Strategies to mitigate knowledge hiding behavior: building theories from multiple case studies

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Abstract

Purpose – The purpose of this paper is to explore how firms can mitigate knowledge hiding behavior among their managers.

Design/methodology/approach – This study employs a multiple case study methodology by studying nine UAE based firms. Furthermore, 26 semi-structured interviews with senior managers are undertaken.

Findings – Based on the qualitative interviews and comprehensive data analysis, results unveil six strategies that firms can opt for in order to mitigate knowledge hiding behavior among managers (reducing chain of command, developing informal interaction among managers, introducing and implementing incentive policy, initiating easy performance appraisal, encouraging higher interdependency among managers and introducing open space work stations).

Research limitations/implications – This study has some limitations. First, the results of this study are not generalizable to a broader population. Second, this study explores behavioral patterns with respect to United Arab Emirates culture only. Second, the results presented in this study should be tested.

Practical implications – Firms can use the findings from this study to understand strategies that can help them to mitigate the knowledge hiding behavior of managers.

Originality/value – This study contributes to knowledge hiding literature by revealing strategies, which discourages knowledge hiding behavior in firms.

Keywords Knowledge hiding, Management, Case study, Qualitative study

Paper type Research paper

1. Introduction

In today's competitive global economy, a firm's success is attributed to effective knowledge management or knowledge sharing between exchange partners (Cheng *et al.*, 2008; Samuel *et al.*, 2011). These authors argued that there is a significant positive relationship between knowledge sharing, collaborative innovation capability, and a firm's ability to innovate. Hadaya and Cassivi (2009) also revealed that knowledge sharing enhances a firm's ability to continue to innovate in the long run while Ajmal and Kristianto (2012) stated that distance and sender capacity is important to minimize knowledge sharing uncertainty. While the importance of knowledge transfer in firms is now well established, researchers argue that knowledge hiding between managers can harm a firm's ability to be competitive and innovate well. Knowledge hiding is defined as "an intentional attempt by an individual to withhold or conceal knowledge that has been requested by another person" (Connelly *et al.*, 2012, p. 65). Černe, Hernaus, Dysvik and Škerlavaj (2017) claimed that knowledge hiding can affect a firm's ability to engage in effective product innovation while Connelly and Zweig (2015) cautioned that, although knowledge hiders rationalize their behaviors, they did anticipate harmed relationships. Extant research also sheds light on possible antecedents of top-down knowledge hiding. For instance, Butt and Ahmad (2019)

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empirically showed the antecedents of top-down knowledge hiding at an individual, interpersonal and firm-level. These authors claim that knowledge hiding is not driven by an individual's self-interest; rather, it is triggered by norms of expectations and reciprocity. Arain *et al.* (2018), on the other hand, argued that reduced trust between supervisor-supervisee relationship results in top-down knowledge hiding, and that psychological contract breach had direct and indirect positive effects on organizational identification through distrust (Rani *et al.*, 2018; Rao, 2019; Budhwar *et al.*, 2019). Serenko and Bontis (2016) found that job security compels managers in a company to engage in intentional knowledge hiding. Extant literature also expands our understanding of the potential consequences of knowledge hiding. For instance, recent studies suggested that knowledge hiding can eventually harm managers' productivity level and their ability to contribute to the best of their potential (Černe *et al.*, 2014; Connelly *et al.*, 2012).

While knowledge hiding literature is enriched with studies focusing on antecedents and consequences of knowledge hiding (Butt and Ahmad, 2019; Connelly *et al.*, 2019; Wang *et al.*, 2019; Butt, 2019; Arain2019; Connelly *et al.*, 2012), they do not tell us what firms can do to mitigate/control knowledge hiding behavior of managers. Furthermore, there are reasons to believe that firms can mitigate knowledge hiding behavior among managers if they opt for certain strategies. For instance, firms that regularly award incentives and bonuses to managers are less likely to experience knowledge hiding and superior work performance (Kaur and Soch, 2018). Furthermore, noted that firms that develop open space work stations are less likely to encounter knowledge hiding among their managers as open space work stations stimulate a friendly environment, which discourages knowledge hiding. Butt (2019) argued that firms can control knowledge hiding if they regularly monitor their manager's behavior and have a demotion system in place if managers are found to be hiding knowledge for no compelling reason. While these studies provide anecdotal evidence for mitigating knowledge hiding behavior, there are no empirical studies to validate these claims. Connelly *et al.* (2019, p. 781) explicitly called for studies that explore "under what conditions knowledge hiding is less likely to take place." This study fills this important gap in knowledge hiding literature. More specifically, this study aims *to unveil strategies that firms can adopt in order to reduce/mitigate knowledge hiding behavior*. Therefore, this study puts forward the following research questions to achieve the objective, as mentioned above:

RQ. What strategies firms can adopt to mitigate knowledge hiding behavior among their managers?

By examining this research questions, the paper contributes to knowledge hiding literature in four distinct ways: First, our study contributes to emergent literature on knowledge hiding perspective by unveiling strategies to mitigate knowledge hiding behavior, instead of purely focusing on antecedents and consequences of knowledge hiding. These strategies can support firms in mitigating knowledge, hiding behavior, and costs associated with it. Second, the results of our study are multidisciplinary and can be applied to other disciplines, including Human Resource Management, Operations Management, and Organizational Behavior. For instance, Connelly *et al.* (2019) from organizational behavior have made repeated calls for a study to explore factors that can mitigate knowledge hiding. Our study responds to their call. Third, our study presents an empirically driven model based on the data analysis, which depicts strategies that can prove helpful to mitigate knowledge hiding in firms. Fourth, our study contributes to practice by providing several constructive guidelines to firms that can discourage knowledge hiding within firms, as results suggest that even though knowledge hiding is a serious issue for firms, it can still be mitigated if firms opt for the right strategies.

2. Literature review

2.1 Knowledge hiding

Although there is reportedly some similarity or overlap between knowledge hiding and other similar constructs, e.g. knowledge sharing and knowledge hoarding, knowledge hiding is distinct from these similar constructs in at least two ways. In the first place, knowledge sharing is a voluntary process of transferring or disseminating knowledge from one person to another person or group in an organization (Connelly *et al.*, 2012). Furthermore, knowledge hiding is about one's willingness to hide knowledge from someone who has requested it, whereas, in the case of knowledge hoarding, it is not mandatory that someone request knowledge. Second, knowledge can be hidden in three distinct ways, such as evasive hiding, playing dumb and rationalized hiding (Connelly *et al.*, 2012). In evasive knowledge hiding, a knowledge hider intentionally tries to provide wrong and inaccurate information to the knowledge seeker or, in other instances, make a false promise of providing information in a future course of action. The second type of knowledge hiding is playing dumb in which the knowledge hider purports to show lack of familiarity with a requested knowledge, and finally, in rationalized hiding, the hider of knowledge begins to blame other parties for failing to provide the required knowledge or in some other cases, presents a justification of being unable to provide the knowledge needed (Connelly *et al.*, 2012).

Knowledge hiding can have negative outcomes for individuals and firms. For instance, a study by Connelly and Zweig (2015) reported that knowledge hiding between two co-workers adversely affects knowledge seekers' creativity and innovation ability. Fong and Slotta (2018), on the other hand, argued that knowledge hiding does not only impact individuals but firms as well. In particular, they contended that knowledge hiding in firms can result in higher turnover intentions among knowledge seekers. Knowledge hiding has also been the subject of critique in other management disciplines with different outcomes at individual or firm-level. For instance, Labafi (2017) from information management discipline cautioned firms that knowledge hiding is one of the major obstacles for firms to innovate and can harm managers' productivity. Additional studies further argue that knowledge hiding can result in a reduced trust between the knowledge seeker and perpetrator (Butt and Ahmad, 2019; Connelly *et al.*, 2019). Such reduced trust can adversely affect the customer's level of experience and loyalty towards a specific vendor (Izogo *et al.*, 2018). Furthermore, knowledge hiding can result in limited interaction among the connected parties, which can affect their ability to engage in brainstorming sessions, or developing plans to secure the long term interest of the connected firms (Butt, 2019). All in all, these studies argue that the negative impacts of knowledge hiding can span from individual to interpersonal and firm-level

2.2 Antecedents of knowledge hiding

2.2.1 Individual-level antecedents. Individuals can engage in knowledge hiding for many reasons. For instance, Labafi (2017) cautioned that knowledge hiding is one of the major obstacles for firms to innovate and can harm managers' productivity. This study further argued that trust deficit usually compels individuals to engage in a knowledge hiding within firms. He *et al.* (2009) revealed that trust is an essential element in knowledge sharing, and its absence can indirectly encourage individuals to engage in deliberate knowledge hiding in firms. Similarly, Huo *et al.* (2016) established that trust plays a mediating role between psychological ownership and knowledge hiding behavior and that justice further negatively moderated the relationship between territoriality and knowledge hiding. They further stated that interactive justice negatively moderates the relationship between territoriality and rationalized as well as evasive hiding. In addition, whether managers hide knowledge or not also depend on different types of leadership styles that they possess. For instance, a study found that extravert managers play dumb with their coworkers, but neuroticism discourages such a kind of knowledge hiding behavior (Fong and Slotta, 2018).

Extant literature suggested that knowledge hiding can indirectly serve as both an antecedent and consequence of managers' negative actions, mediated by trust and negative actions are both directly and indirectly linked to knowledge hiding over time

(Ann Louise Holten *et al.*, 2016). Additional studies claimed that managers may engage in knowledge hiding with workers for reasons, such as self-referenced fear of being isolated (Fang, 2017), or apprehension of being evaluated (Bordia *et al.*, 2006; Ford and Staples, 2008; Kundu *et al.*, 2019). Moving on, senior managers may also intentionally hide knowledge from their subordinates because of the fear of losing power if they deliver specific work-related knowledge to their subordinates (Butt, 2019). In other cases, they may intentionally hide knowledge if their career interests, which they have acquired or developed by investing a considerable amount of time and effort, become at a serious stake as a result of passing on the specific knowledge to their subordinates. Serenko and Bontis (2016) contended that knowledge hiding from one party may result in reciprocal knowledge hiding, or workers may hide knowledge because they may be losing out the competition in the firms. Butt and Ahmad (2019), on the other hand, empirically presented a multi-level and multifaceted model focusing on the possible antecedents of top-down knowledge hiding in firms. They found that top-level management hid knowledge from its subordinates not just for personal gains (job security, career prospects, etc.), but they do engage in such malpractices to stick to the norms of reciprocity. Butt (2019) has further presented antecedents of knowledge hiding in buyer-supplier relationship literature. For instance, this study found that lack of personal relationships, need to reciprocate, restriction from senior management and fear of strict evaluation compels managers across buying and supplying firms to deliberately hide knowledge from each other during their business interaction.

2.2.2 Firm-level antecedents. Individuals within firms may not necessarily hide knowledge for personal motives. Instead, there may be organizational-level antecedents of knowledge hiding. For instance, Butt and Ahmad (2019) found that senior management hides knowledge because, sometimes, they do not have permission from the higher-level authorities, or in other instances, when they see this practice prevalent in organizations and had to further comply with the norms of expectations. Butt and Ahmad's (2019) study also contended that individuals within firms usually comply with the norms of knowledge hiding. Nuruzzaman *et al.* (2019) indicated that the industry experience of managers acts as an ability to traverse external boundaries and thus has a greater effect on autonomous subsidiaries. In comparison, the previous work experience of managers acts as an internal boundary-spanning resource and thus has a smaller effect on less independent or R&D-engaged subsidiaries. Anderson *et al.* (2015) further argued that a key determinant of knowledge utilization at the targeting subunit is substitutive versus the complementary nature of the activities of the subunits. Besides, incentives and monitoring of headquarters are crucial factors affecting knowledge transfer (Gaur *et al.*, 2019). Nuruzzaman *et al.* (2018), on the other hand, claimed that imitative innovation best reflects the connection between access to foreign competition in domestic and international markets and firm innovation than radical innovation. They theorized that vulnerability to foreign competition within and outside the home country is directly related to the level of creativity that firms possess. Serenko and Boris (2016) further contended that individuals also hide knowledge when they perceive a lack of support from the organization to knowledge transfer. Moving on, knowledge processes (knowledge creation, retention and sharing) can be influenced by organizational structure, and governance and coordination mechanisms. For instance, drawing from the knowledge management and knowledge governance literature, Peltokorpi *et al.* (2006) found that while project-based organizational structures facilitate knowledge creation, they can hinder knowledge retention and sharing without adequate governance mechanisms.

Schotter *et al.* (2017) also argued that subsidiaries are usually embedded in the corporate networks of their parent firms, and further separate them from their geographically embedded peers. The dual embeddedness and connected dynamics create complex and often tacit boundaries, which affects the knowledge transfer practice. Furthermore, Bhaumi *et al.* (2019) discussed the convergence and divergence factors in emerging and developed market economies' corporate governance, concentrating on the role of corporate internationalization. They argued that foreign investments by emerging economy firms led to the upgrading of their governance capabilities, and became advocates for home-country policy changes that required local firms to develop similar capabilities. This ultimately streamlines knowledge sharing between firms.

While current literature on knowledge hiding is enriched with studies around antecedents and consequences of knowledge hiding in firms, they have not yet explored how knowledge hiding can be mitigated in firms. Furthermore, it is arguable that firms have an important role to play when it comes to diminishing knowledge hiding culture in firms. They can adopt specific plans and executed them to control the knowledge hiding behavior. For example, Connelly *et al.* (2012) stated that firms, which introduce incentives to their managers, when they volunteer their knowledge, may not only experience higher knowledge sharing practice amongst managers, but it can also result in reducing knowledge hiding behavior. On the other hand, developing open workspaces could also serve as an important means for firms to reduce knowledge hiding as this will encourage managers to more frequently approach and communicate with each other in a friendly environment. Also, an open space work station can result in higher collaboration between managers, and they are less likely to engage in knowledge hiding. A recent study by Abubakar *et al.* (2019) also argued that while knowledge hiding does exist in firms, there is certainly room for firms to develop a plan of actions to control knowledge hiding behavior. This study further contended that knowledge hiding can be controlled when firms create an ambiance in which managers fear that knowledge hiding can cost them their job, and perhaps, adversely affect their career progression. All in all, these studies suggest that firms can indeed reduce knowledge hiding among their managers subject to introducing and implementing certain strategies. Unfortunately, knowledge hiding literature is scant and mute on what strategies firms can develop in order to mitigate the culture of knowledge hiding. Connelly *et al.* (2019) also called for a study to empirically state how firms can work on reducing knowledge hiding culture among managers.

3. Methodology

This article adopts a multiple case study methodology by considering nine United Arab Emirates (UAE) based firms –unit of analysis in this study are firms. According to Eisenhardt (1989), multiple case studies are preferred as they enable comparisons that allow researchers to test if the findings can be replicated. Table 1 provides further information and an overview of the cases. Additionally, while the case study organizations do vary in terms of industry, they are similar in their overall size (large) and are all UAE based firms. Furthermore, while the case study firms do vary in terms of industry, they are similar in their overall size (large) and are all UAE based firms. Case study methodology has also been employed because of the unexplored nature of the research topic and because the main objective of the study is to answer "how and/or why" questions. In addition, a case study allows for an overall understanding of the complex phenomenon under investigation by allowing researchers to carry on an empirical inquiry that investigates a bounded contemporary phenomenon within a real-life context (Creswell, 2013). The case study also helps researchers to develop a detailed understanding of a complicated issue or object which can extend experience or add strength to what is already known through previous research (Yin, 2013).

3.1 Study sample and sampling

In this study, 26 senior managers from nine different firms were interviewed. Although it is evident that the senior managers are responsible for setting the organizational culture, they

Table 1. Profile of case study companies and interviewees

Organization type	Industry	Size	Staff	Position of interviewees	Length of interview
Case study I	Logistics	Large	20,000–30,000	Operations Manager (P1)	60 min
				Supply Chain Manager (P2)	70 min
				Business Unit Coordinator (P3)	60 min
Case study II	Automobile	Large	15,000–20,000	Logistics Manager (P4)	80 min
				Area Sales Manager (P5)	90 min
				Sales Manager (P6)	75 min
Case study III	Freight forwarder	Large	15,000–20,000	Customer Service Manager (P7)	90 min
				Operations Manager (P8)	90 min
				Sales Manager (P9)	80 min
Case study IV	Plastic	Large	15,000–20,000	Sales Manager (P10)	65 min
					60 min
				Accounts Manager (P11)	70 min
Case study V	Metal	Large	20,000–30,000	Customer Service Manager (P12)	75 min
				Sales Manager (P13)	80 min
Case study VI	Pet products	Large	25,000–30,000	Operations Manager (P14)	90 min
				Operations Manager (P15)	90 min
				Project Coordinator (P16)	85 min
Case study VII	Care spare parts	Large	20,000–30,000	Procurement Manager (P17)	75 min
				Procurement Manager (P18)	70 min
				Supply Chain Manager (P19)	67 min
Case study VIII	Paper products	Large	20,000–30,000	Area Operations Manager (P20)	90 min
				Procurement Manager (P21)	85 min
				Accounts Manager (P22)	60 min
Case study IX	Glass products	Large	25,000–30,000	Procurement Manager (P23)	90 min
				Customer Service Manager (P24)	85 min
				Customer Service Manager (P25)	85 min
				Procurement Manager (P26)	90 min

Note(s): a. Size determined based on employee numbers as per The World Bank classification; b. Employee figures are taken from annual reports and/or company websites

are also aware of the issues about knowledge hiding and usually have experience in developing policies/practices in order to control knowledge hiding. Furthermore, the sample was purposely drawn from multiple industries to discover whether firms converge towards the same strategy to mitigate knowledge hiding behavior or if there are any notable differences among the employed strategies. The respondents interviewed in this study belonged to different industries such as Logistics, Automobile, Plastic and Glass, Metal, Pet Products, and Care Spare Parts. These firms were chosen because they have been the victim of knowledge hiding but successfully overcame this issue. Moreover, the senior managers (participants) were designated at different positions (customer services manager, Operations

Manager) Table 1 provides additional information concerning the profile of firms and interviewees.

We relied on four different industry forums to explain the objectives of our research and to further exchange contact information with knowledgeable respondents. All contacts were then pooled, and knowledgeable respondents were selected using a purposive (expert) sampling method to begin the interview process. Besides, given it was very hard for researchers to locate additional participants knowing strategies to mitigate knowledge hiding, therefore, at the end of the interviews, we requested participants to facilitate contact with another participant (snowball sampling) who can provide further information on the phenomenon (Biernacki and Waldorf, 1981). This process resulted in a final sample of 26 interviews from nine different companies. Further details are provided in the table below.

3.2 Data collection

Data was collected through semi-structured interviews, as Yin (1994; 2003) argues that interviews are very interesting methods to tackle deep and complex issues (such as knowledge hiding). An interview protocol was developed following Creswell's approach (2013). All interviews were conducted in English throughout and lasted for 60–90 min 20 senior managers were based in the Northern part of the United Arab Emirates (including Ras Al Khaimah, Fujairah), while six respondents were based on the Southern side of UAE including Abu Dhabi and Al Ain, which lead to telephone interviews in those instances. Furthermore, most of the interviewees were locals (UAE based nationals). Theoretical saturation was achieved after 18 interviews, as an additional 8 interviewed yielded no new information (new themes stopped emerging). Therefore, 26 interviews were deemed enough for a data collection purpose (Mcckren, 1998, notes that is usually enough to interview 8 participants to reach a point of saturation). Therefore, 26 interviews were deemed enough for data collection purposes. To ensure data triangulation, we also collected data from additional (secondary) sources (company's reports and magazines, websites and social media), to explore strategies that firms have in place to mitigate knowledge hiding. These multiple and heterogeneous data sources contribute to developing a converging line of inquiry (Yin, 1994). Also, the interview questions were developed after engaging in a thorough brainstorming session. All questions were listed that came to the researchers' minds within the context of our research question. Once a list was developed, we began to cut down questions and topics that seem redundant. We also consulted scholarly literature to find out what kind of questions other researchers might have asked in studies of a similar topic. It is also pertinent to mention that the interview questions (interview protocol) were designed in a way that targeted specific managers (senior managers with knowledge on issues about knowledge hiding and further developing policies to tackle this issue). All questions were constructed in such a way that they fit for case study method analysis. An interview protocol is provided in Appendix 1

3.3 Data coding and analysis

To begin the coding process, we relied on Strauss and Corbin's (1990) model paradigm, which includes open, axial, and selective coding. Overall, two researchers' performed the coding process to maintain the rigor and to avoid any unbiased approach during the data collection process. As a first step, we read all the transcripts line-by-line and sorted the data into incidents, events, and acts and were assigned a specific code to represent theses. All codes having similar traits were placed together to formulate a category. Once relevant theoretical categories (open space workstations) emerged through open coding, we performed a rigorous content analysis around each category to see how these categories cross-cut or interlinked. That process is termed as axial coding. Also, we applied axial coding to reassemble the data that was fractured during open coding. It is important to mention that the coding process was facilitated through NVIVO 10 software to observe the relationship between emerging categories better. We then performed a final step in the coding process termed as selective coding. The purpose of the selective coding was to focus on core categories that have emerged from the study. This final step of coding data led to the emergence of five core categories (Strategy I: Reducing the Command Chain) relevant to this study. In summary, during open coding, the analysts were concerned with generating categories and their properties and sought to determine how these concepts vary dimensionally. In the axial coding phase, categories were systematically developed and linked, and finally, during the selective coding stage, the process of integrating core categories took place.

In order to ensure the trustworthiness of the findings, the four principles of Guba and Lincoln (1994) were strictly followed throughout the data collection period.

(1) Credibility: the participants were asked to review the interview transcripts and provide feedback on any misunderstandings

(2) Transferability: diverse participants were chosen to represent variations in the type of positions and responsibilities. Additionally, this study provides all information, including the number and type of participants, the number of firms, and the data collection procedure.

(3) Dependability: the codes developed were compared with the codes by the other researchers for the same transcripts. The inter-code comparison was found satisfactory with 87% similarity;

(4) Conformability: the findings were supported by quotes, regular reviews of data, and analysis procedures to avoid any judgmental bias (see Figure 1).

4. Results

4.1 Strategy I: reducing the chain of command

Interestingly, many respondents narrated that knowledge hiding culture is less likely to be found in firms when managers can approach a senior manager without a need to go through a chain of command. Respondents narrated that when senior management makes it easy for their counterparts in approaching them with a question/query, instead of going through a chain of commands, this will ultimately decline the knowledge hiding culture among managers different in a hierarchy.

Interviews with respondents (P1, P8, P9, P14, P20 and P22) argued that having an ease of access between senior and junior management discourage knowledge hiding because you are confident that your message will be delivered as stated. They further contended that this strategy helps managers (at different hierarchical levels) to bring them close to each other at both emotional and intellectual levels, thereby discouraging a knowledge hiding culture. This respondent stressed that an opportunity for junior managers to directly and outrightly reach their senior management can play a significant role in demoting a culture of knowledge hiding. An excerpt from P22 provides support to this notion.

> I can easily approach the CEO of my firm to discuss any innovative business ideas without needing to go through a chain of command. There are mutual trust and cooperation between us, and he is always there to help and support me with any questions I have.

Further discussion with P9 provided support to the above findings. This respondent told that when you have to send your message to top-level management through a chain of commands (Project Manager, Director, etc.), this gives rise to knowledge hiding because you do not know if your message would be delivered in the original form. Moreover, you also do not get an opportunity to have a direct interaction with them, which can set a strong foundation for you

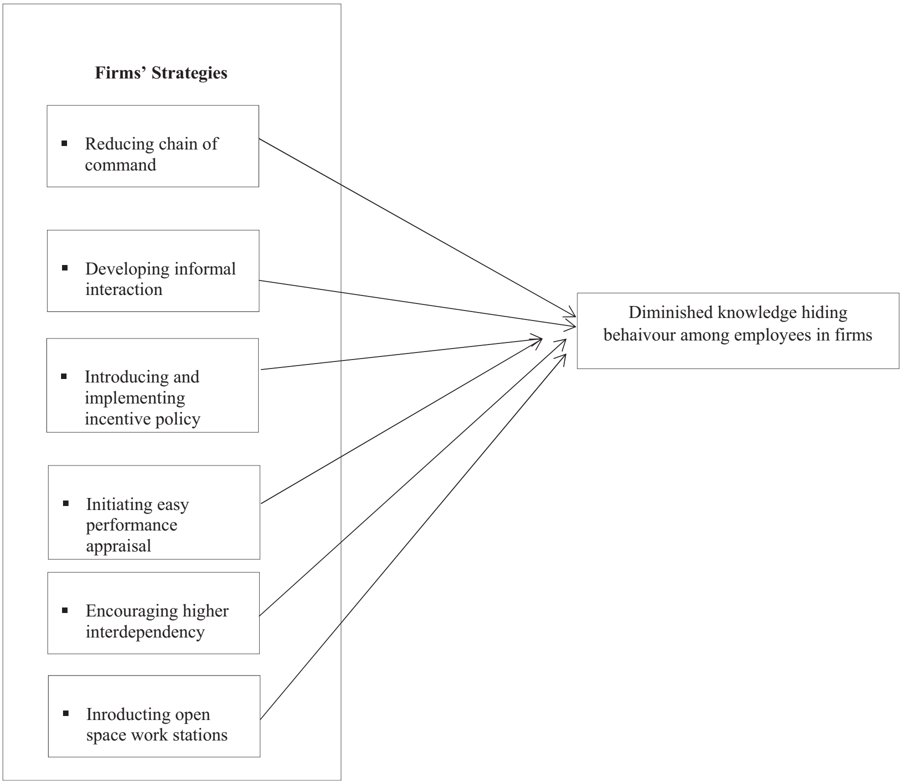

Figure 1.
Strategies to mitigate knowledge hiding behaviour in firms

to develop trust and better personal and business understanding. Simply put, companies in which information has to go through complex hierarchy can experience higher knowledge hiding behavior among managers. This respondent argued that his company has made it relatively easy for junior and line managers to approach senior managers to seek information, which further stimulates knowledge sharing between them and discourages knowledge hiding at the same time.

4.2 Strategy II: developing informal interaction among managers

Respondents narrated that in order to discourage knowledge hiding in firms, it is important to introduce informal meetings/gatherings between managers. Discussions with respondents (P11, P12, P13, P14, P15 and P16) revealed that when managers get an opportunity to interact with each other only at a professional level, such as roundtable meetings, this encourages knowledge hiding among managers. P11 and P12 reported that their firms have recently taken steps that encouraged management to have an informal face-to-face interaction with each other outside the office hours. This can be further done over a light lunch or a weekend catch up organized by firms to help managers get to know each other better at a personal level. These respondents emphasized that this strategy played a pivotal role in discouraging knowledge among managers across firms. Furthermore, they argued that when managers enjoy an opportunity to have an informal interaction with each other, this will allow them to discuss business ideas with their colleagues in an open and friendly environment.

Respondents further argued that informal interaction can also improve managers' productivity and level of creativity. Managers repeatedly stressed that there is no harm in bringing an element of informal interaction between managers as this will eventually harm managers' knowledge hiding attitude. Such informal interactions result in higher personal understanding among managers, the development of interpersonal trust, and better cooperation. Such factors further discourage them from engaging in a knowledge hiding practice. Consider what P11 has to say.

> Well, professional contact between managers limits their potential and ability to get to know each other very well. Therefore, we arrange a monthly informal gathering between managers. This allows them to get to know each other on a personal level, and it further stimulates higher trust among them. Resultantly, they are more willing to help each other in the time of trouble and less engage in unethical practices.

4.3 Strategy III: introducing and implementing incentive policy

Besides, interviews with senior managers (P5, P6, P8, P8, P9, P10, P11, P12, P13, P20, P21, P22, P14, P15) revealed that firms which have established a reward system when managers share knowledge are more likely to share knowledge. Interestingly, these senior managers further claim that such a reward system also discouraged knowledge hiding amongst managers. These respondents continuously argued that incentive policy is one of the main motivations as to why managers do not hide knowledge. Furthermore, it can also work to reduce knowledge hiding practices between managers across firms.

Respondents (P10, P11, P14 and P15) reported that their firm has a reward system in place to discourage knowledge hiding. These respondents stressed that managers in their firms collaborate well with others in firms and do not hide knowledge willingly. P14 further argued that his firm does not only reward in monetary terms but also has an early career promotion policy for an employee who does not engage in knowledge hiding and further promotes knowledge transfer practice in the firm. He further argued that his firm also rewards annual bonuses to such managers to recognize such efforts. Consider what P10 has to say.

> . . ., we have an incentive mechanism in place to reward managers who do not deliberately hide knowledge from their peers. What we have observed that such an incentive mechanism substantially discourages knowledge hiding amongst managers.

Further discussion with respondents (P13, P14) revealed that their firms had been a victim of knowledge hiding in the past. These respondents narrated that managers in their firms were deliberately hiding knowledge from other managers for various reasons (such as to save their career prospects and to remain indispensable based on the knowledge they hold). However, their firms introduced a reward system to discourage knowledge hiding just recently, which brought a great change in managers' behavior concerning knowledge hiding. These respondents confirmed that many of their managers do not engage in knowledge hiding only but also discourages others from engaging in such practice. These respondents further confirmed that such a reward system proved very well, and knowledge hiding does not exist.

4.4 Strategy IV: initiating easy performance appraisal

Interestingly, respondents' (P1, P8, P8, P9, P10, P11, P12, P13, P14, P20, P21, P22, P15, P16 and P17) narratives stated that firms, which set managers' contract, focusing less on a question of knowledge transfer between managers within firms, are less likely to become a victim of knowledge hiding. Conversely, respondents argued that firms, having strict criteria to evaluate their managers' performance, including the knowledge they volunteer, experience higher knowledge hiding among its managers.

Respondents (P8, P9, P10, P21, P22 and P23) argued that some of their managers have been practicing knowledge hiding in firms. They were less cooperative and deliberately avoided knowledge seekers when they approached them with a question in mind. These respondents further argued that their company had a very tough performance appraisal process, with a special focus on knowledge transfer questions (with whom you shared knowledge, why did you share) in firms. However, their firms took the initiative and revised the contract renewal/promotion policy/criteria by limiting questions on knowledge transfer between managers. Consequently, this reduced fear amongst managers, and they actively commenced sharing knowledge with their colleagues/peers in firms. This respondent argued that managers are not asked detailed questions about knowledge sharing during their performance appraisal. Since then, their firms hardly hear any issues concerning knowledge hiding because managers believe that they will not be evaluated; they engage in knowledge sharing between/within firms. The following excerpt from P23 provides support to the above findings.

> Our managers openly assist their peers and impart knowledge whenever possible. It is because they are not worried that they will be strictly evaluated during their performance appraisal regarding the knowledge they share with their colleagues. I would also suggest other firms that they should not strictly evaluate managers for knowledge sharing when they apply for promotion.

4.5 Strategy V: encouraging higher interdependency

Further discussion with respondents (P1, P8, P9, P11, P12, P14, P20, P22, P25 and P26) revealed that their firms had created a culture that encourages managers to depend highly on each other to accomplish their goals. Furthermore, one of the salient features of this interdependency is that it discourages knowledge hiding among managers. These respondents further narrated that sometimes, managers have to rely on both tangible and intangible knowledge, such as technical know-how, which can create a sense of interdependencies between managers at the same or different hierarchical level, which can discourage knowledge hiding between them.

Interviews with P9 and P22 provided an example of how interdependency between managers within firms can discourage knowledge hiding. These respondents argued that sometimes, they need information from their colleagues to be able to get their job done. This dependency can create a sense of reciprocity, and managers are less likely to hide knowledge. Consider an excerpt from P22.

> I rely on other managers' knowledge to get my job done, and this encourages me to reciprocate by sharing my knowledge with them too. I cannot think of hiding knowledge from that person because it is much likely that he would do the same with me. That heavy reliance can make it difficult for you to hide knowledge.

In addition, managers' narratives further revealed that other managers sometimes have to rely on them to get their work done. Consequently, managers perceived their counterparts to be dependent on them, and they would be volunteering their knowledge, and are less likely to hide knowledge. These respondents argued that when you perceive that others depend on you, you are pressed with an obligation to share knowledge and do not engage in knowledge hiding. These respondents stated that they try their level best to accommodate the frequent requests from their colleagues and sometimes leave their work aside and prioritize their counterparts' tasks through effective knowledge sharing. Furthermore, these respondents argued that although this culture is not very much prevalent in UAE based firms, it is arguable that many managers still engage in such practices.

Additional interviews with respondents (P1, P7, P9, P11, P21, P22, P23, P24) revealed that their firms encourage managers to work in groups and teams rather than working in isolation as this will create a sense of interdependency among managers. These respondents further narrated that such interdependence obliges them to engage in ethical practices, and at the same time, compel them not to deviate from their organizational role, particularly helping and supporting colleagues when they approach them with a question in mind. These respondents did confirm that their firms have minimized knowledge hiding behavior to a great extent by creating a sense of interdependency.

4.6 Strategy VI: introducing open space work stations

Interviews with respondents (P18, P19, P20, P21, P22, 23, P24, P25 and P26) stated that firms which opt for open space work stations are less likely to experience knowledge hiding among managers as it will allow them to openly and frequently communicate and exchange ideas with them.

Three respondents (P21, P22 and P23) revealed that open space workstations do not only promote knowledge sharing, but they also discourage knowledge hiding to a great extent. Moreover, an open office facilitates interaction between managers and improves team cohesion, which ultimately discourages knowledge hiding among managers. These respondents further argued that open workstations are also a great idea to engage in brainstorming and developing new ideas. Resultantly, managers feel more motivated and committed towards their roles and do not think of hiding knowledge from their peers. Respondents further argued that openwork stations allow team members and colleagues to hook up with each other at a more personal level and spent time on socializing with each other, which generates trust and nurtures a healthy relationship between them. Moreover, on top of that, they begin to view each other as friends instead of colleagues, which leaves no room for them to engage in knowledge hiding from each other.

Discussions with four other respondents (P19, P20, P21, P25) unveiled that open space workstations can contribute a lot in diminishing a knowledge hiding culture in firms as such settings allow colleagues to reach out to each other in the easiest manner possible. These respondents further narrated that open office will make it easier, and managers have complete accessibility with makes managers feel part of a more laid-back and innovative enterprise, thereby diminishing the idea of knowledge hiding amongst them. These respondents further narrated (like P21) that creating open space work stations results in higher mutual collaboration among managers as it allows managers to talk to each other in a more friendly and open environment (see Table 2).

5. Contribution to theory

Although extant knowledge hiding literature is filled with studies focusing on the antecedents as well as the implications of knowledge hiding between/within firms (Butt and Ahmad, 2019; Butt, 2019; Connelly *et al.*, 2012, 2019; Serenko and Bornis, 2016; Arain *et al.*, 2019), they have not attempted to reveal how firms can minimize knowledge hiding. As a result, the main purpose of this study was to establish a more detailed and thorough understanding of the boundary conditions of knowledge hiding by examining strategies that businesses might choose to minimize knowledge hiding behavior. We argue that findings from this study have the potential to provide benefits to firms working towards reducing costs associated with knowledge hiding. Our study contributes to the knowledge hiding literature by unveiling strategies that firms can apply to mitigate knowledge hiding within firms. In particular, firms which arrange informal interaction among managers in firms; develop an incentive policy; have open space work stations; develop an easy performance appraisal process, and appreciate higher interdependency among managers are less likely to experience knowledge hiding, and can further incur reduced costs associated with knowledge

Table 2. Summary of findings and cross-case analysis

Strategies to mitigate knowledge hiding behaviour	Case study I	Case study II	Case study III	Case study IV	Case study V	Case study VII	Case study VIII	Case study IX	Case study VI
Reducing chain of command	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Managers are reluctant to engage in knowledge hiding	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent
Developing informal interaction	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to some extent	Managers are reluctant to engage in knowledge hiding	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent
Introducing and implementing Incentive policy	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Managers do not engage in knowledge hiding at all	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent
Initiating easy performance appraisal	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Managers are reluctant to engage in knowledge hiding	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent	Knowledge hiding in firms declines to a great extent
Encouraging higher inter-dependency	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates some extent	Knowledge hiding in firms mitigates to some extent	Managers are reluctant to engage in knowledge hiding	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates some extent
Introducing open space work stations	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a some extent	Knowledge hiding in firms mitigates to a some extent	Managers do not engage in knowledge hiding at all	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a great extent	Knowledge hiding in firms mitigates to a some extent

hiding. In addition, Connelly *et al.* (2019); Arain *et al.* (2019) argue that if sufficient opportunities are offered to their managers, companies will minimize knowledge hiding behavior. They did not, however, provide any scientific evidence to support their argument. Our research empirically demonstrates that, when companies praise their managers for volunteering their knowledge, this not only promotes the exchange of knowledge but, at the same time, discourages knowledge hiding activity among them. It is also worth mentioning that when managers are rewarded with bonuses and incentives, this increases their professional commitment too, which makes them more dedicated and loyal towards the firm, eventually leading to reduced knowledge hiding behavior. These findings are in agreement with studies arguing that incentives can empower employees' workplace life, which subsequently results in a higher level of commitment and loyalty (Nayak *et al.*, 2018). Also, the extant literature on knowledge hiding (Butt, 2019) contends that when managers (Chinese and American) depend on others in firms to get their jobs done, this discourages the culture of knowledge hiding amongst managers. Our results from UAE based firms are consistent with their findings.

Our results are also multidisciplinary that may be extended to other disciplines such as Human Resource Management, Operations Management, and Organizational Behavior. For example, a recent study by Connelly *et al.* (2019) made repeated calls for a study to unveil strategies that can help firms to mitigate knowledge hiding. Our research responds to their calls by presenting an empirically driven model for businesses that can contribute to a reduced knowledge hiding behavior. Secondly, from the Human Resource Management discipline, suggested that open space workstations in firms can mitigate knowledge hiding. The author further noted that there might be additional avenues for firms to mitigate knowledge hiding. Our study contributes to this line of research by providing additional strategies that companies can opt for to mitigate knowledge hiding. Furthermore, Butt and Ahmad (2019) from the Operations Management domain also raised a need for a study that can diminish the knowledge hiding culture in a buyer-supplier relationship. Our study builds on their study by providing strategies, which can be implemented to minimize the knowledge hiding behavior in buyer-supplier partnership literature. Finally, our research provides an empirical model that has the potential to bring plenty of advantages to businesses and to further develop strategies to reduce knowledge hiding in firms (see Table 3).

6. Implications for practice

This study has practical implications as well. First, firms can use findings from this study to understand how to mitigate knowledge hiding in their workplace. In particular, our results highlight that while knowledge hiding is a serious issue, there are still plenty of ways that firms can opt for to discourage knowledge hiding behavior among managers. We propose that if firms follow the findings suggested in this study, it is very much likely to be successful in mitigating knowledge hiding. At first, firms must encourage their managers to develop cozy and friendly relationships with managers in firms, as this will cultivate trust and loyalty. Firms should also arrange informal gatherings between managers as this can give them an opportunity to hook up on a personal level and better understand each other business and personal needs. As an important note, we suggest firms should not hire/employ individuals whose skills best match the position applied only, but they should also look for additional personality traits such as professional commitment, as this will play a dominant role in demoting the knowledge hiding in firms. Indeed, managers who are committed to working towards organizational success, and those with higher morale and confidence are less likely to engage in knowledge hiding practice. Additionally, we also suggest that firms should not put too much stress on their managers to share their knowledge with peers, as this can

Strategies	Recommendations
Reducing the chain of command	1. Encourage employees to develop friendly ties with each other as this will develop direct means (ring their mobile phone etc.) for managers to get in touch with senior management, and without having a need to go through the chain of command 2. Reduce hierarchical layers, wherever possible as this will discourage knowledge hiding between senior and junior management
Developing informal interactions	1. Arrange weekly/monthly informal gathering of employees to develop the bonds of friendship 2. Promote a culture of friendly discussion over a lunch break and extended break hours
Implementing incentive policy	1. Provide monetary incentives to managers when they share knowledge as this will ultimately discourage knowledge hiding as well 2. Early career promotions for outstanding employees who volunteer knowledge
Initiating easy performance appraisal	1. Ease the evaluation criteria with respect to knowledge sharing when revising employee's work contract 2. Senior management should develop a culture indicating that employees will not be strictly judged if they volunteer their knowledge
Encouraging higher inter-dependency	1. Encourage managers/employees to work in teams instead of individual-basis 2. Develop a culture in which managers feel obligation and onerous to rely on their colleagues to get their work done to some extent
Open space work stations	1. Promote an environment of open space work stations instead of closed cabins and offices 2. Senior management should become a part of this open space work environment as this will stimulate knowledge sharing and discourage knowledge hiding

Table 3.
Strategies to mitigate knowledge hiding and its corresponding recommendations

conversely give rise to knowledge hiding because frequent requests from peers and colleagues across the firms can create more demand on their time, thereby resulting in knowledge hiding. It is also pertinent to mention that employed strategies remain consistent across different industries that accept open space work stations, which were mainly discussed by participants from plastic, metal, and paper industries.

Furthermore, it is worth mentioning that the onerous is not only on managers, but the firm's role is equally important in reducing knowledge hiding among managers. For instance, our results suggest that firms should take the initiative, such as revising their performance appraisal documents and putting least emphasis on tough questions related to knowledge transfer in firms. Firms should also reduce the chain of commands for a message to proceed in its original format to diminish knowledge hiding behavior among managers. Moving on, our results also suggest that when managers depend on others across the firms to get their job done or when others depend on managers to get their job done, this stimulates knowledge sharing and simultaneously discourage knowledge hiding in firms. This is actually in contrast to what Gagné *et al.*'s (2019) finding who argued that when China and Australian based managers perceived that others depend on them, they eventually felt pressured into sharing knowledge, which in turn, resulted in knowledge hiding. Perhaps, this is a cultural factor, and it seems that UAE managers do not choose to prioritize their work, and instead believe in helping and sharing knowledge with peers in the firms, while Australian and Chinese managers are more inclined to prioritize their work first over sharing knowledge, resulting in knowledge hiding behavior. Furthermore, many respondents argued that an incentive on knowledge sharing did not only increase knowledge sharing, but it also reduced knowledge hiding in firms to a great extent. However, they also argued that this strategy is not very much rampant across other industries in the UAE. Therefore, firms should take every possible opportunity to incentivize the managers who volunteer their knowledge and further allow them to engage and collaborate as much as possible with managers in firms. Finally, it is also imperative that firms should coach their managers on the negative outcomes associated with knowledge hiding between firms, and why knowledge should be openly shared between firms. When managers realize the real damage a knowledge hiding behavior can cause, this will eventually diminish knowledge hiding culture in firms.

7. Limitations and future research

While the findings from this qualitative research deepen our understanding of how to diminish knowledge hiding in firms, it is pertinent to mention that the results from this study are based on a limited sample of 26 interviews with managers from firms based in UAE. This is one of the limitations of the qualitative study. Additionally, caution should be taken when applying the results of this study to a broader population as this study intends to build a theory on knowledge hiding. Furthermore, the research question of this study specifically addresses behavioral patterns in UAE culture only. Also, this study relies on cross-section data to explore behavioral patterns on these phenomena, which limits the extent to which cause-effect relationships can be inferred. There are further avenues for future research. First, future research should ask the same question in this study in South Asian countries (China, India, etc.) as behavioral patterns vary from one culture to another, which might lead to different outcomes. Another possibility is to quantitatively test the findings in this study in order to demonstrate their generalizability. Additionally, many respondents argued that knowledge hiding can also have a positive impact on managers and firms. Future research should, therefore, explore how and when knowledge hiding is likely to generate positive outcomes. Future research should unveil the negative consequences of knowledge hiding on the perpetrator (one who hides knowledge). Furthermore, another possible extension of this work could be to collect data on knowledge hiding at multilevel. For example, senior managers hiding knowledge from their managers, and they further hiding knowledge from their subordinates and to future explore whether the impacts of senior manager's knowledge hiding from their managers move down to managers' knowledge hiding from their subordinates. Also, future research should explore what managerial traits are important and can further contribute to reduced knowledge hiding in firms, as some respondents suggested that managers with professional commitment are less likely to engage in knowledge hiding. Finally, future research should explore what factors contribute to individuals' knowledge hiding, such as differences in power and how organizations can develop policies that can encourage knowledge sharing while at the same time discouraging knowledge hiding in organizations.

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Appendix 1.

Interview Protocol

(1) Could you please tell me about your position here?
(2) How long have you been associated with this organization?
(3) What are your current responsibilities?
(4) Whom do you report to?
(5) Has your firm been a victim of knowledge hiding?
(6) Do you believe knowledge hiding can be controlled in firms?
(7) How can knowledge hiding be mitigated in firms?
(8) To what extent, firms have been successful in mitigating the knowledge hiding practices?

Floating prompts:

(1) Could you please tell me a little bit more about this?
(2) How did this happen?
(3) Very interesting, please continue?

Wrap up

Thank you very much, indeed, for this interview. You will receive a copy of this report once we are done with the data collection and analysis. Meanwhile, please do not hesitate to get in touch with us if you need any further information concerning this project.

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