The missing link: Knowledge hiding behavior and project performance

ABSTRACT

Purpose

This study examines how project leaders' knowledge hiding influences project performance via project employee creativity employing the conservation of resources theory. Further, we investigate how mastery motivational climate (MMC) moderates the project employee creativity and performance relationship.

Design/methodology/approach

By employing a purposive sampling design, two-wave data (N=245) was collected with a gap of three weeks from employees working in R & D departments in private software development project-based organizations located in Lahore, Pakistan.

Findings

Results suggest that leaders' knowledge hiding does impede project employee creativity and negatively influence project performance. In addition, MMC was found to accentuate the relationship between project employee creativity and project performance.

Practical implications

This study offers notable insights into the knowledge-hiding literature from a top-down perspective within the project management domain relating to IT projects. This study's findings pose implications for practitioners and project-based organizations interested in counteracting the adverse effects of knowledge hiding on project performance.

Originality/value

This study proposes a novel approach to job design by considering resource scarcity caused by a leader's knowledge hiding as a job demand, along with the Achievement Goal perspective driven by a mastery or goal orientation. To understand these two perspectives, we rely on the conservation of resources (COR) theory to describe how leader's knowledge hiding affects project performance through project employee creativity, moderated by mastery motivational climate.

Keywords: Leader knowledge hiding, Project employee creativity, Mastery motivational climate, Project performance, Conservation of resources theory

Introduction

Leader's knowledge hiding has recently garnered researchers' interest as limited literature is available investigating the dark side of knowledge management among project teams (Locatelli et al., 2022; Zhang et al., 2022). Leader's knowledge-hiding behavior refers to a deliberate attempt by the leaders to withhold or hide the knowledge that employees may expect from them (Connelly et al., 2012). Leader's knowledge hiding hampers project employees' creative behaviors due to the lack of information about a particular problem and previous knowledge about the task that must be completed (Amabile, 1983; Lee et al., 2010). As a result, knowledge hiding negatively affects both the project team members and organizations, and the projects are more likely to face delays and overruns, thus negatively influencing project performance (Men et al., 2020; Serenko & Bontis, 2016).

Prior studies focused on how employees' knowledge-hiding behavior can hamper their creativity. However, 'this does not imply that leaders never hide knowledge [from employees]' (Connelly & Zweig, 2015), and it is important to understand how a project leader's knowledge hiding behavior can affect project team member's creativity. Connelly et al. (2012) assert that employees consider knowledge as a valuable resource. When leaders hide knowledge from them, their resources are depleted as they get reduced information and knowledge, which decreases their ability to conceive and generate creative ideas (Bartol & Srivastava, 2002), ultimately affecting their creativity. Despite this argument, the literature on the harmful consequences of leaders hiding their knowledge is scarce (Arain et al., 2021), particularly in a project context. This study addresses this critical gap and examines how a leader's knowledge hiding impedes project employee's creativity, negatively influencing project performance. Recently, Nauman et al. (2024) indicated that industries like IT heavily rely on knowledge,

thrive on robust knowledge exchange, and are vital for individual career growth and enhancing organizational competitiveness through building intellectual capital and competency. So, a plausible reason for a leader's knowledge-hiding may be due to the competitive nature of the IT industry in Pakistan, where the project leaders may fear being replaced by more young and competent employees whom the firms can hire at lesser remuneration. So, due to a fear of being replaced, a leader might hide knowledge and provide little information to subordinates to maintain control and dominance in decision-making. Additionally, the study intends to examine organizational strategies aimed at mitigating the adverse effects of knowledge hiding on project employee creativity and enhancing the beneficial outcomes and effects of employee creative output on project performance. We acknowledge that in most cases, leaders are unlikely to engage in knowledge hiding to such an extreme degree that it completely jeopardizes the project's success, which would be counterproductive to their own interests as well. However, there can be certain scenarios where leaders may still engage in selective or partial knowledge hiding, driven by factors such as perceived knowledge ownership, fear of being replaced, or a desire to maintain control and dominance in decision-making. In such cases, while leaders may not intentionally derail the entire project, their knowledge hiding behavior could still have a detrimental impact on employee creativity and project performance to a certain extent. This could manifest in the form of delays, suboptimal solutions, or inefficiencies in the project execution, rather than outright project failure.

We introduce the intervening role of employees' creativity to explain the association between leader's knowledge hiding and project performance. Employee creativity pertains to creating and exploring fresh, job-related ideas and knowledge that may be useful in enhancing project performance (Amabile, 1988; Oldham, 2003; Shalley & Zhou, 2008). Knowledge hiding

as a job stressor closes off the knowledge exchange (Connelly et al., 2012), limiting opportunities for employees to understand and find solutions to problems efficiently (Lee et al., 2010). Following the studies of Fong et al. (2018) and Zhang and Min (2019), we propose that a leader's knowledge hiding will impede project team member's creativity and the ability to solve problems, which may negatively influence project performance.

We also introduce organizational motivational climate that can enhance the positive impact of employee creativity on project performance (Caniëls et al., 2019). Such a motivational climate can be subdivided into 'mastery motivational climate' (MMC) and 'performance motivational climate' (PMC). Mastery motivational climate (or task-involving) emphasizes self-development and building competence through learning and mastery of skills for completing work-related tasks (Ames, 1992). On the other hand, a performance motivational climate (ego-involving) focuses on employees' efforts to achieve recognition for individual competencies and often involves social comparisons and competition with coworkers. MMC boosts more adaptive behaviors, such as increased effort and a positive attitude, while facing challenges. PMC, on the other hand, promotes negative project team member behaviors, such as decreased motivation, feeling stressed, seeking out easy tasks and giving up when faced with challenges (Roberts et al., 2007). In this study, we propose mastery motivational climate (MMC) as a personal resource and propose that MMC would accentuate the project employee's creativity and project performance relationship by creating a conducive environment for project team members to acquire knowledge and skills that help them to become skilled in completing assigned project tasks by uncovering new ideas.

Accordingly, this study poses a primary research question: How does project leader knowledge hiding influence project performance via project employee's creativity? Further, what

boundary condition can accentuate the effects of employee creativity on project performance? Following Moh'd et al. (2021), we have taken the job design perspective and propose resource scarcity due to a leader's knowledge hiding as a job demand that drains project employee resources. In addition, we have considered the Achievement Goal perspective, which emerges predominantly from mastery or goal orientation. When the project team members perceive that their leader's information hiding may influence project performance, they strategize and acquire the necessary competence and resources to avoid failure (Nerstad et al., 2013). We propose that mastery of motivational climate as a resource would enhance employee creativity and improve project performance (Moh'd et al., 2021). To understand these two perspectives, we rely on the conservation of resources (COR) theory presented by Hobfoll (2001) to describe how a leader's knowledge hiding affects project performance through project employee creativity with the moderating role of mastery motivational climate (MMC).

This study has various contributions. First, it bridges the gap between theory and practice by contributing to the literature on knowledge management, project management, and organizational behavior. It offers a unique perspective on the bad side of knowledge management and how it influences project performance. Second, the COR theory is extended by introducing leader's knowledge hiding as a job stressor that depletes project employees' resources.The leader's knowledge hiding leads the team members to perceive a lack of resources in information sharing, thus hampering their creativity and consequently lowering project performance. Third, it proposes mastery motivational climate as a resource enhancing project team members' creativity and, consequently, project performance. Thus, this study extends the nomological network of leader's knowledge hiding. Fourth, it employed two perspectives, job design and goal achievement, in the project context and extended the implications of the Conservation of

Resources Theory in the project management context, which has been less employed in this context (Mubarak et al., 2022).

The study contributes to practice as the findings can be useful for organizations and project managers to understand the negative effects of a leader's knowledge-hiding behavior on project performance via project team members' creativity. It emphasizes the importance of promoting a mastery motivational climate within project teams, which can nurture employee creativity and curb the negative outcomes of knowledge hiding. The study provides insights for organizations to develop strategies and interventions to address knowledge hiding among project leaders and create a supportive environment that promotes knowledge sharing and employee creativity.

Theory formulation and hypotheses

Most studies use Social Exchange Theory (SET) as the overarching mechanism to explain how individuals reciprocate in organizational interactions (Feng et al., 2022; Hameed et al., 2023; Nauman et al., 2024). Yeboah (2023) argues that knowledge sharing may vary among different customers or clients, industries, and economies; therefore, further investigations are required to assess the type of knowledge sharing in different organizational contexts (Yao et al., 2023). So, this study leverages to further SET with a knowledge-based view (KBV) by assessing the response to knowledge hiding and its subsequent impact on performance among project-based information technology (IT) firms. Due to the dynamic nature of roles and positions individuals hold within the organizations, KBV can assist in understanding the tacit knowledge and identify the challenges associated with knowledge sharing in project settings (Serenko & Bontis, 2016). The current study expands the theoretical framework through the intervention of the Conservation of Resources (COR) theory, which argues that the team members have personal

resource reservoirs to cope with stress and adversity in their environment and accomplish their work (Hobfoll, 1989). The intervention of COR within the existing SET framework can help to predict the project team members' reciprocity when they witness their leader deliberately hiding information in a knowledge-based setting. Liao et al. (2022) suggest exploring COR as a proactive coping strategy and examining how team members invest resources rather than merely conserving them when they face stressful circumstances at work and how such coping strategies impact performance. Therefore, this study addresses a similar concern when team members face a stressor such as deliberate knowledge hiding by their leader, they invest their intellectual resources, such as creativity, with the interaction of mastery motivational climate to cope with the situation and how it impacts project performance. Project leaders tend to consider knowledge as the most valuable resource they intend to retain and regard as unique compared to other coworkers' know-how, know-why, and know-when. Knowledge management literature recognizes knowledge as a heterogeneous and inimitable source of competitive advantage. It is common for employees to fall prey to "knowledge is power" and, therefore, keep their knowledge hidden from their coworkers. Building on this conservation of resources perspective, we assert that when project leaders hide critical and crucial project-related knowledge from their followers, it can lead to stress, lack of resources, and social isolation of their followers, thus resulting in poor project performance (Jahanzeb et al., 2020). Without the requisite adequate knowledge of the project tasks, the project employees may lag in developing and implementing effective solutions (Amabile, 1983), hindering their creativity and ability to complete the project (Hobfoll et al., 2018).

Additionally, when employees cannot acquire project-related knowledge from their project leaders, they may acquire external knowledge and develop relevant skills and competencies such as mindfulness, self-efficacy, network building and relationships to achieve their tasks. This helps them accomplish their tasks but also supports them in creating a pool of resources for them (Hobfoll et al., 2018). This process of self-development and building competencies through learning (Ames, 1992) is the mastery motivational climate (MMC) within project-based organizations. It facilitates flexible behaviors (Černe et al., 2014) required for successful project completion. Moreover, this study focuses on MMC as an essential resource that can accentuate the positive link between project employees' creativity and project performance. Employing resource acquisition tenet of COR theory (Halbesleben et al., 2014; Hobfoll, 2001), we propose that project team members working in a mastery motivational climate are motivated to acquire valuable resources such as knowledge, skills that expedite their learning, growth, exploration of new ideas, and mastery of tasks by investing current resources (Yao et al., 2023). This consequently positively impacts project performance.

Knowledge Hiding Behavior by Leaders and Project Performance

Knowledge hiding is the opposite of knowledge sharing. While knowledge sharing leads to improved work practices by sharing experiences and best practices to perform the project tasks effectively (Wang et al., 2014; Werner & Dickson, 2018), knowledge hiding deteriorates project performance (Connelly et al., 2012; Zhang & Min, 2024). When project employees observe that the project leader or coworkers are hiding or deliberately not sharing the relevant project details, this develops the project employees' perception of leader’s knowledge hiding (Connelly et al., 2012).

The seminal work by Connelly et al. (2012) defines knowledge hiding as 'deliberate withholding or concealing of requested knowledge by another person' (p. 65). This behavior is different from knowledge hoarding and knowledge sharing, as it involves a deliberate attempt by the leader to hide information or knowledge from someone who needs it. On the other hand, knowledge hoarding and sharing does not essentially mean that somebody may ask for information. The main motivation for the project leader's knowledge hiding is maintaining a monopoly on the specific project knowledge and retaining psychological ownership. Project leaders may also think having more control over projects will help them maintain their status or power.

Recent literature suggests that the knowledge-hiding trend is more prevalent in top-down relationships than peer-to-peer relationships (Arain et al., 2021). However, limited and contrasting evidence exists regarding how knowledge hiding impacts project performance (Bernatović et al., 2022). For example, the study by Evans et al. (2015) demonstrates that coworkers may become more efficient and creative due to project leader’s knowledge-hiding behavior as they rely more on their resources, thus developing their independent knowledge management skills. In contrast, other research has found that the knowledge-hiding behavior of the project leaders can impede the flow of knowledge and, thus, negatively affect the project performance (Fong et al., 2018; Zhang & Min, 2021). This is specifically true to meet budgetary and time requirements as well as customer expectations (Gallegos et al., 2006; Shenhar, 2004). Zhang and Min (2024) found that project manager’s knowledge hiding negatively influences team performance through team psychological safety and transactive memory systems. There may be several reasons explaining this behavior of project leaders, such as the sense of psychological ownership of knowledge (Xiong et al., 2021), perception of knowledge as core

competence (Huo et al., 2016) and private intellectual property (Xiong et al., 2021). Thus, we hypothesize that:

H1: Leader's knowledge-hiding behavior is negatively associated with project performance.

Mediating role of project employee creativity

The knowledge-hiding behavior of project leaders can cause job stress, aggression, and distress to the project team members (Černe et al., 2014; Kmieciak, 2024), leading them to seek out and acquire other sources of knowledge (Wang et al., 2018) and become less dependent on the project leader. This can provoke the project team members to develop their knowledge management skills and competencies to become self-reliant. As a result, project team members may start thinking outside the box and become more creative in solving specific project-related issues, which may lead to novel ideas (Yao et al., 2023).

On the contrary, deliberate knowledge hiding can impede the creativity of project team members due to limited access to information and ideas, especially if the main source of knowledge is the project leader. Employee creativity is essential for project performance (Ahmed & Sigamony, 2020) as each project is unique and complex and requires a wide range of knowledge to complete various tasks, either through the generation of new knowledge or improvisation in the existing knowledge to deal with the uncertainties in the project (Merrow, 2024). In these situations, the project team members need effective support from their project leaders, who have more experience and knowledge related to the projects. An absence of such guidance can hamper the project performance and cause delays in accomplishing various tasks (Zaman et al., 2023) . Even if the project team members rely on their competencies and skills, there may still be an impact on the project performance without the experiential knowledge of

the project leaders (Zia, 2020). Additionally, if the psychological needs of the employees related to the job are not fulfilled, it can negatively affect their well-being and lead to self-protective, anti-social or destructive behaviour (Nunes et al., 2024). These behaviours can ultimately hinder project performance.

In IT-related projects, there is an extensive exchange of knowledge required between the team leads and members to fulfill the project requirements. The team leads are the main source of knowledge and serve as a link between team members and the clients. This argument has been substantiated recently by Nauman et al. (2024), who argue that leaders concealing knowledge can harm employee creativity, influencing the innovative performance of organizations reliant on tacit knowledge sharing among members. Leaders and supervisors must embrace their roles as knowledge facilitators, and if such knowledge is concealed, it may lead to negative behavioral outcomes for the employees. In light of the above discussion, we posit that project leader knowledge hiding behavior will negatively influence the project employee's creativity in finding solutions to problems, consequently hindering project performance. Keeping in view the detrimental impacts of insufficient knowledge exchange from the project lead, we presented the following hypothesis:

H2: Employee creativity negatively mediates the association between leader knowledge hiding and project performance.

The moderating role of mastery motivational climate

Following Achievement Goal Theory (AGT), the motivational mastery climate within an organization can be a key catalyst (Nicholls, 1984) to strengthen the team member's competence (Černe et al., 2014) to perform their tasks effectively through knowledge exchange and ultimately enhancing project performance. The team member’s achievement goals are influenced

by their personal goals and the motivational climate created within the organization (Dweck, 1986; Elliot, 1999). When project team members recognize that the knowledge hidden by the project leader can impact project performance, they may try to enhance their skills to save the project from failure (Nerstad et al., 2013). Project team members feeling deprived of work-related knowledge (Loewenstein, 1994) further pushes them to acquire relevant knowledge through various ways to fulfill their tasks (Veeravalli et al., 2019). This may involve developing competencies such as learning new skills or engaging in team-building activities tailored to the needs of their assigned tasks to enhance project performance (Imam & Zaheer, 2021).

In IT-based projects, in particular, team members may be motivated to cultivate a sense of self-reliance and intrinsic motivation to accomplish their tasks and enhance project performance. Besides, the perceived meaning of success or failure in group tasks may foster team members' creativity, further enhancing project performance. Moreover, the self-motivation of the project team members to excel in their careers and perform well compels them to go the extra mile to fulfil the project tasks and learn new competencies and skills for their personal growth. Thus, a higher motivational climate can enhance employee creativity and positively influence project performance. Based on this discussion, we hypothesize that:

H3: The effect of employee creativity on project performance will be conditional on the master motivational climate, such that the positive association between employee creativity and project performance will be stronger for employees who experience higher levels of mastery motivational climate.

H4: The indirect effect of leader knowledge hiding on project performance through employee creativity will be moderated by a mastery motivational climate such that a more mastery motivational climate leads to high project performance.

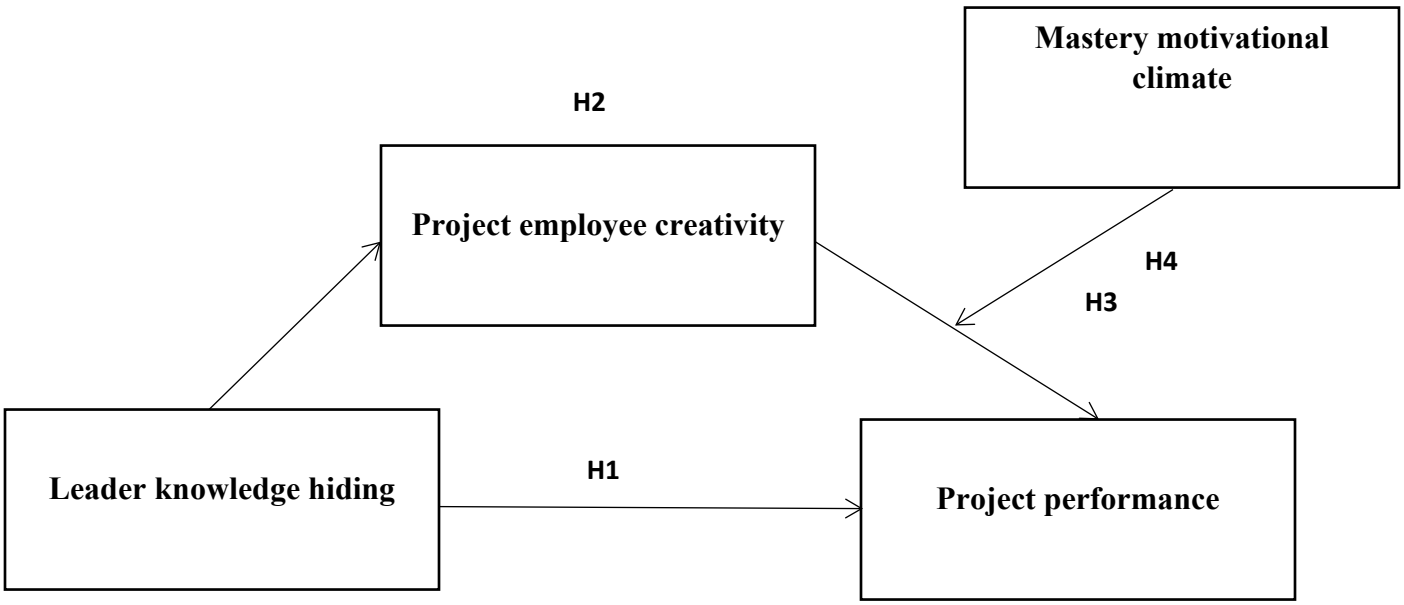


***Figure 1*: Conceptual Framework**

Source: Authors own creation

Methodology

Sample and procedure

The study aimed to gather data from software/IT engineers working in Pakistan's research and development (R&D) departments of private software project-based organizations. A purposive sampling design was utilized, and data was collected via online surveys from software/IT engineers only as they are involved in creativity and problem-solving, influencing project outcomes. The data collection process involved visiting companies based in Lahore that are

registered with the Pakistan Software Export Board. Prior permission was obtained from the HR managers to conduct the survey. The HR managers were apprised of the scope of the research and requested voluntary participation from the employees. All full-time employees from these companies were selected for the survey after obtaining their consent. The respondents agreed to an invitation letter stating the study's objective and including a confidentiality assurance.

We adopted a time-lagged design to avoid common method bias. The data was collected in two waves, three weeks apart (Pesämaa et al., 2021; Podsakoff et al., 2012). In time wave 1 (T1), respondents were requested to rate the perceptions relating to the independent variable (leader's knowledge hiding) and the mediating variable (project employee creativity). In time wave 2 (T2), the respondents rated the items relating to the moderating variable (i.e. mastery motivational climate) and the dependent variable (project performance).

Around 550 questionnaires were distributed among employees in the R & D department of private software development project-based organizations. The responses from those respondents who failed to check responses for all items were removed from the study. Further, we included one attention-check item at a random point in each survey (Time 1 and Time 2), i.e. "This is an attention-check item". Please select 'agree" to ensure participants read the questions carefully. The survey was terminated if participants answered incorrectly to the attention check item. 245 usable responses were included in the study. Therefore, the overall response rate was around 44.5 %—the sample comprised 95 females (41.2%) and 150 males (58.8%). Of many respondents, 172 (70.2%) were aged between 20 and 30 years, while the remaining 73 (29.8%) were aged between 31 and 55. Regarding the qualification, 166 (67.6%) respondents possessed graduate degrees, while the remaining 79 (33.4%) had Masters and PhD degrees. 154 (62.8%) respondents had work experience up to five years, while the remaining 91 (37.2%) had work

experience between six to fifteen years. Here, the unit of analysis is the project, while the unit of observation is the individual employee.

Measurement of Variables

Leader knowledge hiding

The 3-item scale was adapted to measure leader knowledge hiding behavior developed by Serenko and Bontis (2016). As earlier employed by Donate et al. (2022), we adapted this scale, replacing "My fellow colleagues" with "My leader" for intra-organizational knowledge hiding. Items included in this measure are characterized by hiders (i.e. leaders) intentionally deceiving their subordinates with a knowledge request, capturing the central dimensions of "play dumb" and 'evasive" knowledge hiding is, therefore, suitable in our context. A Likert scale was used to measure the items with options ranging from 1 (strongly disagree) to 5 (strongly agree). Sample items include "My leader often twists the facts to suit his needs when communicating with me" (Cronbach alpha = 0.86)

Mastery motivational climate

A 6-item scale was used to assess mastery motivational climate that was adopted from a scale developed by Nerstad et al. (2013). The items were measured on a Likert scale with responses ranging from 1 (not at all) to 5 (to a large extent). The sample items include "In my department/workgroup, one is encouraged to cooperate and exchange thoughts and ideas mutually" (Cronbach alpha = 0.91).

Project employee creativity

Project employee creativity was assessed using a 4-item scale adapted from Zakariya and Bashir (2020), originally developed by Tierney et al. (1999). The items were measured through a Likert

scale with options ranging from 1 (strongly disagree) to 5 (strongly agree). The sample item includes "I identify opportunities for new ways of dealing with work" (Cronbach alpha = 0.90).

Project performance

Project performance was measured through a 7-item scale that was developed by Serrador and Pinto (2015). The items were measured on a Likert scale with anchors ranging from 1 (not at all) to 5 (to a large extent). Sample items include "How did the project sponsors and stakeholders rate the success of the last project?" (Cronbach alpha = 0.93).

Control Variables

We used an analysis of variance (ANOVA) to see if there were any significant changes in the dependent variable due to demographic factors such as age, gender, education, and experience. The ANOVA results for age ($F = 3.02$, $p <. 05$) were found to be significant. As a result, we considered this factor in further analysis.

Results

Common Method Bias

A possible issue that can affect research findings is the presence of Common Method Bias (CMB), particularly when data are collected from only one source (Podsakoff et al., 2003). To address this concern, the study employed Harman's single-factor test, and all the items related to leaders' knowledge hiding, project employee creativity, mastery of motivational climate, and project performance were loaded onto a single factor. A single factor explained was less than 50 percent, indicating the absence of common method bias (Podsakoff et al., 2012; Yap et al., 2018).

The Kaiser-Meyer-Olkin (KMO) value for assessing the sampling adequacy was 0.90, higher than the threshold of 0.80, thus indicating that the item data were adequate for factor analysis. Due to the limitations of Harman's single-factor test, we apply the full collinearity assessment approach suggested by Kock (2015). All values of VIFs in the current model are 1.09, 1.15, and 1.19, far less than the threshold of 3.3 (Kock, 2015), suggesting the absence of common method bias. Further, CMB was also assessed by applying the latent factor model test. The results show a difference in the standardized regression weights of the entire items, which was less than the threshold of < 0.20. This indicates that the items used to tap perceptions were free from common method bias in the present study.

The methodology employed by Armstrong and Overton (1977) was used to examine non-response bias. Following the method used by Singh et al. (2023), the respondents were categorized into two groups based on their response times, namely the first quartile (early respondents) and the third quartile (late respondents). The first quartile was considered respondents, while the third was classified as non-respondents. The results of the t-tests conducted to compare the four constructs in both groups show no significant variations ($p > 0.05$, suggesting that non-response bias is not an issue.

Measurement model

AMOS v.24 was used to assess the goodness of fit via confirmatory factor analysis. According to Carmines (1981), a normed chi-square value of below 3 shows a good fit, whereas an RMSEA value less than 0.05 and TLI and CFI values more than 0.90 indicate the model to be a good fit (Hu & Bentler, 1999; Kline, 2005).

The results from Table 1 that the model with four factors was a better fit ($\chi 2$ /df = 2.11, RMESA= 0.06, CFI= 0.94, GFI= 0.90, TLI= 0.93, NFI =0.94 and SRMR= 0.04), than a single

factor CFA, which specified a poor fit ($\chi 2$ /df = 8.22, RMESA= 0.18, CFI= 0.57, GFI= 0.51, TLI= 0.53, NFI= 0.52 SRMR= 0.19). The goodness of fit for a four-factor CFA model also established the discriminant validity of all the variables.

Table 1: The Alternative Model Test

Model		$\chi 2$/ df	RMES	SRM	GFI	NFI	TLI	CFI
LKH, MMC, PEC, P.P.	Four factors	2.11	.06	.04	.90	.90	.93	.94
MMC, PEC, P.P.	Three factors	3.03	.09	.10	.83	.82	.89	.88
PEC, P.P.	Two factors	6.44	.18	.17	.57	.63	.64	.69
P.P.	One factor	8.22	.18	.19	.51	.52	.53	.57

Note: N=245, LKH= Leader knowledge hiding, MMC= Mastery Motivational Climate, PEC= project employee creativity, PP= Project performance

Source: Authors own creation

Convergent and discriminant validity

Table 2 below reveals that all items' standardized factor loadings exceeded 0.70. The composite reliability (C.R.) values for leaders' knowledge hiding, mastery motivational climate, project employee creativity, and project performance are 0.862, 0.910, 0.910, and 0.929, respectively. Moreover, the AVE values for leader knowledge hiding, mastery motivational climate, project employee creativity, and project performance are 0.677, 0.627, 0.696, and 0.651, respectively. All the values of C.R. and AVE were above the thresholds, indicating that the convergent validity for all variables is satisfactory (Bagozzi & Yi, 1988; Gaskin & Lim, 2018).

Table 2: Confirmatory Factor Analysis

Construct	Items	Factor Loading	CR	AVE
Leaders knowledge hiding			.862	.677

	LKH1	0.884		
	LKH2	0.807		
	LKH3	0.773		
Mastery motivational climate			.910	.627
	MMC1	0.745		
	MMC2	0.790		
	MCC3	0.760		
	MCC4	0.851		
	MCC5	0.780		
	MCC6	0.824		
Project employee creativity			.901	.696
	PEC1	0.861		
	PEC2	0.846		
	PEC3	0.780		
	PEC4	0.843		
Project performance			.929	.651
	PP1	0.718		
	PP2	0.880		
	PP3	0.805		

PP4	0.846
PP5	0.846
PP6	0.760
PP7	0.824

Note: C.R. = Composite Reliability; AVE = Average Variance Extracted. LKH= Leader knowledge hiding, MMC= Mastery motivational Climate, PEC = project employee creativity, PP= Project performance.

Source: Authors own creation

Correlation analysis

SPSS v.21 was used to check the correlation between variables. Table 3 shows that leaders' knowledge hiding significantly and negatively relates to employee project creativity (r = - 0.289, $p < 0.01$) and project performance (r = - 0.197, $p < 0.01$). The Cronbach alpha (α) values for all variables are also above the threshold of 0.7, indicating that the measures used were reliable (Nunnally, 1978).

Table 3: Descriptive Statistics, Reliability, Correlations

		Mean	SD	1	2	3	4	5
1	Age	1.36	1.07	-				
2	Leader's knowledge hiding	3.23	1.11	0.054	***(0.86)***			
3	Mastery motivational climate	3.15	1.01	-0.083	-0.051	***(0.91)***		
4	Project employee creativity	2.95	1.11	- 0.053	- 0.182**	0.352**	***(0.90)***	
5	Project performance	2.97	1.09	- .173**	- 0.180**	0.440**	*0.508***	***(0.93)***

Note: N = 245; the diagonals (in bold italic) represent the shows the scale reliability); Note: *p < 0.05; **p < 0.01.

Source: Authors own creation

Hypotheses testing

To test the mediation, moderation and moderated mediation model, simple linear regression via SPSS was used to check the direct effect by applying Model 14 in PROCESS macro, as Hayes (2018) suggested.

Direct effect

The results of regression analysis (Table 4) show that leaders' knowledge-hiding behavior has a significant and negative impact on project performance ($\beta = - 0.180$, $p < .001$), therefore supporting $\mathbf{H_1}$.

Mediation analysis

The direct effect of leader's knowledge hiding indicates a significant and negative impact on project performance (LLCI = -0.205, ULCI = -0.003). Furthermore, the indirect effect of leaders knowledge hiding via project employee creativity on project performance is negative and significant for all levels of mediation The 95% confidence intervals for the high and low indirect effect (i.e. -1 S.D., Mean, and +1SD) show that zero does not lay between the lower (LLCI = -.130, ULCI = -.003), mean (LLCI = -.150, ULCI = -.017) and the upper confidence interval limits (LLCI = -.218, ULCI = -.022) **(Table 4).** Hence, the results show the pertinence of full mediation. So, the results support **H_2**.

Table 4: Direct effect, indirect effect, and confidence intervals

	B	S.E	95% CI (Lower, Upper)
LKH → PP	-.180**	.06	----------
Direct effect	-.103*	.05	-.205,.-.008
Indirect effect	**LKH → PEC → PP**		
-1 S.D	-0.45	.02	-.130, .-003
Mean (0)	-.075	.03	-.150, -.017
+ 1 S.D	-.106	.05	-.218, -.022

Note: N = 245. Bootstrap sample size = 5000. CI = confidence interval. S.E. = standard error. **LKH= Leader knowledge hiding, MMC= Mastery motivational Climate, PEC = project employee creativity, PP= Project performance**

Source: Authors own creation

Moderation analysis

For **H_3**, the interaction effect between project employee creativity and mastery motivational climate on project performance was tested. The results reveal that the interaction (PEC X MMC) is significant and positive (B = 0.138, LLCI = 0.123, ULCI = 0.692) (Table 5). Hence, the results support **H_3**. Moreover, the simple slope analysis **(Figure 2)** also validates the results. The slope

of the high-mastery motivational climate is steeper than that of the low-mastery motivational climate, thus demonstrating a strengthening effect. Furthermore, the moderated mediation Index is also significant (B = -0.026, LLCI = -0.067, ULCI = - 0.01). Hence, the results support H4, however, in a reverse direction.

Table 5: Moderation and moderated mediation

	B	S.E	95% CI (Lower, Upper)
PEC X MMC	.135	.038	.061, .215
Age	- .145	0.09	-.363, -.007
Moderated mediation Index	-.025	.017	-.067, -.001

Note: N = 245. * p <0.05, ** p < 0.01

Source: Authors own creation

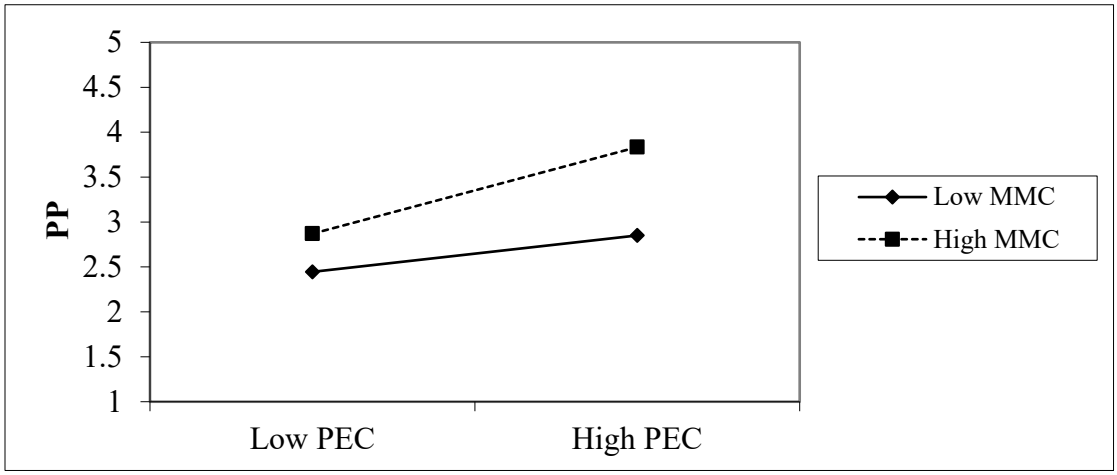
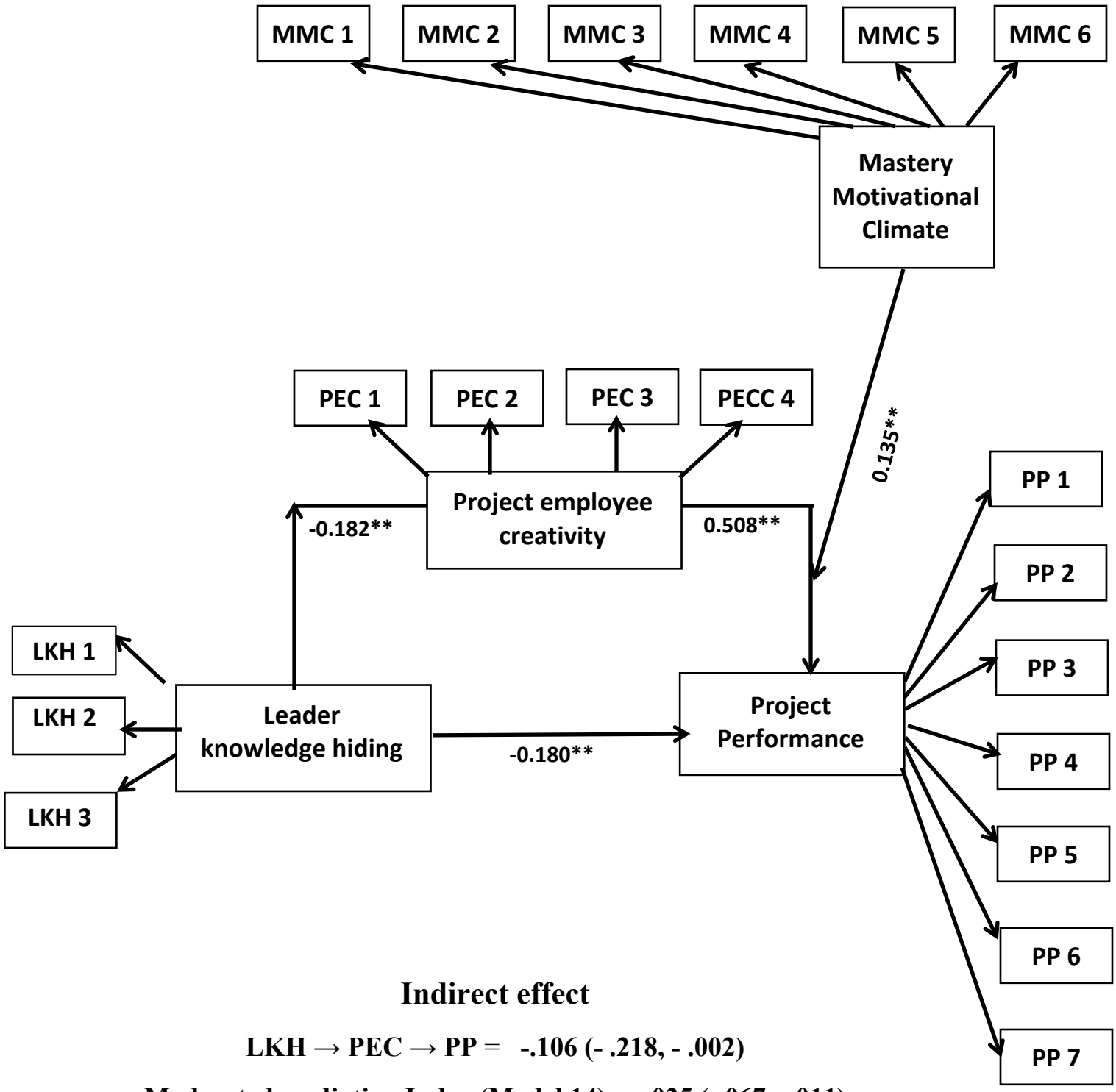


Figure 2: **Interactional effect of employee creativity and mastery motivational climate on project performance**

Source: Authors own creation



Indirect effect

LKH → PEC → PP = -.106 (- .218, - .002)

Moderated mediation Index (Model 14) = -.025 (-.067, -.011)

Confidence interval in parentheses

Figure 3: **Path wise results**

Source: Authors own creation

Discussion

This study's findings significantly contribute to the conservation of resource (COR) theory in the context of project management. Our results demonstrate how this theoretical framework can be applied to understand the complex dynamics of knowledge hiding, creativity, and project performance in IT project setting. The present study investigates the adverse effects of a leader's knowledge-hiding behavior on the project team member's creativity and project performance in IT-related projects. It sheds light on how the prevalence of mastery motivational climate can foster project employee creativity and enhance project performance. These findings contribute to COR theory by demonstrating how knowledge, a critical resource in project management, can be depleted through leader knowledge hiding. This resource depletion is consistent with the core principles of COR theory and demonstrates its applicability in project-based organizational contexts, particularly in IT projects where knowledge is a critical asset. The study further validates the conservation of resource theory (COR) by emphasizing the significance of acquiring, retaining and protecting valuable resources, including information and knowledge (Hobfoll, 1989). This directly relates to the practical aspect of ensuring that project leaders facilitate rather than hinder the flow of information. Further, it is established that COR theory applies to interpersonal relationships at the workplace as findings suggest that leader's knowledge hiding negatively influences project employee's creativity, which in turn lowers project performance.

Through this study, we infer that when project team members realize they are on their own due to project leader's knowledge-hiding behavior, they may initially feel distressed, which can affect their creativity and, ultimately, project performance. Considering the job design perspective (Moh'd et al., 2021), we found resource scarcity (for instance, access to critical

information) due to the leader's knowledge hiding as a job demand drains project employee resources. Such a scarcity of information or knowledge hampers creativity and problem-solving abilities and ultimately affects project performance. This study employs COR theory and suggests countering the downsides of knowledge hiding by introducing strategies that may help to promote knowledge through open communication and a mastery motivational climate that can help to replenish critical resources (such as knowledge).

This study also reveals that due to leaders ' knowledge hiding, the project employees may lack the ability to provide novel ideas to tackle challenging issues and problems. This lack of innovative problem-solving capabilities can have far-reaching consequences for project outcomes. This, in turn, may enhance project duration and budget and affect the quality of the product, thus negatively influencing project performance (Zhang et al., 2022). This inference is in line with the conclusions made by Bogilović et al. (2017) and Fong et al. (2018), who suggest paying more attention to knowledge-hiding behavior that hinders team's creativity and influences project team performance or project performance negatively (Zhang et al., 2022; Zhang & Min, 2019).

Nevertheless, considering the Achievement Goal Theory (Nicholls, 1984), when the team members tend to perceive that their leaders are hiding information, they may try to attain the necessary skill set to avoid failure, which can help to improve their creativity and facilitate knowledge transfer (Nerstad et al., 2013). Consequently, supervisor knowledge hiding can become an invaluable strategy for improving project performance (Evans et al., 2015). These findings are further supported by the achievement goal literature, emphasizing positive outcomes (Mehta et al., 2009) that can emerge predominantly from a mastery or goal-oriented approach, including enhanced creativity and improved project performance (Moh’d et al., 2021).

It is imperative to comprehend the contextual nature of IT project-based organizations where the tasks are often team-based and comprise diverse research and development activities. IT projects are complex (Imam & Zaheer, 2021) and consist of various technologies and tasks (such as coding and online analytical configurations), and team members often specialize in specific knowledge domains. In this dynamic project environment, team members may seek and share ideas to accomplish such projects. Besides, they may be empowered to identify new methods and suggest solutions to diverse issues (Nerstad et al., 2013). Acquiring the latest knowledge is also crucial for accomplishing IT project tasks, so team members may develop competence by finding innovative ways to achieve their tasks that can enhance project performance.

This study also confirms that a mastery motivational climate strengthens the relationship between project team members' creativity, and project performance (Bari et al., 2019). When project team members realize that their project leader is withholding information or twisting facts, they may become more motivated to find creative solutions for the assigned tasks (Imam & Zaheer, 2021) and enhance their competencies. So, keeping in view the unique job design in the IT related projects, mastery of motivational climate can be an essential resource for a project team member that replenishes their lost resources (Moh'd et al., 2021) due to project leader hiding behavior and may accentuate creativity that leads to better project performance (Bogilović et al., 2017).

Another novel contribution to project management and knowledge management literature is that the indirect effect of supervisor knowledge hiding on project performance through employee creativity was moderated by master motivational climate. The results were significant, however, in a reverse direction. This suggests that the interaction effect of mastery motivational

climate and employee creativity leads to high project performance. However, in the presence of supervisor knowledge hiding, the overall effect on project performance is negative. In other words, although the interactive effect of mastery motivational climate and employee creativity enhances project performance, the moderated mediation results suggest that the negative impact of supervisor knowledge hiding offsets the benefits of this positive interaction of mastery motivational climate and employee creativity on project performance and reduces project performance.

Implications

This study adds to the existing literature by examining the negative effects of leader's knowledge-hiding behavior on employee's creativity and project performance in the context of IT-related projects. This study offers four notable insights into the knowledge-hiding literature related to IT projects within the project management domain. First, this study looks at knowledge-hiding behavior from a top-down perspective (Arain et al., 2021) at the individual level. Second, it examines the role of mastery motivational climate as a resource to enhance project employee creativity that mitigates the negative impact of leader's hiding behavior on project performance (Bari et al., 2019). Third, the study observes the impact of leader's knowledge-hiding behavior on project performance by answering the call for more research on the relationship between knowledge-hiding and performance (Bernatović et al., 2022). Fourth, we employed both a job design perspective and a goal achievement perspective in the project context and extended the implications of the conservation of resources theory in the project management context, which has been less utilized in this context (Mubarak et al., 2022).

This study also has several contributions in terms of methodology. First, a two-wave study design was employed to reduce biases in the responses from respondents. Further, the

latent factor test and Harman's single-factor analysis were used to detect common method biases. Including attention check items improved survey data quality and increased survey results' validity and reliability. Moreover, non-response bias was also applied, further validating our results' accuracy and generalizability.

This study also demonstrates that the project employee resources such as learning, skills, and competence can interact positively with project employee creativity to improve the project completion process effectively. Furthermore, results indicate that by ensuring mastery motivational climate, IT project-based organizations can create a conducive environment for learning and knowledge exchange among project team members so they feel encouraged to devise new solutions and ideas for the projects. The results indicate that organizations should tackle the negative consequences of leader knowledge-hiding behavior by promoting open communication and transparency and creating a supportive working environment to develop the required competencies and skills for assigned tasks.

Another key aspect to be considered is the cultural context of projects. The difficulties in implementation may arise due to differences between Western and non-Western cultures (Imam & Zaheer, 2021). In a collectivistic society like Pakistan, which has a high power distance and hierarchical structure in organizations (Hofstede, 2001), there may be a greater social distance between project leaders and project team members, thus making knowledge sharing more challenging. In such a culture, it may be advantageous for project-based organizations to build the individual skillsets of project team members and focus on improvising communication channels to reduce the influence of leader knowledge-hiding behavior. Thus, organizations should cultivate a mastery motivational climate to promote adaptive behaviors and enhance the positive impact of employee creativity on project performance.

Another implication for project organizations is to ensure that supervisors do not hide knowledge that can influence project performance. Project organizations should regularly monitor supervisor behavior to ensure they share information and knowledge with employees. Organizations need to foster a culture of knowledge sharing to discourage supervisors from hiding knowledge. Knowledge management systems, training programs, and workshops can be conducted to encourage knowledge sharing. This training may include communication skills, conflict resolution, and leadership skills. This will help create an environment where employees feel challenged and empowered to master their skills.

In conclusion, this study highlights the importance of creating a mastery motivational climate that is characterized by focusing on collaboration and learning. Such a climate can encourage team members to develop their skill sets and engage in continuous learning. At the same time, mastery motivational climate can boost team members' creativity and ultimately improve the performance of IT-related projects.

Limitations and future directions

Our study possesses certain limitations and thus provides opportunities for future research. This study is cross-sectional and is limited in predicting causal relationships. So, future researchers may adopt a longitudinal design to address causality and social desirability bias. The sample was from the software development IT project-based organizations in the R&D department of Pakistan, and the findings presented here may reflect the specific organizational patterns. This limits the generalizability of our findings. Future researchers can adopt our research framework in other settings to see its applicability to a broader population. Lastly, this study found that the negative influence of leader knowledge hiding can offset the benefits of the combined effect of

mastery motivational climate and employee creativity on project performance. This needs further investigation and can be addressed by a qualitative research design.

Conclusion

In conclusion, this study provides evidence that when project team leaders hide their knowledge, the project team members' creativity and performance is reduced. The study reveals how leaders' knowledge-hiding behavior negatively influences employee creativity and reduces project performance. Additionally, the results suggest that a mastery motivational climate is an essential resource that improves the positive relationship between project employee creativity and project performanceus, These results have significant implications for organizations seeking to promote knowledge-sharing and creativity among their project teams. This research laid the foundation for future research to fully grasp the mechanisms explaining the relationship between leader's knowledge-hiding, employee's creativity, and project performance and to identify effective strategies for tackling the negative effects of leader knowledge-hiding behavior among project teams.

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