

ORIGINAL ARTICLE



Is hiding something you know as important as knowing it? Understanding knowledge hiding in IT-enabled services of Iran

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ABSTRACT

The purpose of this research study is to understand the strategic factors triggering knowledge hiding in IT enabled services of Iran and model them according to their driving potencies. This study attempts to obtain the factors through an interview of experts and corroborate the same with the extant literature. The authors undertook a qualitative interview of the experts who gave the factors which was later streamlined with the aid of literature. A Total Interpretive Structural Modelling of these factors was conducted using R programming, and the most influential and driving factors were identified. Further MICMAC analysis was undertaken to classify these factors into; autonomous, depending, linkage, and driving based on their driving and dependency potency. The analysis establishes eleven strategic factors that trigger knowledge hiding. Out of these, the power of requesting person and the learning ability of the knowledge seeker are the most influential factors. Further, analysis established that the learning ability of the knowledge seeker is the key factor with the maximum driving potency. The results suggests that organisations have to channelise and maintain the learning ability and cater to the needs of the knowledge seekers through proper training mechanisms and establish systemic knowledge sharing avenues within the organisation to mitigate knowledge hiding within the context. This is probably the first-ever attempt to apply comprehensive TISM and MICMAC on knowledge hiding in an Iranian context, which characterises the antecedents of knowledge hiding in a relatively nascent industrial sector and a conservative cultural paradigm.

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1. Introduction

Despite the development of advanced internal communication technologies and managers' efforts to facilitate knowledge sharing, knowledge hiding remains a prevailing challenge to organisations (Connelly et al., 2019). Knowledge hiding is defined as the deliberate attempt of an individual to hide or withhold the knowledge requested by another person (Connelly et al., 2012). This occurs when someone asks a co-worker for a certain piece of knowledge (Connelly et al., 2012), and entails the latter's intent to deliberately hide the knowledge (Serenko & Bontis, 2016). Organizations make every effort to facilitate knowledge sharing by their staff, but at the end, it is all contingent on the employees' intention and willingness as well as organisation-specific conditions (Anand et al., 2020).

According to Connelly et al. (2012), knowledge hiding is a dyadic interaction, albeit not necessarily negative, which is done purposely. Knowledge hiding is connected to, and yet different from knowledge hoarding, workplace aggression, counterproductive work behaviour (CWB), social undermining, workplace

incivility, and deception (Issac & Baral, 2018). That is to say, knowledge hoarding is not always a conscious act, whereas knowledge hiding is (Pereira & Mohiya, 2021). Furthermore, knowledge hoarding occurs when somebody retains unrequested knowledge (Garcia et al., 2020). Likewise, knowledge hiding is of a different nature than CWB, as the latter is done axiomatically to do harm to the organisation and its employees, while the former is not necessarily meant to cause damage to the organisation, and also it is at an individual scale rather than organisational (Cegarra et al., 2021). Further, knowledge hiding is different from workplace aggression, social undermining, and workplace incivility in that the former is not inexorably intended to do harm to others, and, Likewise, knowledge hiding is not a deceptive behaviour by nature and is thus at odds with deception (Connelly et al., 2012).

As stated in Connelly et al. (2012), factors working up the decrease of knowledge hiding are different from those resulting in the increase of knowledge sharing. Although numerous studies have already been conducted on the increase in organisational knowledge sharing (Connelly et al., 2012; Issac & Thomas, 2017),

and researchers have spotted the influential factors, little attention has been paid to knowledge hiding. Therefore, identification of factors triggering knowledge hiding has turned into a recent favourite with a good number of researchers (Serenko & Bontis, 2016). Knowledge hiding is more prevailing in those fields featuring applied science, one of which being IT Enabled Services (ITES). Researches indicate that knowledge hiding is prevalent in IT organisations, in which the employees are not willing to share their knowledge with their peers. Having applied knowledge leads to obtaining ideal and rare job opportunities, and thus those who have the knowledge are usually unwilling to share it with their colleagues, showing knowledge hiding behaviour (Issac et al.,).

This issue exists in all countries, but in developing countries like Iran, which lacks a mature technological ecosystem, it is more significant as the act of knowledge hiding can dwarf the advancement of IT (Labafi et al., 2017). Job opportunities are not plenty in IT and fields related to it as it is an unfledged industry in Iran, and thus those already working in the field have no will to share their knowledge with the newbies. This has barricaded the free flow of expert knowledge in such organisations, which has, in turn, resulted in the loss of competitive advantage. While the driving factors of knowledge hiding under such ecosystems and restrictions have not been addressed yet, a large number of immature ecosystems face the situation. Furthermore, the driving factors can be different from those of mature ecosystems, and distinguishing this difference demands the identification of such factors in various industries with numerous features. In this regard, the Iranian fledgling ITES ecosystem can be an appropriate target area for research because Iran is a developing country, and organisational knowledge hiding may depend on the place where the research is conducted. Diagnosing factors that propel the acts of knowledge hiding in these organisations can help the management identify the grounds of such behaviour and devise strategies to eliminate them. Using TISM and MICMAC, the present study attempts to pinpoint the propulsive factors in knowledge hiding within ITES organisations of Iran and to identify the most significant of such factors.

2. Theoretical background and identifying the strategic factors triggering knowledge hiding

Knowledge Hiding is a novel field of study dating back to less than a decade ago. Studies conducted in this field have attempted to identify the nature of knowledge hiding and how it takes place in organisations. They have also probed into the factors influencing the formation of the phenomenon within organisations. Knowledge hiding is defined as a deliberate act of an individual towards hiding the knowledge asked for by another individual (Connelly & Zweig, 2015). As put

in Connelly et al. (2012), knowledge hiding is composed of three components: rationalised hiding, playing dumb and evasive hiding; all types could have inopportune outcomes but to a different degree (Abubakar et al., 2019).

Rationalised hiding occurs when the one who conducts the act of hiding avoids answering the request of the one who asks for knowledge on the grounds of personal interest, and hands in an explanation instead (Abdillah et al., 2020). This type is not necessarily deceptive and can be called a white lie (Connelly et al., 2012). For instance, in a study carried out by Offergelt et al. (2019), it was discovered that rationalised hiding not only has no negative impact on job satisfaction or increase the turnover intention, but also positively affects the empowerment. Playing dumb is when the hider avoids providing any information by resorting to a pretence of ignorance (Garcia et al., 2020). For instance, realised that evading the answer and pretending to be ignorant positively influences team creativity, while the same did not apply to rationalised hiding. Elsewhere, the study of Riaz et al. (2019) implied that workplace ostracism positively affects avoidance and pretence of ignorance, whereas it does not have the same effect on rationalised hiding. Finally, evasive hiding occurs when the person involved in hiding shares only a fraction of the knowledge with the requester, provides them with inaccurate information or puts off the answer through misleading the requester (Afshar-Jalili et al., 2020).

Knowledge hiding can bring about consequences for organisations. Serenko and Bontis (2016) list a number of such consequences as spending time on acquiring the knowledge already obtained by other employees, decrease in organisational commitment at the sight of knowledge hiding by peers, lowering the quality of organisational output, lowering the scale of organisational competition, innovation, and profitability, loss of the knowledge in the event of quitting the organisation by those employees who possess it, turnover intentions, and reciprocal knowledge hiding.

A decrease in the absorptive capacity of employees, including both knowledge seekers and knowledge hiders, and consequently the whole organisation is another consequence of knowledge hiding (Fong & Slotta, 2018). In compliance with the concept proposed by Cohen and Levinthal (1990), an organisation's absorptive capacity depends on the members' absorptive capacity. According to the social exchange theory (Cropanzano & Mitchell, 2005), when a person hides requested knowledge, knowledge seeker also attempts to conceal knowledge. This loop could inhibit knowledge sharing, resulting in reduced employees' ability to acquire and utilise the knowledge (Bari et al., 2019).

Decreased creativity (Bogilović et al., 2017; Chen et al., 2020; Connelly & Zweig, 2015; Rhee & Choi, 2017; Thomas & Issac, 2018; Zakariya & Bashir, 2020), decreased interpersonal trust (Arain et al., 2020; Butt, 2020; Yao, Luo et al., 2020), reciprocal hiding (Quigley et al., 2007; Serenko & Bontis, 2016), turnover intention (Butt, 2020; Fong & Slotta, 2018; Serenko & Bontis, 2016), dissatisfactory performance caused by mental stress, and personal or organisational deviance are also listed among the consequences of knowledge hiding (Singh, 2019).

As mentioned earlier, research has identified several factors that result in the emergence of knowledge hiding in organisations (Table 1). We have categorised the factors into three groups based on the existing literature. The first is personal level, which includes those factors that originate from personal traits such as territoriality issues and fear of being evaluated. Second is the interpersonal level, which entails the factors resulting from the communication between peers emerging as a result of short-term or long-term relations among colleagues, and triggers knowledge hiding. They include a lack of trust in workmates and a lack of reciprocal response. Third, comes to the organisational factors which are organisation-specific. They are caused by certain methods adopted by the management to motivate employees. They include abusive supervision and a competitive workspace. The literature on each of the three scales is reviewed below.

2.1. Personal level factors

2.1.1. Fear of being evaluated

Employees avoid answering due to their fear of being evaluated by others (Butt & Ahmad, 2019). Jha and Varkkey (2018) believe that lack of confidence in one's knowledge may trigger knowledge hiding. He states that employees who are confident in their knowledge are less likely to hide knowledge as they have no fear of being judged by others losing their esteem. Also, Bordia et al. (2006) believe that in organisations with a very strict evaluation of employee performance, people may tend to hide their knowledge for fear of their knowledge being assessed.

2.1.2. Complexity of knowledge

Complexity of knowledge is also known to be one of the reasons for hiding. Connelly et al. (2012) state that the complexity of the knowledge sought influences avoidance positively. Nevertheless, Labafi's work (Labafi, 2017) shows that complexity of the piece of knowledge which is asked for results in the hider's loss of motivation to answer and, in turn, in knowledge hiding.

2.1.3. Territoriality

Territoriality is also known to be another reason behind knowledge hiding. Crossley et al. (2013) state that territory is a space within which employees feel safe and comfortable to work. Huo et al. (2016) believe that territoriality can affect knowledge hiding. Moreover, Bhattacharya and Sharma's work (Bhattacharya & Sharma, 2019) indicates that territoriality mediates the relations between knowledge-based psychological ownership and knowledge hiding. Singh (2019) also believes that territoriality increases the tendency towards knowledge hiding and personal and organisational deviance.

2.1.4. Knowledge-based psychological ownership

Likewise, Huo et al. (2016) and Peng (2013) see knowledge-based psychological ownership as a propelling factor for knowledge hiding. As highlighted in Peng's theory of psychological ownership (Peng, 2013), people have their doubts about sharing the knowledge they own once they realise it can bring them power. Bhattacharya (2019) states that psychological ownership can result in unwillingness to transfer knowledge to peers, dismissal of knowledge, or resistance against change. He also claims that knowledge-based psychological ownership mediates territoriality and thus indirectly influences knowledge hiding. Huo et al. (2016) says the higher the level of knowledge-based psychological ownership experienced by an individual, the more likely they are to hide knowledge.

2.1.5. Lack of job security

Serenko and Bontis (2016) believe that when a given organisation is going through tough financial conditions, they tend to lay off staff. This motivates employees to elevate their performance to beat others, and this may trigger knowledge hiding. In research conducted by Butt and Ahmad (2019), it was discovered that senior managers might be involved in acts of knowledge hiding for fear of losing their position to other staff members.

2.2. Interpersonal level factors

2.2.1. Interpersonal distrust

Interpersonal distrust is known to be another reason for knowledge hiding. Butt and Ahmad (2019) express that senior managers hide knowledge as they do not trust requesters. Issac et al. (2021) sees interpersonal distrust as a reason for hiding knowledge. Jha and Varkkey (2018) believes that the main reason for distrust is lack of integrity, and says that respondents hide the knowledge, especially when they do not trust requesters.

2.2.2. Lack of reciprocity

Reciprocity and lack of reciprocation are also listed as the propulsive factors of knowledge hiding. Butt and Ahmad (2019) say that senior managers hide their knowledge from managers as managers have done the same to them. Ghani et al. (2020) state that employees tend to hide knowledge for retaliation. Serenko and Bontis (2016) highlight that in some organisations, staff members may hide knowledge for the purpose of undermining their performance to retaliate.

2.2.3. Relationship conflicts

According to Boz Semerci (2019), relationship conflicts are caused by personal grudges or tension in interpersonal relations. It influences the individual's social interactions, behaviour, and manner of choice to do things. It can also affect one's tendency to retaliate. He confirms that such conflicts directly influence knowledge hiding by employees. In addition, Rasheed et al. (2020) found that revenge attitudes resulting from interpersonal conflicts could facilitate knowledge hiding.

2.3. Organisational level factors

2.3.1. Competitive workspace

Anand et al. (2020) states that competition and performance may trigger knowledge hiding. Labafi (2017) showed in research that employees hide knowledge to not fall behind in the competition and gain fame. Singh (2019) sees the competitive environment that expects better performance as one reason for knowledge hiding. To Jha and Varkkey (2018) and Han et al. (2021), a competitive workplace is a catalysing element in knowledge hiding.

2.3.2. Abusive supervision

Employees under abusive supervisors resort to knowledge hiding when they feel that outright retaliation is not a wise choice. Khalid et al. (2018) express that employees with abusive supervisors avoid sharing knowledge to get back at their leaders. Anand et al. (2020) believes that hostility culture and abusive supervision result in knowledge hiding.

2.3.3. Workplace ostracism

Riaz et al. (2019) state that workplace ostracism is a scale at which people feel ignored and unnoticed by others within the organisation. Once overcome by such feelings, the individual resorts to retaliatory behaviours. Studies indicate that workplace ostracism not only exacerbates the physical and mental health of the employees and their job satisfaction, but also increases knowledge hiding among them (Riaz et al., 2019; Zhao et al., 2016).

2.3.4. Leadership styles

The way leaders treat subordinates may also trigger knowledge hiding behaviours. Guo et al. (2020) found that exploitative leadership is positively associated with knowledge hiding. So that exploited people are unwilling to share knowledge with others because of the feeling of losing time and energy. Peng et al. (2019) stated that the leaders' selfish actions could influence employees' knowledge hiding behaviours. When leaders show employees that personal interests are more important than mutual interests, employees, citing this institutionalised behaviour in the organisation, prefer their own interests when asked for knowledge and refuse to respond appropriately.

3. Background of study

The present study was carried out in the ITES companies in Iran. As the industry is new to the country, and due to issues like the small size of the market, limited resources, etc., knowledge sharing is of grave significance in this industry. Not only the Iranian ITES industry has a narrow market share, but the existing sector is managed by governmental companies. Due to the lack of stability in administrative policies, few investors are attracted to this type of venture. Moreover, the limited interaction with other industries leads to insufficient infrastructures and knowledge resources. Expert human force is also rare in this industry due to inappropriate job conditions. In this research, the factors leading to knowledge Hiding were identified in four IT-enabled survives (ITES) organisations. We interviewed 12 participants, upon which we started getting repetitions in their answers which indicated the optimum sample size in the qualitative interview. The participants in the study were the employees and managers working at the aforementioned companies. The number of participants was determined based on theoretical saturation. The techniques of data collection included semi-structured interviews, on-site observance and note-taking. A total of 12 interviewers conducted the interviews during three months, and researchers frequently visited every member of the sample group to obtain more data and remove ambiguities. These participants were initially screened out on the basis of experience in the current organisation of more than five years, which was kept as a minimum qualification to be a field expert. Our qualitative interview paved the way for the identification of the strategic factors that trigger knowledge hiding. Table 2 shows the demographic data of the sample members.

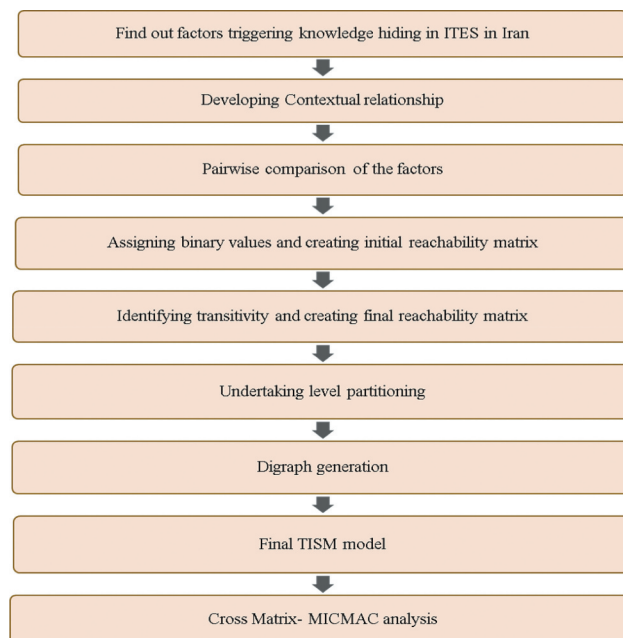
These field experts indicated the following 11 strategic factors which trigger knowledge hiding in the Iranian ITES.

Table 1. Summary of the factors affecting knowledge hiding at different levels.

Antecedent level	Antecedent	Author(s)
Individual	Knowledge base psychological ownership	Bhattacharya and Sharma (2019), Ghani et al. (2020), Huo et al. (2016) and Peng (2013)
	Psychological Contract Breach	Bari et al. (2020), Ghani et al. (2020) and Jahanzeb et al. (2020)
	Territoriality	Bhattacharya and Sharma (2019), Huo et al. (2016), Peng (2013) and Singh (2019)
	Psychological contract violation	Pradhan et al. (2019)
	Fear of evaluation	Bordia et al. 2006, Butt and Ahmad (2019), Butt et al. (2020) and Ford and Staples (2008)
	Avoiding harmful outcomes	Butt and Ahmad (2019) and Butt et al. (2020)
	Personality traits/behavioural characteristics	Issac and Baral (2019) and Labafi (2017)
	Emotional intelligence	Issac and Baral (2019)
	Task uncertainty	Issac and Baral (2019)
	Indispensability	Butt and Ahmad (2019)
	Career prospects	Butt and Ahmad (2019)
	Personal benefit	Butt and Ahmad (2019)
	Negative reciprocity beliefs	Zhao et al. (2016)
	Moral disengagement	Zhao et al. (2016)
	Job insecurity	Butt and Ahmad (2019) and Serenko and Bontis (2016)
	Involuntary turnover	Serenko and Bontis (2016)
	Emotional exhaustion	Yao, Zhang et al. (2020)
	Social identity and norms	Arain et al. (2020), Bogilović et al. (2017) and Xiong et al. (2019)
	Situations	Anand et al. (2020) and Skerlavaj et al. (2018)
	Task conflict	Issac and Baral (2019), Anand et al., 2020, Boz Semerci, 2019, Gagné et al. (2019) and Huo et al. (2016)
	Lack of recognition	Jha and Varkkey (2018)
	Lack of confidence in own knowledge	Jha and Varkkey (2018)
	Complexity of the knowledge	Issac & Baral (2019), Connelly et al. (2012) and Labafi (2017)
	Perceived knowledge value	Huo et al. (2016)
	Effect of ubiquitous media	Labafi (2017)
Interpersonal	Learning ability of the knowledge seeker	Labafi (2017)
	Lack of personal relationships	Butt et al. (2020)
	Interpersonal distrust	Issac and Baral (2019); Butt and Ahmad (2019), Connelly et al. (2012), Geofroy and Evans (2017), Jha and Varkkey (2018), Labafi (2017) and Mooradian et al. (2006)
	Lack of reciprocation	Butt and Ahmad (2019) and Jha and Varkkey (2018)
	Competition	Butt and Ahmad (2019) and Labafi (2017)
	Power of requesting person	Labafi (2017)
	Personal dislike	Butt and Ahmad (2019)
	Deceiving colleagues	Labafi (2017)
	Violence	Labafi (2017)
	Group relational conflict	Lin et al. (2020)
	Feeling envied	Liu et al. (2020)
	Relationship conflict	Boz Semerci (2019)
Firm	Proving goal orientation	Dyne et al. (2003), Rhee and Choi (2017) and Swift et al. (2010)
	Abusive supervision and Hostility culture	Anand et al. (2020; Ghani et al. (2020); Khalid et al. (2018); Pradhan et al. (2019)
	Supervisor directed aggression	Pradhan et al. (2019)
	Organisational incentives for knowledge sharing	Labafi (2017)
	Lack of clear responsibility for knowledge sharing	Labafi (2017)
	Negative feedback from organisational environment	Labafi (2017)
	Workplace ostracism	Riaz et al. (2019) and (Zhao et al. (2016)
	Workplace bullying	Yao, Zhang et al. (2020)
	Leadership demands	Butt et al. (2020)
	Differentiated empowering leadership	Lin et al. (2020)
	Restriction from senior management	Butt and Ahmad (2019)
	Negative workplace gossip	Yao, Luo et al. (2020)
	Competitive work environment	Anand et al. (2020), Fong and Slotta (2018), Jha and Varkkey (2018), Peng (2013) and Singh (2019)
	Perceived career insecurity	Jha and Varkkey (2018)
	Knowledge hiding norms	Butt and Ahmad (2019)

Table 2. Demographics of respondents (N = 12).

Age	%	Gender	%
≤ 25	11.7	Women	35.2
26–35	41.1	Men	64.7
36–45	23.5	Degree	%
46–55	17.6	BSc	41.1
56–65	5.8	MSc	41.1
66≥	0	PhD	17.6

**Figure 1.** Flow diagram for TISM methodology.

Some of these factors are also identical to antecedents of knowledge hiding already established in the literature. This gave the triangulation, and the identified 11 factors were further analysed using Total Interpretive Structural Modelling (TISM) and Cross-Matrix Analysis (MICMAC), which constitutes the major contribution of this study.

4. Method

4.1. Understanding TISM and MICMAC

We undertake a relational analysis of the identified factors using TISM by underscoring a common construct (Anbarasan & Sushil, 2018). We then denote the relationship established in binary terms. Field experts who are identified and interviewed give us the expert rating on the relationship between the factors. An affirmative relationship between the variables will fetch 1 and no relationship is assigned as 0 as shown in Figure 1. Once we complete enlisting all the possible relationships using pairwise comparisons (Kumar et al., 2018; Shankar et al., 2018), we get the initial reachability matrix (Haleem et al., 2018).

The initial reachability matrix only provides the core relationships. There can be transitive relationships between the factors. The incorporation of

these transitive associations (Rajesh, 2017) has modified the methodology of ISM into TISM (Anbarasan & Sushil, 2018; Sushil, 2017). By considering the transitive relationships, we obtain the final reachability matrix (P. Kumar et al., 2017). Then, we undertake level-partitioning (Issac & Baral, 2019) on the elements of the final reachability matrix, which gives us the required model that arranges the factors into different levels (Table 4). For making the study more objective, we undertake the whole process of transitivity check and further level-partitioning with the aid of R programming (A.C. Issac et al., 2020).

The critical relationships obtained as the net result of the level-partitioning which forms the model are indicated by a diagrammatic representation known as digraphs. The model obtained as aforementioned with the representation of both the direct and transitive associations constitute the final TISM model (Yeravdekar & Behl, 2017). This arrangement of the various factors underscores the prominence of certain factors above others. In other words, the model gives us insight into the peculiar nature of some of the elements which act as the driving factors.

Further, we follow-up the TISM methodology with the MICMAC analysis, which essentially constitutes a Cross-matrix analysis and gives us a detailed understanding of four different types

of factors- driving factors, autonomous factors, linkage factors, and dependent factors (Shukla et al., 2018; Yadav et al., 2019). According to (Dubey et al., 2017), dependence “is estimated by adding up the entries of all possibilities of interactions within the columns”, and driving power is calculated “by summing all the entries of possible interactions within the rows”. Therefore, the driving factors are the ones with very high driving power, and they dictate the whole construct performance. Autonomous factors already exist in the system. Factors with high driving and dependent power constitute the linkage factors. The MICMAC analysis essentially segregates all these

factors into the four quadrants (Sindhwani & Malhotra, 2017), which will be discussed in the further sections.

5. Results and discussion

As indicated earlier, we undertook the TISM with the aid of R programming and obtained the final reachability matrix as illustrated in Table 3. The elements in the shaded portion denote the transitive links between the factors. The level-partitioning iterations provide the different levels, as shown in Figure 2. The two factors SF6-Sense of internal competition and SF7-Level of trust in colleagues, constitute level I. Level

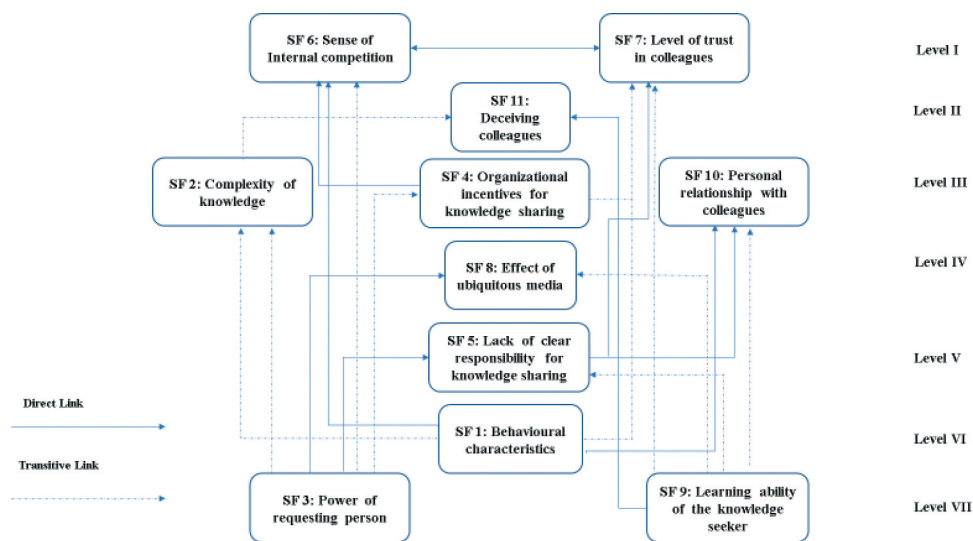


Figure 2. Digraph representing prominent relations of TISM.

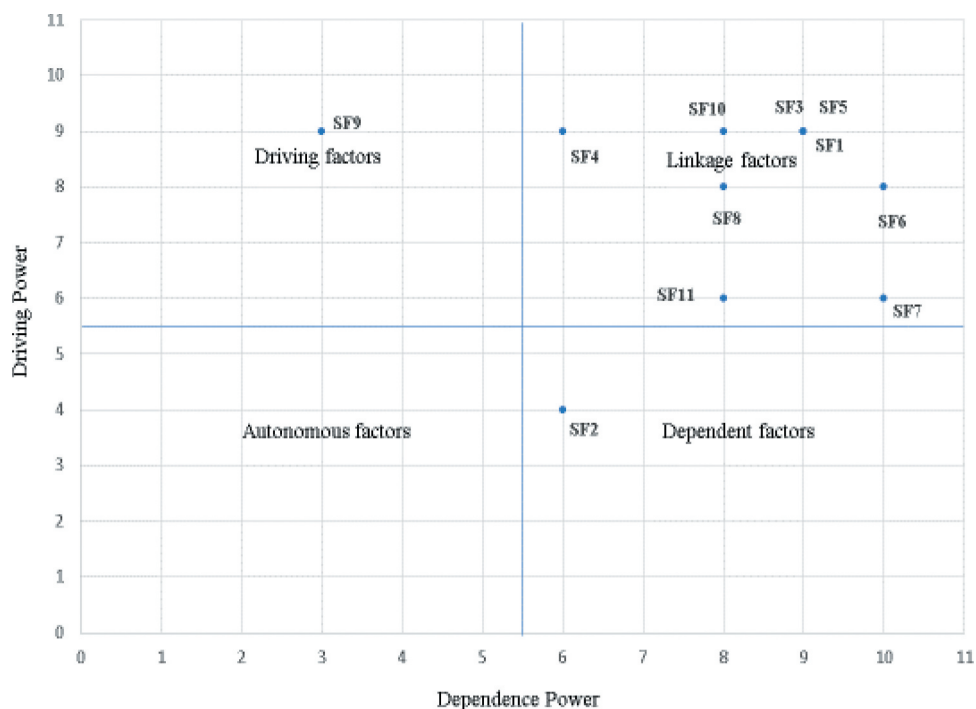


Figure 3. MICMAC analysis illustrating driving and dependence power of each factor.

Table 3. The strategic factors identified as antecedents of knowledge hiding.

Sl. No.	Strategic Factors	Supported By
SF1	Behavioural characteristics	Yao et al. (2020)
SF2	Complexity of knowledge	A. C. Issac and Baral (2019)
SF3	Power of requesting person	Huo et al. (2016)
SF4	Organizational incentives for knowledge sharing	Anand et al. (2020) and Ghani, Teo et al. (2020)
SF5	Lack of clear responsibility of knowledge sharing	Zhao et al. (2016)
SF6	Sense of internal competition	Boz Semerci (2019)
SF7	Level of trust in colleagues	Butt and Ahmad (2019) and Connelly et al. (2012)
SF8	Effect of ubiquitous media	Labafi (2017)
SF9	Learning ability of the knowledge seeker	Labafi (2017) and Khalid et al. (2018)
SF10	Personal relationship with colleagues	Butt and Ahmad (2019) and Labafi (2017)
SF11	Deceiving colleagues	Jha and Varkkey (2018) and Labafi (2017)

Table 4. Final reachability matrix.

	SF1	SF2	SF3	SF4	SF5	SF6	SF7	SF8	SF9	SF10	SF11
SF1	1	1	1	1	1	1	1	1	0	1	0
SF2	1	1	0	0	0	0	0	0	1	0	1
SF3	1	1	1	1	1	1	1	1	0	1	0
SF4	1	0	1	1	1	1	1	1	0	1	1
SF5	0	1	1	1	1	1	1	1	0	1	1
SF6	1	0	1	0	1	1	1	1	0	1	1
SF7	1	0	1	0	1	1	1	1	0	0	1
SF8	0	1	1	1	0	1	1	1	1	1	0
SF9	1	1	0	0	1	1	1	1	1	1	1
SF10	1	0	1	1	1	1	1	1	0	1	1
SF11	1	0	1	0	1	1	1	0	0	0	1

*Elements in the shaded region represent the transitive links

It underscores the most influenced factors among the set of identified factors. The strategic factor SF 11-Deceiving colleagues obtain the second level, which is followed by SF2- Complexity of knowledge and SF4-Organizational incentives for knowledge sharing. The fourth, fifth and sixth level is occupied by SF8-Effect of ubiquitous media, SF5-Lack of clear responsibility for knowledge sharing and SF1-Behavioural characteristics of the individuals involved in the dyadic exchange of knowledge respectively. Finally, according to the TISM model, the most influencing factors are SF3-Power of requesting person and SF9- Learning ability of knowledge seeker.

We further test the findings of this TISM model with the aid of the MICMAC analysis, and we obtain a clear understanding of the driving and dependent potencies of the various factors according to the quadrants they fall into. According to Figure 3, which details this outcome, the SF2- Complexity of knowledge is the most dependent factor. Interestingly, SF9-Learning ability of the knowledge seeker is the only factor that emerges as the driving factor. Considering this result with the TISM, we understand that the most potent driving factor that influences knowledge hiding in the ITES in Iran is the learning ability of the knowledge seeker.

The direct link displayed by the bold lines in Figure 2 establishes the direct relationship between the factors. This underscores the outcome of the interview of the experts, which also suggested similar relationships. The transitive links which are also

relevant are also noted in the TISM model. The model establishes the driving orientation of some of the factors like effect of the ubiquitous media and the behavioural characteristics of the individuals involved. But the model leaves no stone unturned in establishing the driving potencies of the two factors, namely, power of the requesting person and the learning ability of the knowledge seeker. These two factors emerge as the most influencing factors. Our analysis further corroborates it with the MICMAC analysis to see that out of both of them SF9- Learning ability of the knowledge seeker is the most critical factor. This could be understood in the background of the social exchange theory and absorptive capacity. Quantifying the learning ability of the individual is difficult. This difficulty motivates them to stay away from sharing knowledge.

The deterring effect could be a result of pre-conceived notions about the colleagues or the career insecurity of the knowledge sharing individual. It could be such that the infinite learning ability of the knowledge seeker could make the person otherwise inclined to share knowledge person to indulge in knowledge hiding fearing loss in expert power and thereby losing the higher position within the organisation. We also understand from the TISM model that power of the requesting person is also critically important and is one of the key influencing factors. This coupled with the earlier understanding, can show us that individuals within an organisation consider this as a risky affair. Unconditional knowledge sharing could perhaps lead to lose in expert power and referent power of individuals within an organisation. The MICMAC analysis categorically shows us that there are no autonomous factors within the system, which makes it clear that ITES in Iran are having a well-balanced knowledge sharing mechanism and a similar facilitating spirit.

Out of all the identified factors, we find out that most of them are linkage factors. In other words, all the linkage factors have both high driving power and dependent power. This makes these factors

very unstable, and any attempt to control the same may lead to unexpected and undesired outcomes. Controlling these factors to mitigate existing knowledge hiding tendencies would not be that effective as decrease in one may inadvertently cause the increase of the other. Nevertheless, the finding underlines the sharp knowledge hiding tendencies existing due to the extraneous factors. Proper attention and carefully planned mitigation could to an extent control the knowledge hiding within the ITES in Iran.

6. Implications to theory and practice

This study touches many grey areas of knowledge management. Not only the construct of knowledge hiding but also the context of Iran is refreshing to the literature of knowledge management. This study contributes four important aspects. First, it looks into the knowledge transfer in ITES in the context of Iran, which is rarely observed in the literature. Second, this study categorically establishes the strategic factors that are responsible for knowledge hiding in a relatively new sector of industry. Third, it models the identified factors influencing knowledge hiding into different levels underscoring the relative importance of each one of them in terms of their influencing power. Fourth, from the model, the MICMAC analysis narrows down to the most critical driving factor, which is responsible for knowledge hiding in the Iranian ITES context. Thus, the context of ITES which is in a nascent stage in Iran could benefit in knowing that there exists knowledge hiding within the industry, and the eleven strategic factors are the major influencers.

This study unravels a different, perhaps diametrically opposite face of the theory of absorptive capacity. Till date the learning ability was understood as a positive demeanour. But, as this study suggests the learning ability of the knowledge seeker who could be a peer in the organisational background, could possess serious threat not only to one's knowledge but also to the expertise and the position of individual within the organisation. This may lead to unwarranted knowledge hiding practices, and if it is picked up within the organisation, it can cause a domino effect, and the spirit of knowledge sharing could be easily replaced by knowledge hiding in no time. The absorptive capacity could be dangerous in such specific situations. Organizations should carefully channelise and act according to the learning ability of the knowledge seeker which if goes unchecked can cause more harm than good to the entire organisation. The top management could undertake occasional training programmes and implement proper systemic knowledge sharing portals which thoroughly addresses the desire for knowledge of certain individuals within the organisation.

Hiding requested knowledge by managers from subordinates is one example of the power of knowledge seeker importance (Butt & Ahmad, 2019). So that the more little power knowledge seeker has, the less likely they get an answer, and vice versa. In addition to the hierarchy of power that makes those in power reluctant to answer requested knowledge, other factors such as leadership styles (Fong & Slotta, 2018), being selfish (Butt & Ahmad, 2019), or being concerned about losing power (Bordia et al., 2006) are also influential. Hiding knowledge by the powerful people in an organisation can also entail other devastating consequences, including the fact that subordinates consider these people representatives of the organisation and seek retaliation from them and the organisation by observing knowledge hiding behaviours and also encouraging subordinates to do the same (Butt & Ahmad, 2019).

The TISM model, which underscores the influencing power of requesting person, could also add our understanding to the different types of power and the relevance of the same with respect to the knowledge sharing atmosphere. The finding implies that reciprocity of knowledge transfer could be seriously affected if one side of the dyadic setup is having a powerful individual compared to the other side. Previous studies in knowledge hiding have categorically established an unconditional reciprocity. But this study goes against this basic tenet of reciprocity and guides the behavioural exchange anchored on knowledge transfer in the background of power differentials. Greater the imbalance in the power between knowledge seeker and hider, greater would be the lopsided knowledge hiding, but there could a glittering lack of reciprocity. Though not generally in knowledge management, but specifically in terms of knowledge hiding, the organisations should focus on destroying any power-centres within the organisational structure. Such power centres can cause unrepairable damage to the knowledge fabric of the organisations.

7. Limitations and future research directions

TISM is a very powerful method of relational analysis and it essentially underscores the contextual relationships. But, the understanding of the association between these strategic factors could be further cemented with empirical analysis. This study has taken deep care in narrowing down the strategic factors but these factors though relevant in all the contexts, could not be specified as the only relevant factors that influence knowledge hiding tendencies.

Different cultural settings may elicit some other factors also. The findings of this study though, seem plausible but empirical analysis on the effect of power and learning ability of the knowledge seeker in knowledge transfer episodes would add a different dimension to the whole knowledge hiding literature.

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