci and Yong, 2018). Based on these arguments, the following hypothesis is developed:

H4. Benign envy mediates the relation between target's perception of knowledge hiding and creativity.

Interaction effects of knowledge hiding perception of target, creative self-efficacy and supervisor support for creativity on employee creativity

Supervisor's behavior is an important factor that promotes creativity of followers (Ivcevic *et al.*, 2020). Supervisors support employees and help them to use their creative abilities and hence in promoting creative performance of employees (Zhang and Bartol, 2010a, 2010b). Hence, supervisor support constitutes an essential factor in influencing employee creativity (George and Zhou, 2007; Tu *et al.*, 2019). However, the interactional perspective of creativity suggests that contextual factors such as supervisor support interact with employees' internal characteristics to influence creativity outcomes (Shalley *et al.*, 2004; Woodman and Schoenfeldt, 1990). Hence, individual differences affect the reactions of employees toward supervisor's support (Chae *et al.*, 2019). That is, employees' characteristics interact with the effectiveness of supervisory behavior for creativity (Kim, 2019). This can be explained with the notion that when employees get supported by their supervisors for acquiring new ideas and exploring new knowledge, and they have the self-belief on their creative abilities, this leads to greater creativity. The confidence and belief in oneself that he or she has the ability to accomplish tasks in a creative way is called creative self-efficacy (Tierney and Farmer, 2004). Employees having greater creative self-efficacy also count on their supervisors to provide them support in the form of resources, directions and appreciation to perform creatively (Tierney and Farmer, 2002). Hence, employees' creative self-efficacy and supervisor's support serve as the ingredient to facilitate employees' creativity.

Employees who believe that their coworker/coworkers hide knowledge from them develop a distrust toward the knowledge hiders (Černe *et al.*, 2014). This implies that they may stop counting on that particular coworker for acquiring knowledge and may rely upon their self-abilities and other sources of knowledge and support (Wang *et al.*, 2019) such as their supervisor. Individuals with high self-efficacy beliefs make the best use of supervisor's support (Farmer and Tierney, 2017). Supervisor may provide employees with diverse knowledge sources, resources for creative solutions and appreciation for creative outcomes (Shalley and Gilson, 2004). This motivates employees to generate and explore creative ideas (Aleksic and Mihelic, 2018).

Moreover, knowledge hiding by coworkers leads employees to receive less information than required (Černe *et al.*, 2017), and it may create ambiguity about ideas for which

knowledge request was made (Anaza and Nowlin, 2017). However, this ambiguity can be overcome when employees with high creative self-efficacy get the support for creative activities by supervisor. Supervisors provide subordinates the required information thereby reducing uncertainty and ambiguity (Shalley and Gilson, 2004). Hence, employees with high self-efficacy and greater support from supervisor are more likely to be less influenced by knowledge hiding.

Following these arguments, we argue that supervisor support for creativity for employees with high creative self-efficacy, both of which predict employee creativity, may suppress the relationship between knowledge hiding perception of target and target's creativity. Specifically, we speculate that knowledge hiding may be less strongly related with employee creativity with high creative self-efficacy when leader is supportive for creativity. A supervisor who expects, encourages and supports his or her subordinates to work creatively will play an important role in boosting up their creativity (Jiang and Gu, 2017). Under such circumstances, knowledge hiding may produce a weaker effect on employee creativity because supervisor provides enough support for promoting creative outcomes and the employees have confidence in their abilities for performing creatively. Also, in such scenario, employees will focus more on their creative performance than worrying about hiding behavior for a colleague. In the absence of supervisor support, employees rely more on colleagues for knowledge and ideas, and hence they will be having higher influence of knowledge hiding by coworkers on their creativity.

We speculate that for employees with high creative self-efficacy, high supervisor support has negative moderating influence (the stronger the supervisor support for creativity and creative self-efficacy the weaker knowledge hiding perception-creativity link). However, for employees with creative self-efficacy and high supervisor support, there is positive moderating influence (stronger knowledge hiding-creativity link).

Thus, we predict:

H5. Knowledge hiding perception of target, supervisor support for creativity and target's creative self-efficacy interact to affect employee creativity in such a way that when creative self-efficacy and supervisor support is high, the effect of knowledge hiding perception will be weaker.

Figure 1 presents the proposed theoretical linkage between variables.

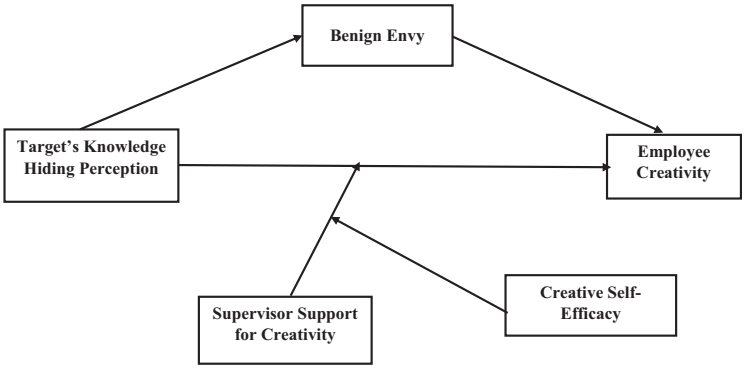


Figure 1.
Research model

Methods

Procedure and sample

Employees working in IT industry across Pakistan have been targeted in this study. To collect data, the HR managers of IT-based organizations were contacted, and they were communicated the purpose of research and were asked to help in collecting the data. Upon getting permission from HR department, data were collected through self-administered questionnaires. Two separate surveys were developed: one for supervisor and one for employees to avoid problems related to common method variance (Podsakoff *et al.*, 2003). Surveys were provided to employees and supervisors who filled and submitted the forms separately. To match the questionnaires, secret codes were assigned to each employee, and a list was generated that was provided to supervisors to refer to employee code.

To avoid common method bias (Podsakoff *et al.*, 2012), we collected the data at three points of time. The data for demographic variables, independent variable knowledge hiding perception and moderators supervisor support for creativity and creative self-efficacy were collected at Time 1. The data for mediator benign envy were collected two weeks later at Time 2, while employee creativity was reported by supervisors two week later from Time 2. Data were collected from March 2017 to July 2017. A total of 400 questionnaires were distributed, and 253 responses were used for analyses after initial screening of incomplete or unmatched surveys.

The sample consisted of male respondents constituting 63.5% of the sample, while female respondents represented 36.5% of the population. The majority belongs to age group 18–25 representing 51.2% of the sample and other age groups 25–34 and 35–44 constituted 47.3% and 1.5%, respectively of the sample. In total, 59.7%had bachelor degree, and 55.7% had an experience of 1–3 years representing the majority of sample.

Ethical considerations

A short request was added at the opening of survey that explained the purpose of research. It was mentioned that participation in this research is totally voluntary, and none of the respondents is coerced to fill this form. It was made sure that the data provided will only be used for research purpose which will be anonymous and confidential, and the employees' data will not be shared with any other source in the organization. However, the end results that are generalized without any specifications will be available for the organizations.

Measures

Data were collected through five-point Likert-type scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Knowledge hiding perception of target. This measure comprised of three items that measure knowledge hiding from target's perspective developed by Serenko *et al.* (2016). Sample item is: "my fellow colleagues often communicate only part of the whole story to me."

Supervisor support for creativity. Madjar *et al.* (2002)'s three-item instrument was used to measure supervisor support for creativity rated by subordinates. Sample item is: "My supervisor is always ready to support me if I introduce an unpopular idea or solution at work."

Creative self-efficacy. Employees responded about their creative self-efficacy through a three-item measure developed by Tierney and Farmer (2002). Sample item is: "I have confidence in my ability to solve problems creatively."

Benign envy. Benign envy was measured through adapting the instrument developed by van de Ven (2017). We combined one item pertaining to benign envy and four items

measuring upward motivation which accounts for benign envy as suggested by van de Ven (2017). As per the suggestion of the author, a country where there are separate words for benign and malicious envy, one should use the first item with word used in their language for benign envy. In Pakistan, Urdu is the national language which has separate words for benign envy and malicious envy (Khan *et al.*, 2017b). Hence, we adapted the first item as "I felt benign envy toward the other for having knowledge."

All the five items were adapted by replacing "x" with "knowledge." In this instrument, *x* referred to something that the envied person feels that he or she is lacking. The other four items used are: "I thought about what it would be like to have the knowledge," "I wanted to have that knowledge as well," "I felt inspired to get knowledge myself," "I thought about what it would be like to have knowledge" and "I wanted to put in effort to obtain knowledge as well." This study provides the validation of this measure as well.

Employee creativity. A four-item instrument developed by Tierney *et al.* (1999) was used to measure employee creativity in work. Immediate bosses were asked to rate their subordinates for creativity. A sample item is: "Identifies opportunities for new ways of dealing with work-related issues."

Studies on knowledge hiding and creativity indicate that these demographic factors may influence individual knowledge hiding and creative performance of employees (Sung and Choi, 2009; Wang and Noe, 2010). However, it is not advisable to automatically control the variables on the basis of previous literature only; rather, it is suggested to conduct statistical and explicit approaches to decide for control variables for accurate interpretation of results (Spector and Brannick, 2011). We therefore conducted one-way ANOVA tests to decide for control variables which did not yield significant results for creativity ($p > 0.05$); hence, these variables were not controlled for hypotheses testing.

Results

As the measure for benign envy has been used first time with mentioned combination suggested by van de Ven (2017), we carried out exploratory factor analysis to verify the factor structure of variables. Principal component analysis was used with varimax rotation and Kaiser normalization. As expected, a total of five factors were formed for the variables knowledge hiding, benign envy, employee creativity, supervisor support and employee creative self-efficacy. The five factors constituted a total of 81.2% cumulative variance with Eigen values greater than 1. As shown in Table 1, all the items had factor loadings ranging from 0.702 to 0.911 and hence generating a plausible factor structure.

We performed confirmatory factor analysis on all five variables of our study, and the results yielded a good model fit (chi-square/df = 1.919, TLI = 0.949, CFI = 0.962, RMSEA = 0.070). Hence, five-factor model was used for further data analyses. Moreover, we examined the psychometric properties of our data through convergent and discriminant validity (Hair *et al.*, 2010). As shown in Table 1, the average value extracted (AVE) for all variables in greater than 0.5, the item loadings for all variables were also greater than 0.5 and the threshold for convergent validity is achieved (Hair *et al.*, 2010). Furthermore, there were no cross loadings of items and maximum shared variance for all constructs is less than AVE. Table 2 also shows that the diagonal values representing the square root of AVE are higher than interconstruct correlation hence discriminant validity is also established.

Descriptive statistics

Table 2 represents the mean, standard deviation, square root of AVE and correlation analysis between the variables. Results show that knowledge hiding perception is significantly and positively associated with creativity ($r = 0.435$, $p < 0.01$) and benign envy

Construct items	Factors 1	2	3	4	5	CR	AVE	MSV
Target's knowledge hiding perception						0.866	0.684	0.255
TPKH1			0.871					
TPKH2			0.911					
TPKH3			0.837					
Benign envy						0.951	0.794	0.217
BE1	0.851							
BE2	0.901							
BE3	0.849							
BE4	0.881							
BE5	0.888							
Creative self-efficacy						0.816	0.598	0.348
CSE1					0.808			
CSE2					0.816			
CSE3					0.702			
Supervisor support for creativity						0.886	0.721	0.347
SSC1				0.839				
SSC2				0.876				
SSC3				0.775				
Employee creativity						0.910	0.719	0.348
EC1		0.837						
EC 2		0.848						
EC3		0.804						
EC4		0.765						

Notes: CR = Composite reliability; AVE = Average variance extracted; MSV = Maximum shared variance

Table 1.
Reliability, validity and factor loadings of constructs

	Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1	Gender			–								
2	Age			0.358								
3	Qualification			0.227**	0.131							
4	Experience			0.243**	0.609**	0.257**						
5	Target's KH perception	3.31	1.18	0.100	−0.078	0.052	−0.020	(0.827)				
6	Benign envy	3.37	1.06	0.078	−0.078	0.133	0.015	0.429**	(0.891)			
7	Creative self-efficacy	3.70	0.679	0.025	−0.047	0.056	0.004	0.238**	0.207**	(0.774)		
8	Supervisor support	3.79	0.939	−0.070	−0.184*	0.162*	0.043	0.253**	0.341**	0.489**	(0.849)	
9	Employee creativity	3.64	1.03	0.110	−0.098	0.106	0.009	0.435**	0.397**	0.529**	0.518**	(0.848)

Notes: $N = 253$, $^{*}p < 0.05$; $^{**}p < 0.01$. The diagonal values in parentheses represent the squared root of average variance extracted for respective construct

Table 2.
Means, standard deviations and correlations

($r = 0.429$, $p < 0.01$) thereby supporting *H1* and 2. Moreover, benign envy is significantly and positively associated with creativity ($r = 0.397$, $p < 0.01$), thereby supporting *H3*. Significant positive correlation of creative self-efficacy ($r = 0.529$, $p < 0.01$) and supervisor support ($r = 0.518$, $p < 0.01$) is also found with creativity.

Table 3 indicates the results of linear regression analysis for *H1* to *H3*. Results show that knowledge hiding perception of target was significantly and positively related to creativity ($\beta = 0.435$, $p < 0.001$) and benign envy ($\beta = 0.429$, $p < 0.001$). This accepts *H1* and *H2* which predicted positive association of knowledge hiding perception of target and creativity and knowledge hiding perception of and benign envy. In addition, positive and significant effect of benign envy on creativity was found ($\beta = 0.397$, $p < 0.001$) which supports *H3* that proposed positive association between benign envy and creativity. Hence, *H3* is also accepted.

To check *H4* that proposed the mediating role of benign envy between knowledge hiding perception of target and creativity, we used PROCESS macro by Hayes. As shown in Table 4, it is found that the true indirect effect of benign envy as a mediator between knowledge hiding perception of target and creativity is estimated to lie between 0.096 and 0.177 with 95% confidence interval which is significantly different from zero at $p < 0.05$ and proves the mediation of benign envy between knowledge hiding perception of target and creativity thereby accepting *H4*.

To test *H5*, we used PROCESS macro by Hayes which uses simultaneous entry of variables instead of hierarchical entry. *H5* proposed the joint moderating influence of supervisor support for creativity and target's creative self-efficacy in the relationship of knowledge hiding perception and creativity in such a way that when supervisor support for

Table 3.
Direct effects among study variables

Predictor	Outcome: employee creativity β	R^2	ΔR^2	Outcome: benign envy β	R^2	ΔR^2
IV						
Target's KH perception	0.435^{***}	0.189	0.189^{***}	0.429^{***}	0.18	0.180^{***}
Mediator						
Benign envy	0.397^{***}	0.153	0.153^{***}			

Notes: $N = 253$; $^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table 4.
Mediating effects of benign envy in the relation between target's KH perception and employee creativity

Relationship	β	t	Bootstrap results for indirect effects LL 95% CI	UL 95% CI
Total effect of target's KH perception on employee creativity	0.380^{**}	6.62	0.267	0.493
Direct effect of target's KH perception on employee creativity	0.284^{*}	3.60	0.162	0.405
Indirect effect of benign envy	0.096		0.046	0.177

Notes: $^{*}p < 0.05$; $^{**}p < 0.01$; number of bootstrap resamples = 5,000; LL = Lower limit; CI = Confidence interval; UL = Upper limit

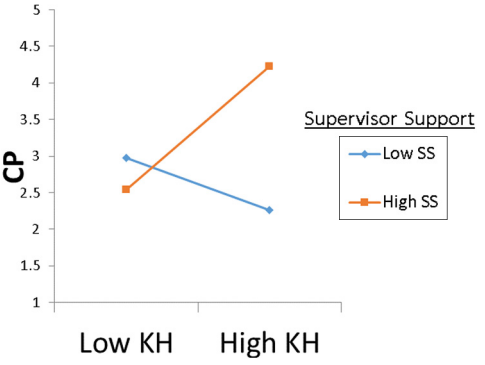
creativity and employee creative self-efficacy are high, the effect of knowledge hiding perception will be weaker on employee creativity. Table 5 shows the results for this hypothesis.

It was found that the three way interaction term of knowledge hiding, supervisor support and creative self-efficacy accounted for a significant and negative effect on creativity (B = −0.423, $p < 0.001$). The bootstrap values also show a significant relationship, as they do not contain a zero (−0.601, −0.245). This provides evidence for moderation. The interaction effects were plotted at one standard deviation above and below the mean for supervisor support and creative self-efficacy. Figures 1 and 2 show that under high levels of creative self-efficacy, high supervisor support diminishes the effect of knowledge hiding on creativity. However, under low level of creative self-efficacy and high supervisor support, knowledge hiding has greater effect on creativity. This provides support for *H5*, thereby accepting the hypothesis (Figure 3).

Predictors DV: employee creativity	B	*t*	ΔR^2	LL 95% CI	UL 95% CI
Target's KH perception × supervisor support	−0.063	−1.10		−0.176	0.050
Supervisor support × creative self-efficacy	−0.287	−0.329		−0.459	0.015
Target's KH perception × creative self-efficacy	−0.176*	−2.09		−0.343	−0.010
Target's KH perception × supervisor support x creative self-efficacy	−0.423***	−4.68	0.057***	−0.601	−0.245

Notes: $N = 253$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; number of bootstrap resamples = 5,000; LL = Lower limit; CI = Confidence interval; UL = Upper limit

Table 5.
Results of three way interaction effects



Notes: *KH = Target's knowledge hiding perception, CSE = Creative self-efficacy, SS = Supervisor support for creativity

Figure 2.
Three-way interaction effects under low CSE

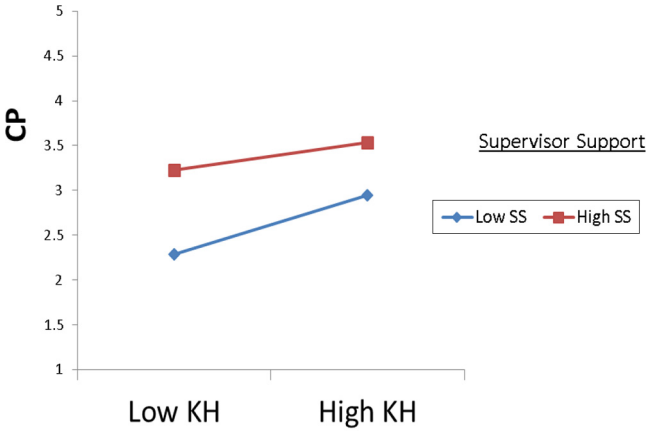


Figure 3.
Three-way interaction effects under high CSE

Notes: *KH = Target's knowledge hiding perception, CSE = Creative self-efficacy, SS = Supervisor support for creativity

Discussion

In the present study, we set out to investigate the phenomenon of knowledge hiding from target's perspective, its outcomes, mechanism and boundary conditions. Findings of this study reveal that that knowledge hiding perception of target facilitates creativity of the target. This implies that when an employee perceives that his or her fellow workers have more information than them but they did not share it, it develops feeling of lacking what others have. Moreover, it may develop feeling of not relying on the knowledge hider for further knowledge acquisition. The feeling of lacking the knowledge makes the target to try to explore and acquire the information from different sources. Hence, this information gap serves as a source of motivation for the targets to acquire more knowledge. This enhances their creativity. This finding is consistent with the ideas proposed by past studies which explain that when an information gap is created, and it urges the individuals to strive harder to attain that knowledge (Golman and Loewenstein, 2015; Shani and Zeelenberg, 2007; Veeravalli *et al.*, 2019). However, this finding is contradictory to previous studies on knowledge hiding. Past studies on knowledge hiding provided evidence that knowledge hiding diminishes creativity (Černe *et al.*, 2014). However, most of these studies look at the phenomenon from knowledge hider's perspective (Rhee and Choi, 2016). The perception of target of knowledge hiding may be different from knowledge hider's perception (Bogilović *et al.*, 2017). Also, the outcomes of knowledge hiding perception are different when seen from target's perspective. Past studies provide support that employees may react differently to knowledge hiding based on their perception toward it (Connelly *et al.*, 2019). Our findings acknowledge this and provide evidence for this notion.

Another interesting finding of the current study is the underlying mechanism which provides clarification of how knowledge hiding perceptions of targets promote their creativity. This mechanism is explained through benign envy which is developed as a result of upward comparison of an individual of someone who has something better than him or her have (Crusius *et al.*, 2020; van de Ven, 2017; Van de Ven *et al.*, 2009, 2011). As employees make knowledge requests to those who they consider having better knowledge than them, it generates an upward comparison. However, when knowledge is not provided, the target develops feelings of frustration and envy for the knowledge hider. This frustration

generates a motivating force which allows the target to acquire more expertise and knowledge. Acquiring more knowledge helps them to boost up their creative ideas and increases their creativity. This unique mechanism has not been tested before by previous studies. However, we found support for proposing such mechanism as past studies contend that knowledge hiding activates several emotions in targets, and they react to those emotions (Connelly and Zweig, 2015; Connelly *et al.*, 2012). Moreover, literature on benign envy provides consistent views about it as a motivating force for improved performance outcomes (Jafri, 2020; Khan *et al.*, 2017a; van de Ven, 2017).

The three-way interaction effects found in the study provide insights about the conditions when knowledge hiding can exert strong influence on creativity of employees and when its effects can be mitigated. While past studies consider knowledge hiding as a negative phenomenon, it is also evident that knowledge hiding is very much prevalent in organizations as of today. The interaction effects of supervisor support and creative self-efficacy provide evidence that the effects of knowledge hiding on employees' performance outcomes such as creativity can be controlled through this interaction. More interesting is the finding that the combined effects of supervisor support and employee's creative self-efficacy mitigate the relationship of knowledge hiding and creativity. This implies that the knowledge hiding by coworkers does not affect performance outcomes of employees when they have their supervisor's support for creativity with them and have the self-belief that they are capable of producing creative solutions. This also acknowledges that a blend of support by supervisor and employee's individual characteristics has the propensity to make employees rely on other sources for knowledge rather than the knowledge hider. Hence, not depending on those coworkers who hide their knowledge and having other sources to look for information and ideas help employees in doing their tasks creatively. Also, when this support by supervisor or creative self-efficacy is missing, or less, employees depend more on coworkers for knowledge and hence are more affected by their knowledge hiding behaviors.

Theoretical implications

This study provides a unique research framework suggesting counterintuitive links of knowledge hiding studied from target's point of view and target's creativity. Unlike past studies, which consider knowledge hiding from hider's perspective solely (Bogilović *et al.*, 2017; Serenko *et al.*, 2016), this study proposed and provided evidence that knowledge hiding seen from target's perspective has contrary implications. We extend literature on the neglected side of knowledge hiding (Connelly *et al.*, 2019; Wang *et al.*, 2019) and provide room for further research in this avenue. Moreover, we specified the underlying mechanism of these probable associations through the activation of benign envy via upward comparison process (Salerno *et al.*, 2019) in targets of knowledge hiding. Another unique contribution of the current study was to identify and test the three-way interaction effects of knowledge hiding, supervisor support for creativity and employee creative self-efficacy on employee creativity. This study theoretically contributes to the knowledge management literature. Specifically, it contributes to the literature of knowledge hiding outcomes with the intervention of benign envy and the interactive effects of supervisor support for creativity and employee's creative self-efficacy. This study is the first attempt to empirically validate the model of knowledge hiding from target's perspective, its outcomes, underlying psychological mechanism and conditional factors.

Practical implications

Organizations of today, operating in intense competition, strive to enhance creativity through designing and implementing effective knowledge management strategies.

Knowledge is considered to be the one of the most precious assets which helps in attaining competitive advantage. Hence, organizations look for ways to promote employee knowledge sharing behaviors (Naeem and Khan, 2019; Nguyen *et al.*, 2019) and reduce knowledge hiding behaviors of employees, as a number of studies provide evidence that they have diminishing effects for performance outcomes (Sukumaran and Lanke, 2020; Zhang and Min, 2019). While knowledge exchange behaviors involve two parties, looking at the phenomenon only from hider's perspective reveals only limited side of the picture. Our study recommends knowledge decision-makers in organizations to look at target's perspective as well which provides additional insights. As knowledge hider and target may differ in their perception of knowledge concealment, target's perception of knowledge hiding can create drive in them for self-enhancement and self-improvement through acquiring knowledge from other sources and not relying on knowledge hider. It is suggested for organizations to create opportunities and resources for employees for learning. In such contexts, knowledge hiding as perceived by targets can act like a triggering and driving force toward more learning and creativity. In addition, managers must identify the contextual and personal resources that can help employees in dealing with the effects of perceived knowledge hiding. Our study explicates that resources such as supervisor support for creativity along-with self-beliefs in one's creative abilities can help in coping with the effects of knowledge hiding. Finally, we clarify that knowledge hiding is not a standalone good or bad phenomenon (Wang *et al.*, 2019), as there is a dark and bright side to everything. Knowledge hiding might be an irresistible phenomenon where there is high competition among employees or where the employee performance is appraised based on quality or number of their unique ideas (Anand *et al.*, 2020). In such organizations, it is not necessary to mitigate target's knowledge hiding perception, as it can ignite curiosity, competition and motivation to learn. Instead, focusing on providing and facilitating the resources that can build creativity can be more practical. In short, as knowledge hiding is an all-pervading phenomenon, organizations must ensure the availability of supervisors who support and reward creative outcomes of employees and boost their confidence on their creative abilities.

Limitations and future directions

Apart from the imperative contributions of this study, it has several limitations. This study has examined the effects on target's perception of knowledge hiding on target's creativity. In doing so, this study has taken into account a unidimensional scale for target's knowledge hiding perception developed by Serenko *et al.* (2016). However, other studies explain the multi-dimensional nature of knowledge hiding including three types namely evasive hiding, rationalized hiding and playing dumb which predict the outcomes differentially (Connelly *et al.*, 2012; Hernaus *et al.*, 2019). However, these dimensions are identified from knowledge hider's perspective, and the target may not be able to differentiate among these types based on their intra-individual nature of intentional and strategic knowledge concealment. Further, the actor–observer realm suggests that knowledge hider and target may perceive and interpret the knowledge hiding intentions and behavior very differently (Connelly and Zweig, 2015); hence, it might be difficult to fit in the same knowledge hiding dimensions into the target's perspective. We suggest future researchers to explore the multidimensional nature of knowledge hiding and clarify whether its types are construed differently by targets as compared to knowledge hider.

In addition, this study tested benign envy as a dimension of envy. While there are two types of envy malicious and benign envy (Crusius *et al.*, 2020), future studies taking into account multiple dimensions of knowledge hiding should test both benign and malicious envy as mediators of these links. It can be predicted that rational hiding may lead to benign

envy, while evasive hiding may lead to malicious envy. Moreover, future studies should take into account the effects of target's perception of knowledge hiding on other performance outcomes such as job performance which might offer different findings. Finally, this study tested the associations at one level; however, one can identify that knowledge hiding can be examined as a multilevel phenomenon such as involving individual, dyadic (perpetrator-target), leadership and group-level(Connelly and Zweig, 2015; Connelly *et al.*, 2012). For example, a study can examine how knowledge hiding outside the group can affect individual or group level performance outcomes and what can be the role of leadership in this phenomenon.

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Further readings

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Appendix. Questionnaire

Target's perception of knowledge hiding: Please rate the following statements for your coworker(s) when you request them for some knowledge.

TPKH1: My fellow colleagues often communicate only part of the whole story to me.

TPKH2: My fellow colleagues often twist the facts to suit their needs when communicating with me.

TPKH3: My fellow colleagues often leave out pertinent information or facts when communicating with me.

Benign envy: Recall a situation in which you think your coworker(s) had better knowledge than you. Please indicate how you thought and felt in that situation.

BE1:I felt benign envy (rashk) toward the other for having knowledge.

BE2:I wanted to have that knowledge as well.

BE3:I felt inspired to get knowledge myself.

BE4:I thought about what it would be like to have knowledge.

BE5:I wanted to put in effort to obtain knowledge as well.

Creative self-efficacy: Please rate the following statements for yourself.

CSE1:I have confidence in my ability to solve problems creatively.

CSE2:I feel that I am good at generating novel ideas.

CSE3:I have a skill/tendency for further developing the ideas of others

Supervisor support for creativity: Please rate the following statements for your supervisor.

SSC1:My supervisor discusses with me my work-related ideas in order to improve them.

SSC2:My supervisor gives me useful feedback about my ideas concerning the workplace.

SSC3:My supervisor is always ready to support me if I introduce an unpopular idea or solution at work.

Employee creativity: Please rate this employee for his/her creativity to the extent to which he or she:

EC1:This employee identifies opportunities for new ways of dealing work.
EC2:This employee seeks new ideas and ways to solve problems.
EC3:This employee generates novel, but operable work-related ideas.
EC4:This employee demonstrates originality in his/her work.

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