
Article

The impact of Spiritual Leadership on Knowledge Hiding Behavior: Professional Commitment as the Underlying Mechanism

Abstract: Purpose – The purpose of this study is to investigate the impact of spiritual leadership on knowledge hiding behavior of employees in agriculture research institutes of Khyber Pakhtunkhwa, Pakistan. The study also aims to analyze theoretically and then investigate empirical evidence concerning the mediation pathway (namely, professional commitment) to clarify the significant association amid spiritual leadership and subordinate's knowledge hiding behavior.

Design/methodology- The cross-sectional data using five point likert scale was used in this survey based study to investigate the given hypotheses. In order to account for the prim effect and any potential for common method bias, data was gathered at two different time points with a gap of four weeks. Smart PLS4 was used to assess a sample of 298 complete and valid responses for hypotheses testing. **Findings** – The results show that spiritual leadership impacts negatively the employees' knowledge hiding behavior. Moreover, this relationship is mediated by professional commitment. **Originality/value** – First, in contrast to the majority of past studies that concentrated on antecedents of knowledge sharing, the present study examined the impact of spiritual leadership on employee's knowledge hiding behaviors, which are two opposing concepts. Secondly, the study examined empirically, the mediation effect of professional commitment. These three variables have not been studied together previously.

Keywords: Spiritual leadership; Knowledge hiding behavior; Professional Commitment; Agriculture research institutes.

1. Introduction

1.1. Background of the Study

Pakistan is primarily an agricultural country. However, since 2013, Pakistan has been a net food importer, resulting in an additional burden of US\$4.261 billion in the first nine months of fiscal year 2019 (PES 2018-19). Furthermore, agriculture's contribution to GDP has been decreasing over time. In comparison to the output levels of advanced countries throughout the world, Pakistan's average crop yield is extremely low. Agricultural research is required to overcome the sector's backwardness, as it shifts the focus of agricultural research to modern lines for integrated, sustainable, and profitable farming in order to improve productivity, nutrition, the environment, and people's lives. Innovations through research and development are possible only through effective use of knowledge. Knowledge hiding, as a prevalent workplace problem results in significant financial losses for businesses (Zhao et al., 2016). Despite the well-established requirement for knowledge sharing, Connelly et al. (2012) found that knowledge hiding is common in many service firms, preventing knowledge transfer (Connelly et al., 2012).

Among other factors, knowledge hiding among research professional may be the reason for poor performance of agricultural research institutes in Pakistan.

Knowledge management in contemporary organizations is a crucial and vital resource for competitive advantage and success (Alnaimi et al., 2022). Although, employees possess the knowledge (Abubakar et al., 2019a), the capacity to share it is the central concern for contemporary organizations' knowledge management success. Organizations frequently spend a lot of time and money on learning new knowledge (Zhao et al., 2019) for maintaining their competitive advantage, still the disinclination towards knowledge sharing exists and employees continue to be hesitant for sharing knowledge with coworkers (Pradhan et al., 2019). When critical knowledge or information is kept hidden, it has serious consequences for organizations, ranging from negative consequences for employees (Cerne et al., 2014), project-level concerns to larger organizational inefficiencies (Keil et al. 2014). Babcock (2004) found that knowledge hiding costs Fortune 500 organizations roughly \$31.5 billion each year. Furthermore, in 2006, the Globe and Mail surveyed more than 1,700 regular readers; their study showed that roughly 76 percent of workers were engaged in knowledge hiding behavior (Farooq and Sultana, 2021). In his study, Peng (2013) discovered that 46% of respondents admitted who engaged at least once, in knowledge hiding behavior. It is therefore critical to discover the factors that cause individuals (particularly research professionals) to hide their knowledge so that firms may design effective tactics to discourage this behavior. Few researches have been performed to ascertain the scope of knowledge hiding because the concept of hiding knowledge is still developing (Connelly et al., 2012; Issac and Baral, 2021).

The word "knowledge hiding" was originally used by Connelly et al. (2012), they thought it was a deliberate attempt by someone to withhold or conceal knowledge that someone else had asked for. This is a three-dimensional phenomenon i.e. evasive knowledge hiding, playing dumb and rationalized knowledge hiding approaches. Connelly and Zweig (2015) stated that evasive hiding occurs when workers 'give wrong information and promise to provide complete information later on'. In playing dumb the workers pretend that they don't have the required information as requested and rationalized knowledge hiding occurs when workers 'provide a justification, blame someone else or say that he is not allowed to disclose or transfer such information by superiors. Studies in area of knowledge hiding have begun two decades ago to understand why people hide knowledge (Ghobadi, 2015). If some fear loss of their power (Ulrike et al., 2005), others fear of being evaluated (Bordia et al., 2006). Some others may find knowledge to be complex when shared and others maybe waiting for the right climate in their organization (Connelly et al., 2012). Peng (2013) found that knowledge hiding is because of influence by territoriality concerns. Further Connelly et al., (2012) argues that if an employee distrusts the requestor, or if the question is complicated then the employees engage in knowledge hiding. Furthermore, Knowledge hiding occurs, owing to employees' fear of losing their status, career chances, or even jobs (Jha and Varkkey, 2018). Though, organizations attempt to discover strategies to incentivize persons to share their expertise with their coworkers because it is a deliberate activity (Men et al., 2018), they

cannot, however, be pressured against their choice for sharing their knowledge (Kelloway and Barling, 2000); nonetheless, they may (and should) be urged and encouraged to do so. According to Pereira and Mohiya (2021), scholarship in the context of 'knowledge hiding' as a concept is in very nascent stage and thus there is a need to explore the concept in varied contexts and in relation with other organizational constructs in order to enhance the theoretical legitimacy of the construct. All the identified themes are evolving in terms of its density and lesser in terms of its centrality, and thus we suggest knowledge hiding attracts greater scholarly attention, as an organizational construct.

Prior research on knowledge hiding denotes a number of predictors such as interpersonal distrust (Černe et al., 2014), organizational injustice (Abubakar et al., 2019b), and leadership related factors (Khalid et al., 2018; Men et al., 2018; Xia et al., 2019; Anser et al., 2020; Ghani, 2020) to measure knowledge hiding behavior, however, less attention has been paid how to mitigate knowledge hiding behavior. Knowledge hiding is influenced by a wide range of contextual factors, including organizational policies, compensation systems, leadership, structure, and culture, among others, according to Connelly et al. (2012), they further advocated additional research in order to investigate and comprehend causes and effects of "knowledge hiding" behaviors. One significant factor that impacts a person's behavior for knowledge sharing to others at work is the social interactions between coworkers and leadership and how one is treated while working. Oliveira et al. (2021) found after a comprehensive literature analysis on knowledge hiding that organizational values and leadership style most likely impact the adoption of the behaviors, therefore the relationship between these should be investigated. Oh and Wang, (2020) believed that spiritual leadership is a unique and researchable topic and urge further study to increase the breadth and depth of the field's knowledge. Spiritual leadership may impair employees' knowledge-hiding tendencies, which could make for a fascinating research topic for scholars in the future (Anser et al, 2021).

Spiritual leadership, as a form of value-based leadership, has grown in favor recently due to its ability to have a good effect on businesses. Spiritual leaders prioritize encouraging staff to uphold the organization's mission and values by offering assistance, expressing gratitude, and creating a feeling of community (Fry 2003). Research on spiritual leadership is becoming more popular (Dinh et al. 2014). Under spiritual leadership through a transcendent vision coupled with hope and altruistic love, employees are intrinsically motivated to foster positive social emotions such as care and concern for others, compassion, kindness, forgiveness, gratitude, and helping (Fry, 2003; Fry et al., 2005), which are the fundamental building blocks of establishing and maintaining trust-based interpersonal relationships (Bayighomog and Arasl, 2019). Employees that have strong, trust-based connections with one another tend to be less knowledge-hibernating. Additionally, by combining the use of ethical/spiritual ideals with rational criteria in decision-making, spiritual leadership empowers staff to control their behavior and make morally superior decisions (Fry et al., 2005).

Spiritual leadership becomes one of the factors that can influence knowledge hiding behavior; however, it needs other variables such as professional commitment that can be the bridging variable between spiritual

leadership and knowledge behavior. Ghani et al. (2020) studied the relationship between professional commitment and knowledge hiding among students and found a negative relationship. In a study, Men et al. (2018) discovered a negative link between knowledge hiding and ethical leadership and further suggested investigating professional commitment as potential antecedent of knowledge hiding behavior. Moreover, Rumangkit, (2020) examined the direct association between spiritual leadership and affective professional commitment with perceived organizational support as a mediator, and discovered a favorable relationship between the two. Furthermore, Connelly et al. (2012) indicated that employees with high levels of professional commitment are less likely to hide knowledge, because they view responding to coworkers' requests as their professional responsibility. Therefore, even when working in a politically charged workplace, people with a high level of professional dedication are less likely to participate in information hiding practices (Malik et al., 2019).

Based on the views and opinions of some of the aforementioned writers, we assume that spiritual leadership has a relationship with knowledge hiding behavior mediated by professional commitment. The purpose of this study is to analyze the relationship between spiritual leadership, professional commitment and its implication to knowledge hiding behavior. Based on previous theoretical and research approaches, this research investigates the relationship between spiritual leadership (as exogenous variable) with professional commitment (as intervening variable) and knowledge hiding behavior (as endogenous variable). This study uses the spiritual leadership theory (SLT) developed by Fry (2003) and social action theory to become the basis for the investigation. Spiritual leadership theory and social action theory which states that when leaders can channel personal values to other individuals as intrinsic motivation, individuals will try to bind themselves to organizations with high involvement and try to have an emotional attachment to the leader and organization (Kanter, 1968). The study also analyzes the effect of spiritual leadership on subordinate's knowledge hiding behavior using social exchange theory as the theoretical foundation to support our hypothesis. Relationships between individuals depend on positive and useful exchanges and transactions, which is one of the fundamental principles of SET. When an employee realizes and experiences knowledge hiding, he/she is prone to retaliate as stated by norm of reciprocity (Gouldner, 1960) and this induces distrust in coworkers. This in turn leads to ineffective social exchange between them (Blau, 1964).

The study makes significant contributions to the realm of spiritual leadership and knowledge hiding literature. First, it investigates empirically the relationship between knowledge hiding behaviors among employees and spiritual leadership. Second, the study investigates the indirect relationship between knowledge hiding and spiritual leadership and uses professional commitment as potential mediator that may explain this link. This study is unique in that it combines perceptions of professional commitment as a mediator of spiritual leadership and knowledge hiding behavior, two aspects that are rarely investigated together. The study has some important implications for research officers, management, and research assistants of the agriculture research institutes of KPK, Pakistan. It will make clear that the phenomena of knowledge hiding at work is at its height in organizations right

now and has caught the attention of researchers from around the world. Decision makers must train and evaluate the leadership and supervisors to adopt the values and practices of value based leaderships to motivate their employees share critical knowledge and benefit their organizations.

2. Theory and hypotheses development

2.1. *Spiritual Leadership and Knowledge Hiding Behavior*

A dedication to integrity, goodness, cooperation, knowledge, thoroughness, and connectedness defines spiritual leadership (Aydin and Ceylan, 2009). Both positive and negative reciprocity norms exist in organizations. Positive reciprocity is the tendency to respond favorably to favorable treatment, whereas negative reciprocity is the tendency to respond negatively to unfavorable treatment (Cropanzano and Mitchell, 2005). According to Bandura's (1973) social learning theory, subordinates frequently view their superiors as role models, and as a result of how they are treated, they imitate their behavior accordingly. Spiritual leadership's through their three defining characteristics; altruistic love, faith/hope and vision, propel and inherently encourage subordinates to look for meaning at work. Their followers subsequently participate in pro-social actions and show concern and true care for their coworkers, which help to improve their coworkers' relationship (Chang and Teng, 2017).

An essential element of spiritual leadership is the altruistic love, which means "a sense of wholeness, harmony, and wellbeing obtained through care, concern, and admiration for both self and others" (Fry, 2003). Spiritual leaders exhibit altruistic love by their actions and behaviors, including care for others, gratitude, compassion and kindness (Fry, 2003). Spiritual leadership adopts social and spiritual ideals including honesty, fairness and ethical conduct, while engaging in making decisions and interacting with others (Meng, 2016; Bayighomog and Arasl, 2019). Positive behaviors can be passed on from one person to the next, according to the conservation of resource theory (Hobfoll et al., 2018). In this regard, Anser et al. (2020) discovered that leaders' good characteristics are transmitted to subordinates and deter them from engaging in activities which undermine their interpersonal connections. One of the unfavorable facts in the workplace is that individuals frequently withhold vital knowledge that is useful for organizational productivity (Abubakar et al., 2019b). According to Fast et al. (2014), the organization is denied access to ideas that foster growth, learning, and adaptation to the ambiguity of the business environment by hiding improvement-oriented knowledge and expertise. Alnaimi, et al. (2022) examined the association of workplace spirituality with the dimensions of knowledge hiding behaviour. Their findings proved that workplace spirituality diminished evasive knowledge hiding behavior. Furthermore, workplace spirituality diminished playing dump knowledge hiding behavior, however it did not diminish rationalised knowledge hiding behavior as the relationship appears to insignificant.

This study implies that subordinates can pick up altruistic tendencies, a sense of self-transcendence, and spiritual values. Consequently, these subordinates would demonstrate the same behaviors of compassion and concern for others and fulfill their spiritual needs. As a result, employees who work with spiritual leaders would be less inclined to engage in socially unproductive practices like knowledge hiding. Instead, they would model spiritual

ideals and selfless love to their coworkers in order to improve their relationships and reduce knowledge hiding behavior (Chang and Teng, 2017). Employees that have absorbed the company vision into their value systems see sharing professional information as a personally desirable realization (De Vries et al., 2006). As a result, we conclude that spiritual leadership minimizes employee's knowledge hiding behavior. Previous research has demonstrated that altruistic love makes a trust-based relationship among individuals (Bayighomog and Arasl, 2019), which diminish knowledge hiding behavior. The current study proposes the following hypothesis based on these theoretical grounds.

H1: There is a significant and negative relationship between spiritual leadership and knowledge hiding behavior.

2.2. *Spiritual Leadership and Professional commitment*

Spiritual leadership is a style of management that places a high value on love, hope, and vision while motivating subordinates (Salehzadeh et al., 2015). Leaders who have feelings of love will make people feel appreciated, respected, and meaningful which can motivate individuals intrinsically to adopt the leader's characteristics and values in this way (Rumangkit, 2020). According to social action theory and spiritual leadership theory, when leaders are able to communicate personal ideals to followers as intrinsic motivation, people will want to bind themselves to organizations with high engagement and try to build an emotional relationship to the leader. This results in strong organizational and professional commitment (Kalantarkousheh, 2014). This is consistent with Benefiel's (2005) finding that employees feel a higher level of affective professional commitment when spiritual leadership is more evident.

The aim of spiritual leadership according to Fry and Cohen (2009), is to "tap into the basic needs of the leaders and followers for spiritual wellness through calling and membership, in order to produce a harmony of vision and value among people, among empowered teams, and between organizational level," that will increase the well-being and professional commitment of the employees. Employee commitment may be shifting from organization to profession as the contingent workforce grows (Blau, 1999). As a result, the organization's objective should be centred on the work's professional content (Huang, 2006). One of the most essential aspects influencing people's work behaviour is their professional commitment (Kannan and Pillai, 2008). In his research, (Khanifar, 2010) discovered that there is a link between workplace spirituality and employee behavior. Professional commitment and spiritual leadership are inextricably linked. In order to influence personnel, spiritual leadership promotes hope, vision, and love (Salehzadeh et al., 2015). Leaders may bring personal ideals and individual values together through hope, vision, and love. Leaders' feelings of love will make people feel appreciated, respected, and meaningful, allowing them to develop intrinsic motivation from inside (Rumangkit, 2020).

Spiritual leadership research combined with professional commitment is still uncommon. Previous research has generally paid attention on the relationship between spiritual leadership and organizational commitment (Fry et al., 2005). Affective, normative, and long-term commitment are the three components of organizational commitment (Allen and Meyer, 1996). The

relationship between spiritual leadership and the level of professional commitment among employees is being investigated for the first time through this study. The inquiry is based on the Spiritual Leadership Theory (SLT) developed by Fry (2003). Leadership that uses values as an intrinsic motivator will, in SLT's opinion, have a good effect on the suitability of values and emotional attachment of various stakeholders within the company. In this way, people will be able to accept the leader's values. Professional commitment is further described as affective professional commitment. According to Benefiel (2005) the more visible spiritual leadership, the greater the affective professional commitment of employees. Spiritual leadership theory and social action theory which states that when leaders can channel personal values to other individuals as intrinsic motivation, individuals will try to bind themselves to organizations with high involvement and try to have an emotional attachment to the leader. This is in line with Benefiel (2005) who found that the more visible spiritual leadership, the higher the commitment felt by employees. Spiritual leadership can be an antecedent of organizational commitment (Kalantarkousheh, 2014). Thus, the following hypotheses are proposed:

H2: There is a significant relationship between spiritual leadership and professional commitment.

2.3. *Professional Commitment and Knowledge Hiding Behavior*

One's dedication to a certain career is referred to as professional commitment (Dolen and Shultz, 1998). Professional commitment means a strong faith in the profession's objectives and core principles, an extensive effort on the profession's behalf and a desire to join the profession (Lu et al. 2002). The degree to which one is involved in carrying out specific tasks in the current work environment to the importance that work plays in one's life has been measured by the professional commitment construct (Someh and Bogler, 2002). According to a study of accountants' professional dedication (Giffords, 2003), professionally committed employees exert effort on behalf of the profession, resulting in their internalization of the profession's success or failure as personal success or failure. Additionally, there are many different types of professional commitment, including professional affective commitment (desired-based), professional continuation commitment (cost-based), and professional normative commitment (obligation-based) (Irving et al. 1997; Meyer and Allen 1984).

Ghani et al. (2020) studied the relationship between professional commitment and knowledge hiding among students. The results of this study showed that learners with a high level of professional commitment view their research subject more emotionally than intellectually, and they truly perceive their requesters as prospective collaborators rather than competitors. As a result, people with high internal professional commitment may expressly oppose knowledge hiding, while those with low professional commitment may do so when asked. According to Butt (2020), when managers receive bonuses and incentives, their professional commitment to the company grows, which eventually results in less knowledge-hiding behavior. Men et al. (2018) found a negative relationship between ethical leadership and knowledge hiding, their study further suggested investigating professional commitment as potential antecedent of knowledge hiding. Men et al. (2018) found a significant negative relationship between ethical leadership and knowledge hiding, their

study further suggested investigating professional commitment as potential antecedent of knowledge hiding. Hence, the study seeks to examine the relationship between employee's professional commitment and their knowledge hiding behavior

Thus, the following hypotheses are proposed:

H3: There is a significant relationship between professional commitment and knowledge hiding behavior.

2.4. The mediating role of Professional Commitment between Spiritual leadership and knowledge hiding behavior

Indeed, through fostering positive social emotions like compassion, concern for others, and gratitude through altruistic love, spiritual leadership motivates subordinates to help and care for the wellbeing of their coworkers (Fry et al., 2017). In light of this, spiritual leaders create a welcoming environment based on belief and love for others, which helps followers build trusting relationships and creates a solid social bond (Bayighomog and Arasl, 2019). Spiritual leadership, according to Bayighomog and Arasl (2019), fosters a culture of love, optimism, and transcendental vision that affects the hearts of the employees and reduces instances of counterproductive behaviors. Through an interactional method (a bottom-up strategy that promotes two-way communication (Ali et al., 2020), spiritual leaders convey a compelling transcendent vision to employees, increasing employee involvement in critical decisions and removing uncertainties related to their professional roles (Fry, 2003). Alternatively, employees are given many resources by spiritual leaders' social support at work, such as role clarity and self-transcendent foresight, which not only inspires them to perform their professional tasks but also encourages them to think about the welfare of others (Fry et al., 2005).

Additionally, through their transcendent vision, spiritual leaders enable and intrinsically motivate their followers to help others, establish responsible social bonds, and take actions that have a positive impact on their coworkers' relational wellbeing. This instills a sense of meaning and purpose in the lives of those followers (Hunsaker, 2016; Bayighomog and Arasl, 2019). As a result, spiritual leadership can help employees build strong relationships with coworkers, which can result in mutual support and a positive feedback loop. They also see the sharing of professional knowledge as a personally rewarding realization (De Vries et al., 2006). According to social learning theory, subordinates generally view their superiors as role models, and as a result of how they are treated, they also adopt those behaviors (Bandura 1973). Spiritual leaders, according to Wang et al. (2019), promote essential individual organizational behaviors such as practicing knowledge sharing and opposing knowledge hiding behaviors.

The social action theory and spiritual leadership theory serve as the theoretical underpinnings for using professional commitment as a mediator. The values of spiritual leadership are conveyed to subordinates making them motivated to their profession. Employees working under spiritual leadership would not squander resources which may weaken their devotion to their profession and result in the loss of other valuable resources such as knowledge in this respect. Instead, they are more inclined to take part in constructive behaviors like altruism and pro-sociality, which can help them obtain future resource gains. In light of prior research, we believe that spiritual leadership

improves employee commitment to their professions, which have a negative impact on knowledge hiding behavior.

The current study asserts that spiritual leadership strengthens employee's professional commitment through altruistic love, hope/faith, and transcendent vision which helps prevent or lessen knowledge hiding behaviour because leaders and their subordinates are important sources of commitment. Allen and Myer (1996) notion of organizational commitment is comparable to the definition of professional commitment. Professional commitment has three dimensions: emotive, ongoing, and normative (Abtahi and Molaee, 2007). These theoretical considerations support this study's proposed hypothesis that professional commitment is a mediator with spiritual leadership affecting knowledge hiding behaviors. It is necessary to conduct further research since Connelly et al. (2012) found that workers who have high levels of professional commitment would not hide their knowledge because they see meeting coworkers' demands as part of their professional obligation. Social exchange theory states that individuals will respond positively by creating long-term relationships and trying to have an emotional attachment to the leadership when the organization supports individuals and leaders to help each other. Emotional attachments will be realized when individuals receive values that belong to leaders and individual values. So that when the value conformity occurs it will increase the employee's commitment. Based on the spiritual leadership theory, leaders who give love will become employees' intrinsic motivation. So, employees will be interested in accepting the values that apply in the leader (Rumangkit, 2020) which will enhance their professional commitment.

Thus, we propose:

H4. Professional commitment mediates the relationship between spiritual leadership and knowledge hiding behavior.

3. Methodology

3.1. Sample and Data Collection

The study used questionnaire based survey approach. Participants in the study were research professionals working in agricultural research institutes of KPK, Pakistan. The said population was selected for this study because Pakistan is an agricultural country and agriculture research institutes are crucial given the importance of the sector to the country's economy and the value it has in terms of creating jobs. As a result, we view the current study examining employees' knowledge hiding behaviors at agriculture research institutes in Khyber pakhtunkhwa, Pakistan, as important. The population size for the study was 1230 research professionals. According Ume Sekaran, for a population of 1200, a sample size of 291 is sufficient for generalizability of the findings. Female made up 51 (17.11%) of the sample, while male made up 247 (82.89%). The respondents ranged in age from 24 to 54 years. The average tenure in an organization was 5.8 years. All of the respondents had a bachelor's degree or higher. The sample includes a variety of positions such as research officers, research assistants, and HR managers. The purposive sampling technique was used to collect data from agricultural research professionals. A total of 298 usable responses were obtained from various research institutes in the Khyber pakhtunkhwa region of Pakistan.

Questionnaires were distributed directly as well as through email to each institute. Data were gathered twice, separated by four weeks, each time. This is consistent with the recommendation of Podsakoff et al. (2003) in order to overcome the common method bias risk. This study uses two waves method; first, the corresponding HR managers of the organization were contacted and briefed about the study as well as the reason for the data collection. The interested parties were given instructions for completing out the survey and were assured for the confidentiality of their provided information. At time 1, the respondents provided basic demographic data about themselves and completed a Five point Likert scale to score the mediating variable, professional commitment, and the predicting variable, spiritual leadership. At time Point 1, we got 341 responses. We contacted the same group of respondents again four weeks later to get their feedback on their knowledge hiding behavior. The total responses of 298 were used after the incomplete and disinterested responses were eliminated.

3.2. Measures

In this study, spiritual leadership served as an independent variable, knowledge hiding served as a dependent variable, and professional commitment served as a mediator. A total of 39 items on a 5-point Likert scale were used. Respondents can use the Likert scale to better characterize the strength of their emotions or behaviors, which leads to the most precise evaluation of the variables under research that would otherwise be difficult to measure directly (Bryman, 2016). Another advantage of employing this scale in the questionnaire is the ease of administration and low cost of gathering data from a large number of people. Based on these grounds, the study used a five point Likert scale to collect data. The suggested model's variables are based on reliable and valid measurements that have been used by other researchers in past studies and have good psychometric properties. Spiritual leadership was measured through an 18-items scale used by Fry, (2008). Moreover, for the measurement of knowledge hiding, a 12-items scale containing three dimensions of knowledge hiding used by Connelly et al. (2012) was adopted. Similarly, to measure professional commitment, a 9-item scale, used by Teng et al. (2007) was adopted. On the scale, respondents rated how much they agreed or disagreed with each statement

4. Data Analysis and Results

The study employed PLS-SEM for data analysis. Preferring PLS-SEM is based on the reasons that it is suitable evaluating complex models that contain several auxiliary variables i-e mediating and moderating variables (Hair et al., 2014). Moreover, PLS-SEM is not constrained by the assumption of normality. Finally, PLS-SEM is more preferred when there is a small sample size (as in this work). Utilizing SPSS and AMOS, the study first tested for common method bias. The smart PLS 4.0 was used which is the latest version to analyze the measurement and the structural model. The data analysis was performed in two stages: (i) measurement model analysis, and (ii) analyzing the structural model. Measurement model includes the measurement of the indicators, their reliability and validity, as well as the reliability and validity of the formative constructs. The investigation of the relationships between the latent variables or constructs is done using the structural model. The path

coefficients, direct and indirect effects, mediating effects, as well as the coefficient of determination (R²) are all included in this analysis.

4.1. Common Method Bias

The majority of cross-sectional studies that use the same approach to collect data from a single source are vulnerable to common method bias (CMB) (Podsakoff et al., 2003). The current study addressed this matter by collecting and analyzing data using the two wave data collecting method. We performed a co linearity test by measuring "VIF" values, and we discovered that all of the value is below the cut off value of 3.3. It proves the model has no risk of common method bias.

4.2. Measurement Model

All of the first-order latent variables' reliability, convergent and discriminant validity were evaluated in the measurement model. Each study variable's reliability was evaluated at the item and construct levels. All variables' Cronbach's alpha (CA) values were above the cutoff of 0.70 (Table.1). The internal consistency of all the constructs is demonstrated by the fact that the CR for all the dependent, independent, and mediating variables ranged between 0.961 to 0.993, which is above the required level of 0.70. (Hair et al., 2012). Their composite reliability (CR) also indicating good construct reliability (Nunnally, 1978).. The "AVE" values for the three constructs were computed to evaluate the convergent validity for the variables. It was discovered that the values were all over 0.5 ranging from 0.875 to 0.981 (Table. 1). This indicates that all three constructs have a high degree of convergent validity.

Table 1. Construct Reliability and Validity.

Constructs	No Of Items	CR	Cronbach's alpha	AVE	Mean	SD
KH	12	0.961	0.940	0.981	9.570	5.240
PC	09	0.984	0.982	0.875	9.500	3.230
SL	18	0.993	0.993	0.892	10.200	5.250

Note.CR: Composite Reliability, AVE: Average Variance Extracted, SD: Standard Deviation, KH: Knowledge Hiding, PC: Professional Commitment, SL: Spiritual Leadership.

4.3. Discriminant Validity

Discriminant validity, as opposed to convergent validity, measures how much one latent construct differs from another (Duarte and Raposo, 2010). Through AVE, discriminant validity is determined (Fornell and Larcker, 1981).The Fornell-Larcker test was employed in the study to determine whether the construct's AVE's square root exceeds their largest correlations with some other research constructs or not (Table.2). Additionally, the findings show that all of the latent variables have correlation values are lower than the AVE square roots. The constructs are confirmed to be unique and meet the requirements for discriminant validity.

Table 2. Discriminant Validity.

	KH	PC	SL
KH	0.944		
PC	-0.279	0.936	
SL	-0.197	0.824	0.945

4.4. Outer Loadings

Second, it was examined if the outer loadings (table.3) of each indicator were stronger on the target construct. To evaluate the indicator reliability, we looked at item to-construct loadings, and we discovered that all values were over the cutoff point of 0.70. Our results confirm the appropriateness of the measures that each item served as a reliable indicator for its associated latent variable.

Table 3. Outer Loadings.

	KH	PC	SL
EKH	0.935		
PD	0.934		
RKH	0.962		
PC1		0.963	
PC2		0.944	
PC3		0.968	
PC4		0.893	
PC5		0.945	
PC6		0.893	
PC7		0.939	
PC8		0.958	
PC9		0.914	
SL1			0.977
SL2			0.968
SL3			0.977
SL4			0.966
SL5			0.952
SL6			0.949
SL7			0.938
SL8			0.969
SL9			0.966
SL10			0.961
SL11			0.943
SL12			0.859
SL13			0.924
SL14			0.893
SL15			0.848
SL16			0.966
SL17			0.965
SL18			0.966

4.5. HTMT Ratio

Third, when determining discriminant validity, we looked at the ratio of correlations i-e HTMT values. This method outperforms both the Fornell-Larcker criterion as well as the evaluation of cross-loadings (Henseler et al.,

2015). All the scores of HTMT (table.4) are below 0.85, indicating that the current study's discriminant validity is reached (Henseler et al., 2015).

Table.4 HTMT Ratio

Constructs	KH	PC	SL
KH			
PC	0.273		
SL	0.202	0.829	

Note.KH: Knowledge Hiding, PC: Professional Commitment, SL: Spiritual Leadership.

4.6. Coefficient of determination (R²)

The most important factor to consider while evaluating the structural path model for the dependent variable is R² determination (Hair et al., 2014b). The R² value shows how well the dependent variable can account for the sum of independent factor variances (Cohen, 1988). However, it is frequently believed that the more variants there are, the higher the R²-value. According to Chin et al. (1998), R²-values are now more acceptable because of the aforementioned categorization and the fact that the current study used the PLSSEM technique as its major statistical analysis. KH has a value of 0.810 and PC has a value of 0.667 of R². Table 5 measures the R² value of the constructs.

Table 5. Coefficient of Determination R².

	R-square	R-square adjusted
KH	0.815	0.810
PC	0.678	0.677

4.3. Structural Model

The structural model that demonstrates the direct and indirect impacts of spiritual leadership on knowledge hiding using professional commitment as a mediating variable is shown in Figure 1. Similar to this, Figure 1 also displays the path coefficients. Instead of using goodness-of-fit (GoF) metrics, as is the case with covariance structure analysis, PLS-SEM check; the overall structural model fit determined by the VIF values, significance and direction of the relationships, R² and "f²(effect size) values and SRMR values. Calculating the VIF values of the focus constructs revealed that there was no threat from collinearity because they were less than 5.0 (Table. 6).

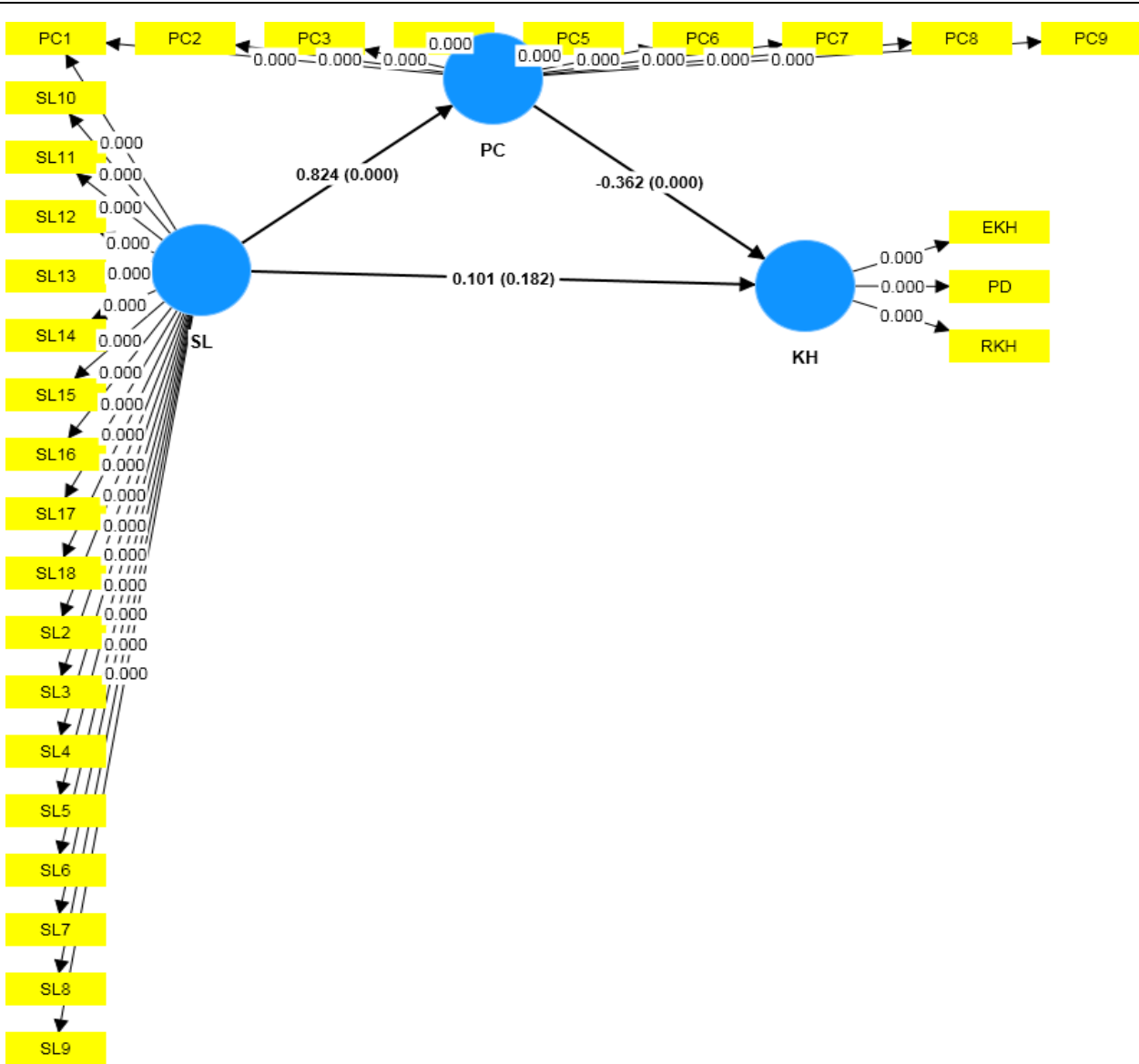


Figure 1. Structural Model with Path Analysis.

Table 6. Collinearity Statistics of Structural Mode l (Inner VIFs).

	KH	PC	SL
KH			
PC	3.11		
SL	3.11	1.00	

Note. KH: Knowledge Hiding, PC: Professional Commitment, SL: Spiritual Leadership.

In the PLS-SEM bootstrapping process, 5,000 samples were used (Hair et al., 2014a) to determine the relationship between spiritual leadership, knowledge hiding and mediator professional commitment. Table.7 displays the results for exogenous and endogenous variables, their Beta coefficients, t-

values, p-values and decisions are made on the basis of the results. Table 4 displays all of the direct hypothesis results. Since there are strong relationships between spiritual leadership and knowledge hiding, spiritual leadership and professional commitment, and professional commitment and knowledge hiding. Hence, all three direct hypotheses (H1, H2, and H3) are accepted. Briefly stated, the study's accepted significant associations include, (i) SL- > KH ($\beta = -0.197$, $p = 0.000$ and $t = 5.489$, (ii) SL - > PC ($\beta = 0.824$, $p = 0.000$ and $t = 4.412$), and (iii) PC - > KH ($\beta = -0.362$, $p = 0.000$ and $t = 25.403$). These are direct relationships which are significant.

Table 7. Total Effects.

	Original sample	Standard deviation	T statistics	P values	Decision
SL -> KH	-0.197	0.045	4.412	0.000	Accepted
SL -> PC	0.824	0.032	25.403	0.000	Accepted
PC -> KH	-0.362	0.066	5.489	0.000	Accepted

4.4. Mediation Analysis

PLS-SEM and bootstrapping are used to measure this model in accordance with the structural path model, with 5,000 samples being utilized to assess the mediating role of professional commitment between spiritual leadership and knowledge hiding behavior. According to Hair et al. (2014a), bootstrapping is suitable for mediation analysis in PLS-SEM. Employing the bootstrapping approach of Baron and Kenny (1986), PLS-SEM is used for measuring the mediating effect. This study examines the indirect or the mediating effect of professional commitment between spiritual leadership and knowledge hiding behavior. Further results are shown in table.8, SL - >PC - > KH ($\beta = -0.302$, $p = 0.000$ and $t = 5.028$). Based on these results, the mediating effect is significant hence H4 is accepted.

Table 8. Mediation Results.

Total effect(SL→KH)			Direct ef- fect(SL→KH)			Hypothesis	Indirect effect of SL on KH					Percentile bootstrap 95% confi- dence inter- val	
Coeffi- cient	T value	p- value	Coeffi- cient	t- value	p- value		Coeffi- cient	SE	T value	p- value		LCI	UCI
-0.199	4.412	0.000	0.103	1.334	0.182	SL→PC→KH	-0.302	0.059	5.028	0.000		-0.428	- 0.106

Note.SE: Standard Error, SL: Spiritual Leadership, PC: Professional Commitment, KH: Knowledge Hiding.

The structural model's effect size (f^2) is shown in Table.5, and when matched with Cohen's (1988) rules of small (0.02), medium (0.15), and large (0.35), the results in Table.9 shows that the effect size of spiritual leadership on subordinate's knowledge hiding is 0.04, which shows small effect size. The effect size of spiritual leadership on professional commitment is 2.11 indicating a large effect size; where as the effect size of professional commitment on knowledge hiding is 0.046, indicating a large impact size.

Table 9. Effect size (f^2).

	KH	PC	SL
KH			
PC	0.046		
SL	0.040	2.11	

Note. KH: Knowledge Hiding, PC: Professional Commitment, SL: Spiritual Leadership.

Lastly, the value of SRMR is 0.06, which is below the cutoff level of 0.10, confirming the PLS structural model's overall fit (Henseler et al., 2015).

5. Conclusion

5.1. Discussion and conclusion

The current study looked at the relationship between spiritual leadership and knowledge-hoarding behavior among employees, as well as the mediating role played by professional commitment. The first hypothesis (H1) looked at empirical investigation of relationship between spiritual leadership and behavior and subordinate’s knowledge hiding behavior. The results showed that the β -value was found negative at -0.197 and t-statistics found above the threshold level i-e $4.412 > 1.96$ with a p -value of 0.000. Therefore, *H1* was accepted and found to be negatively significant. Spiritual leadership possesses the same values of workplace spirituality therefore both are the same concepts. The findings of this study are in line with the studies of Muavia et al. (2022) and Alnaimi et al. (2022). Their results reveal that the dimensions of workplace spirituality; meaningful work and values alignment play significant roles in reducing knowledge-hiding in terms of workplace spirituality's three dimensions of evasive hiding, rationalized hiding and “playing dumb. Both the studies found a negative relationship between workplace spirituality and knowledge hiding behavior. In agricultural research institutes of Pakistan, spiritual values i-e compassion and altruistic love and honesty play a vital role in shaping a cooperative environment for research professional to share their valuable knowledge for the betterment of organizational success. The second hypothesis (*H2*) examined the empirical proof of the relationship between spiritual leadership and employee’s professional commitment. The results showed that the β -value was found positive at 0.824 and t-statistics was observed as $25.403 > 1.96$ with a p -value of 0.000. Therefore, *H2* was accepted and found to be positively significant. The findings of this study are similar to the study of Shohoodi, et al. (2013) who found a significant relationship between spiritual leadership and professional commitment of employees. In agriculture research institutes of Pakistan, the research professionals are the backbone of R& D for innovations in the field of agriculture. As employees get inspirations from their leaders, it is necessary for leadership to practices the values of spiritual leadership and makes feel their subordinates being valued so that they love their organization and their profession. The third hypothesis (*H3*) examined empirically the relationship between professional commitment and knowledge hiding behavior. The results showed that the β -value as negative at -0.362 and t-statistics were greater than the threshold level as $5.489 > 1.96$ with a p -value of 0.000. Hence, *H3* was found to be negatively significant. The results are similar to the study of Ghani et al. (2020) who found that High professional commitment affect knowledge hiding negatively, while low professional commitment affect knowledge hiding positively. The fourth hypothesis (*H4*) examined the empirically mediating role of professional commitment between spiritual leadership and knowledge hiding behavior. The results showed that the β -value was

positive at -0.302 and t-statistics were above the threshold level as $5.028 > 1.96$ with a p -value of 0.000. Thus, $H4$ was accepted and found to be negatively significant. There is no proper evidence of this mediating relationship in the previous literature, however, these results can be related to the study of Muavia et al. (2022) who reported a negative relationship between workplace spirituality and knowledge hiding behavior and confirmed the mediating role of organizational identification.

The findings are supported further by SET, which suggests that when an employee perceives leadership to be supportive and displaying spiritual values at work, he or she is motivated and a sense of cooperation enable him to show productive workplace behavior such as helping coworkers and share their valuable knowledge instead of hiding it. Our findings were also supported by conservation of resources theory, which suggest that employees who regard knowledge as a valuable resource that they do not want to waste hide it from others. The study's findings indicate that the mediator, i.e. professional commitment, fully mediates the negative relationship between spiritual leadership and knowledge hiding behavior. The current study is one of the few empirical studies that examined the link between knowledge-hiding behavior among employees and spiritual leadership. The majority of previous studies have emphasized knowledge sharing rather than knowledge hiding. Contrary to popular misconception, the two notions are two separate constructs with distinct antecedents and different outcomes rather than the two endpoints of the same continuum. The indirect effect of the mediator, professional commitment was also examined in this study to help explain the relationship between the focused constructs. The mediation process clarifies how spiritual leadership help mitigate the maladaptive conduct of knowledge hiding at workplace.

5.2. Implications and contributions

The study's results have a number of theoretical and managerial implications. The first is that spiritual leadership is a widespread workplace implication that has a positive impact on job outputs and, most significantly, the profitability of the organization. Because of the interpersonal relationship between leaders and the subordinate, all knowledge-intensive sectors are substantially at risk if they have a destructive culture of people hiding knowledge. Agriculture research institutions heavily rely on key judgments based on real-time data or information, and if for some reason the decision-makers throughout the organizational hierarchy does not have access to key information, the results could be disastrous. Organizations may even lose their competitive advantage as a result of internal conflict that causes knowledge hiding.

Knowledge hoarding as a reaction to some dysfunctional leadership may hinder innovation and creativity at work and may promote a culture of secrecy, which is untypical of what businesses and other stakeholders demand. It is very challenging to entirely rid the workplace of this interpersonal annoyance (Pradhan and Jena, 2016). Organizations can, however, adopt a zero-tolerance policy in this regard, which will reassure the employees that sufficient checks and balances have been implemented by the company to guarantee that they are treated fairly and respectfully at work. Second, organizations may think about training and preparing the leadership to exhibiting typical spiritual behaviors, such as altruistic love, cooperation and support to followers. Third, organizations could also think about providing therapy and support services to its members to follow the values of their leadership being spiritual at workplace.

5.3. Limitations and further study

Although the study makes a substantial contribution to our understanding of the direct and indirect effects of spiritual leadership on employees' knowledge-hiding behaviors, it has certain limitations. First, the study has only used one source and single method to gather the data that constitutes a risk of CMB. Although the current study followed the recommendations made by Podsakoff et al. (2003) during the data collecting and analysis

phases, precautions were nonetheless taken to counter the CMB risk however; Future research may use objective data from multiple sources to improve our comprehension of this link. Second, the cultural perspective could have an important effect on findings. In future, researchers need to conduct similar studies from different cultural perspectives; longitudinal research may also give confirmatory evidence for the findings of the current study. Moreover, future studies may also identify more factors that contribute to enhancing knowledge hiding in the workplace. Psychological ownership of knowledge as a moderator may buffer the harmful effect of knowledge hiding. We also encourage future researchers to recognize additional leadership styles such as transformational leadership as a mitigating factor of knowledge hiding behavior because research shows that both have relevance and similarities in their management approach being value based leadership style.

References

1. Abtahi, S. H. and Molaee, N. (2007), "the relationship between professional and organizational commitment", *tadbir journal*, no. 177, pp.
2. Abubakar, A. M., Elrehail, H., Alatailat, M. A. and Elçi, A. (2019a) 'Knowledge management, decision-making style and organizational performance', *Journal of Innovation & Knowledge*, Vol. 4, No. 2, pp. 104–114.
3. Abubakar, A. M., Behraves, E., Rezapouraghdam, H. and Yildiz, S. B. (2019b) 'Applying artificial intelligence technique to predict knowledge hiding behavior', *International Journal of Information Management*, Vol. 49, pp. 45–57
4. Ali, S. H., & Sagsan, M. (2020). The Mediating role of Knowledge-Oriented Leadership Between Bureaucratic Culture and Knowledge Creation: The case of Public Universities in Northern Iraq. Paper presented at the European Conference on Knowledge Management. *Saf. Sci.* 131, 104923 <https://doi.org/10.1016/j.ssci.2020.104923>.
5. Ali, M., Usman, M., Pham, N. T., Agyemang-Mintah, P., & Akhtar, N. (2020). Being ignored at work: Understanding how and when spiritual leadership curbs workplace ostracism in the hospitality industry. *International Journal of Hospitality Management*, 91, 102696.
6. Allen, N. J., & Meyer, J. P. (1996). Affective, Continuance, and Normative Commitment to the Organization: an Examination of Construct Validity. *Journal of Vocational Behavior*, 49(3), 252–276.
7. Alnaimi, A. M. M., Almasri, A. K., & Rehman, S. U. (2022). Workplace spirituality and knowledge hiding behaviour: a PLS-SEM analysis. *International Journal of Business Information Systems*, Vol. ahead-of-print No. ahead-of-print.
8. Amanchukwu, R. N., Stanley, G. J., & Ololube, N. P. (2015). A review of leadership theories, principles and styles and their relevance to educational management. *Management*, 5(1), 6–14.
9. Anser, M. K., Ali, M., Usman, M., Rana, M. L. T., Yousaf, Z., 2020. Ethical leadership and knowledge hiding: an intervening and interactional analysis. *Serv. Ind. J.* 1–23.
10. Anser, M. K., Ali, M., Usman, M., Rana, M. L. T., & Yousaf, Z. (2021). Ethical leadership and knowledge hiding: an intervening and interactional analysis. *The Service Industries Journal*, 41(5–6), 307–329.
11. Aydin, B., and Ceylan, A. (2009). The effect of spiritual leadership on organizational learning capacity. *Afr. J. Bus. Manag.* 3, 184–190. doi: 10.5897/ AJBM09.015
12. Babakus, E., & Mangold, W. G. (1992). Adapting the SERVQUAL scale to hospital services: an empirical investigation. *Health services research*, 26(6), 767.
13. Babcock, P. (2004). Shedding light on knowledge management. *HR Magazine*, 49(5), 46–51.
14. Bandura, A. (1973). *Aggression: a social learning theory*. Englewood Cliffs: Prentice-Hall.
15. Bandura, A. (1986). *Social foundations of thought and action: a social cognitive theory*. Englewood Cliffs: Prentice-Hall
16. Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173.
17. Bayighomog, S. W., & Araslı, H. (2019). Workplace spirituality–customer engagement Nexus: The mediated role of spiritual leadership on customer–oriented boundary–spanning behaviors. *The Service Industries Journal*, 39(7–8), 637–661.
18. Benefiel, M. (2005). The Second Half of the Journey: Spiritual Leadership for Organizational Transformation. *The Leadership Quarterly*, 16(5), 723–747.
19. Blau, G. (1999), "early career job factors influencing the professional commitment of medical
20. technologists", *academy of management journal*, no. 6, pp. 687–895
21. Boorom, R., 2009. *Spiritual Leadership: a Study of the Relationship between Spiritual Leadership Theory and Transformational Leadership* (Doctoral Dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 3377759).
22. Bordia, P., Irmer, B. E., & Abusah, D. (2006). Differences in sharing knowledge interpersonally and via databases: The role of evaluation apprehension and perceived benefits. *European Journal of Work and Organizational Psychology*, 15, 262–280.
23. Bryman, A. (2016). *Social research methods*. Oxford university press.

24. Butt, A. S., & Ahmad, A. B. (2020). Strategies to mitigate knowledge hiding behavior: building theories from multiple case studies. *Management Decision*.
25. Butt, A. S. (2020). Mitigating knowledge hiding in firms: an exploratory study. *Baltic Journal of Management*, 15(4), 631-645.
26. Černe, M., Nerstad, C.G.L., Dysvik, A. and Škerlavaj, M. (2014), "What goes around comes around: knowledge hiding, perceived motivational climate, and creativity", *Academy of Management Journal*, Vol. 57, pp. 172-192.
27. Chang, J.H., Teng, C.C., 2017. Intrinsic or extrinsic motivations for hospitality employees' creativity: the moderating role of organization-level regulatory focus. *Int. J. Hosp. Manag.* 60, 133–141.
28. Cohen, J. (1988). Set correlation and contingency tables. *Appl. Psychol. Meas.* 12, 425–434. doi: 10.1177/014662168801200410
29. Connelly, C. E., & Zweig, D. (2015). How perpetrators and targets construe knowledge
30. hiding in organizations. *European Journal of Work and Organizational Psychology*, 24(3), 479–489.
31. Copeland, M. K. (2014). The emerging significance of values based leadership: A literature review. *International journal of leadership studies*, 8(2), 105.
32. Cropanzano, R., & Mitchell, M. S. (2005). Social exchange theory: An interdisciplinary review. *Journal of management*, 31(6), 874-900.
33. De Vries, R. E., van den Hooff, B., and de Ridder, J. A. (2006). Explaining knowledge sharing: the role of team communication styles, job satisfaction, and performance beliefs. *Commun. Res.* 33, 115–135. doi: 10.1177/0093650205285366
34. Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. *The leadership quarterly*, 25(1), 36-62.
35. Dolen, M. R., & Shultz, K. S. (1998). Comparison of organizational, professional, university, and academic commitment scales. *Psychological Reports*, 82(3_suppl), 1232–1234.
36. Duarte, P. A. O., and Raposo, M. L. B. (2010). "A PLS model to study brand preference: An application to the mobile phone market," in *Handbook Of Partial Least Squares*, eds V. E. Vinzi, W. W. Chin, J. Henseler, and H. Wang (Berlin: Springer), 449–485. doi: 10.1007/978-3-540-32827-8_21
37. Fairholm, M. (2003), "Leading with spirit in public organizations", *PA Times*, Vol. 26 No. 11, p. 4.
38. Farooq, R., & Sultana, A. (2021). Abusive supervision and its relationship with knowledge hiding: the mediating role of distrust. *International Journal of Innovation Science*.
39. Fast, N.J., Burris, E.R. and Bartel, C.A. (2014) 'Managing to stay in the dark: managerial self-efficacy, ego defensiveness, and the aversion to employee voice', *Academy of Management Journal*, Vol. 57, No. 4, pp.1013–1034.
40. Fornell, C., and Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *J. Mark. Res.* 18, 382–388
41. Fry, L. W. (2003). Toward a theory of spiritual leadership. *The Leadership Quarterly*, 14(6), 693–727. <https://doi.org/10.1016/j.leaqua.2003.09.001>
42. Fry, L. W., Vitucci, S., & Cedillo, M. (2005). Spiritual leadership and army transformation: Theory, measurement, and establishing a baseline. *The Leadership Quarterly*, 16(5), 835–862. <https://doi.org/10.1016/j.leaqua.2005.07.012>
43. Fry, L.W., Slocum Jr, J.W., 2008. Maximizing the triple bottom line through spiritual
44. leadership. *Organizational Dynamics* 37, 86–96.
45. Fry, L. W., and Cohen, M. P. (2009). Spiritual leadership as a paradigm for organizational transformation and recovery from extended work hours cultures. *J. Bus. Ethics* 84, 265–278. doi: 10.1007/s10551-008-9695-2
46. Fry, L.W., Latham, J.R., Clinebell, S.K., Krahnke, K., 2017. Spiritual leadership as a model for performance excellence: a study of Baldrige award recipients. *J. Manag. Spiritual. Relig.* 14 (1), 22–47.
47. Ghani, U., Teo, T., Li, Y., Usman, M., Islam, Z. U., Gul, H., ... & Zhai, X. (2020). Tit for tat: Abusive supervision and knowledge hiding-the role of psychological contract breach and psychological ownership. *International journal of environmental research and public health*, 17(4), 1240.
48. Ghani, U., Zhai, X., Spector, J. M., Chen, N. S., Lin, L., Ding, D., & Usman, M. (2020). Knowledge hiding in higher education: Role of interactional justice and professional commitment. *Higher Education*, 79(2), 325-344.
49. Ghobadi, S. (2015). What drives knowledge sharing in software development teams: A literature review and classification framework. *Information & Management*, 52(1), 82–97.
50. Giffords, E.D. (2003) , " an examination of organizational and professionals commitment
51. among public, not for profit and proprietary social service employees" , *journal of administration in social work* , vol. 27,no.3 , pp : 5-23dian publication
52. Gouldner, A. W. (1960). The norm of reciprocity. *American Sociological Review*, 25, 161–178.
53. Hair, J. F., Sarstedt, M., Ringle, C. M., and Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *J. Acad. Mark. Sci.* 40, 414–433
54. Hair, J. F. Jr., Sarstedt, M., Hopkins, L., and Kuppelwieser, V. G. (2014b). Partial least squares structural equation modeling (PLS-SEM): An emerging tool in business research. *Eur. Bus. Rev.* 26, 106–121. doi: 10.1108/EBR-10-2013-0128

55. Hair, J. F. Jr., Hult, G. T. M., Ringle, C., and Sarstedt, M. (2014a). *A Primer On Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Los Angeles, CA: SAGE.
56. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the academy of marketing science*, 43(1), 115-135.
57. Hobfoll, S. E. (1989). Conservation of resources: A new attempt at conceptualizing stress. *The American Psychologist*, 44, 513-524.
58. Hobfoll, S.E., Halbesleben, J., Neveu, J.P., Westman, M., 2018. Conservation of resources in the organizational context: the reality of resources and their consequences. *Annu. Rev. Organ. Psychol. Organ. Behav.* 5 (1), 103-128.
59. Huang, G. B., Zhu, Q. Y., & Siew, C. K. (2006). Extreme learning machine: theory and applications. *Neurocomputing*, 70(1-3), 489-501.
60. Hunsaker, W.D., 2016. Spiritual leadership and organizational citizenship behavior: relationship with Confucian values. *J. Manag. Spiritual. Relig.* 13 (3), 206-225.
61. Irving, P. G., Coleman, D. F., & Cooper, C. L. (1997). Further assessments of a three-component model of occupational commitment:
62. Issac, A. C., Baral, R., & Bednall, T. C. (2021). What is not hidden about knowledge hiding: Deciphering the future research directions through a morphological analysis. *Knowledge and Process Management*, 28(1), 40-55.
63. Jha, J. K., & Varkkey, B. (2018). Are you a cistern or a channel? Exploring factors triggering knowledge-hiding behavior at the workplace: evidence from the Indian R&D professionals. *Journal of Knowledge Management*.
64. Kalantarkousheh, S. M., Sharghi, N., Soleimani, M., & Ramezani, S. (2014). The Role of Spiritual Intelligence on Organizational Commitment in Employees of Universities in Tehran Province, Iran. *Procedia-Social and Behavioral Sciences*, 140(1), 499-505.
65. Kannan, R. and Pillai, M.P. (2008), "an examination on the professional commitment of engineering college teacher", *international business management*
66. Kanter, R. M. (1968). Commitment and Social Organization: a Study of Commitment Mechanisms in Utopian Communities. *American Sociological Review*, 33(4), 499-517.
67. Keil, M., Smith, H. J., Iacovou, C. L., and Thompson, R. L. 2014. "The Dynamics of IT Project Status Reporting: A Self-Reinforcing Cycle of Distrust," *Journal of the Association for Information Systems* (15:12), pp. 879-912.
68. Kelloway, E. K., & Barling, J. (2000). Knowledge work as organizational behavior. *International Journal of Management Reviews*, 2, 287-304.
69. Khalid, M., Bashir, S., Khan, A.K. and Abbas, N. (2018), "When and how abusive supervision leads to knowledge hiding behaviors", *Leadership and Organization Development Journal*, Vol. 39 No. 6, pp. 794-806.
70. Khanifar, H., Jandaghi, G., & Shojaie, S. (2010). Organizational consideration between spirituality and professional commitment. *European Journal of Social Sciences*, 12(4), 558-571.
71. Linstead, S., Maréchal, G. and Griffin, R.W. (2014), "Theorizing and researching the dark side of organization", *Organization Studies*, Vol. 35 No. 2, pp. 165-188
72. Lu, K.-Y., Lin, P.-L., Wu, C.-M., Hsieh, Y.-L., & Chang, Y.-Y. (2002). The relationships among turnover intentions, professional commitment, and job satisfaction of hospital nurses. *Journal of Professional Nursing*, 18(4), 214-219.
73. Malik, O. F., Shahzad, A., Raziq, M. M., Khan, M. M., Yusaf, S., & Khan, A. (2019). Perceptions of organizational politics, knowledge hiding, and employee creativity: The moderating role of professional commitment. *Personality and Individual Differences*, 142, 232-237.
74. Men, C., Fong, P. S., Huo, W., Zhong, J., Jia, R., & Luo, J. (2018). Ethical leadership and knowledge hiding: a moderated mediation model of psychological safety and mastery climate. *Journal of Business Ethics*, 1-12.
75. Men, C., Fong, P.S., Huo, W., Zhong, J., Jia, R. and Luo, J. (2018) 'Ethical leadership and knowledge hiding: a moderated mediation model of psychological safety and mastery climate', *Journal of Business Ethics*, Vol. 166, No. 3, pp.461-472
76. Meng, Y., 2016. Spiritual leadership at the workplace: perspectives and theories. *Biomed. Rep.* 5 (4), 408-412.
77. Meyer, J. P., & Allen, N. J. (1984). Testing the "side-bet theory" of organizational commitment: some methodological considerations. *Journal of Applied Psychology*, 69(3), 372-378.
78. Muavia, M., Hussain, G., Sahibzada, U. F., & Ismail, W. K. W. (2022). Workplace spirituality, knowledge-hiding and the mediating role of organizational identification: evidence from Pakistan. *International Journal of Emerging Markets*.
79. Nicolae, M., Ion, I., Nicolae, E., 2013. The research agenda of spiritual leadership. Where do we stand? *Rev. Manag. Comp. Int.* 14 (4), 551-566.
80. Nonaka, I., Toyama, R. and Hirata, T. (2008) *Managing Flow: A Process Theory of the Knowledge-Based Firm*, Springer, Palgrave Macmillan, UK.
81. Oh, J., & Wang, J. (2020). Spiritual leadership: Current status and Agenda for future research and practice. *Journal of Management, Spirituality & Religion*, 17(3), 223-248.
82. Oliveira, M., Curado, C., & de Garcia, P. S. (2021). Knowledge hiding and knowledge hoarding: a systematic literature review. *Knowledge and Process Management*, 28(3), 277-294.
83. Peng, H. (2013), "Why and when do people hide knowledge?", *Journal of Knowledge Management*, Vol. 17 No. 3, pp. 398-415.

84. Pereira, V., & Mohiya, M. (2021). Share or hide? Investigating positive and negative employee intentions and organizational support in the context of knowledge sharing and hiding. *Journal of Business Research*, 129, 368-381.
85. Podsakoff, N. P., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879-903.
86. Pradhan, S. and Jena, L.K. (2016), "The moderating role of neutralizers on the relationship between abusive supervision and intention to quit: a proposed model", *Journal of Human Values*, Vol. 22 No. 3, pp. 238-248.
87. Pradhan, S., Srivastava, A., & Mishra, D. K. (2019). Abusive supervision and knowledge hiding: the mediating role of psychological contract violation and supervisor directed aggression. *Journal of Knowledge Management*.
88. Rani, S. (2019). Determinants of professional commitment: A Study. *International Journal of Engineering Research and General Science*, 7(4), 23-27.
89. Riaz, S., Xu, Y. and Hussain, S. (2019) 'Workplace ostracism and knowledge hiding: the mediating role of job tension', *Sustainability*, Vol. 11, No. 20, p.5547.
90. Rumangkit, S. (2020). Mediator Analysis of Perceived Organizational Support: Role of Spiritual Leadership on Affective Commitment. *JDM (Jurnal Dinamika Manajemen)*, 11(1), 48-55.
91. Salehzadeh, R., Pool, J.K., Lashaki, J.K., Dolati, H., Jamkhaneh, H.B., 2015. Studying the effect of spiritual leadership on organizational performance: an empirical study in hotel industry. *Int. J. Cult. Tour. Hosp. Res.* 9 (3), 346–359.
92. Shohoodi, M., Gholami, Z., Alizadeh, L., & Farajolahi, R. (2013). Mediating the role of spiritual leadership on relationship between exercise self-efficacy and professional commitment among physical education teachers. *Educational and Scholastic studies*, 2(2), 58-79
93. Sikula, J. and Sikula, A. (2005), "Spirituality and service learning", *New Directions for Teaching and Learning*, Vol. 2005 No. 104, pp. 75-82
94. Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: new procedures and recommendations. *Psychological methods*, 7(4), 422.
95. Teng, C.-I., Shyu, Y.-I. L., & Chang, H.-Y. (2007). Moderating effects of professional commitment on hospital nurses in Taiwan. *Journal of Professional Nursing*, 23(1), 47–54.
96. Ulrike, C., Beatriz, B., Jurgen, B., & Friedrich, H. W. (2005). Social dilemma in knowledge communication via shared databases. *Barriers and Biases in Computer-Mediated Knowledge Communication*, 5, 143–167.
97. Wang,x. and Armstrong.a.(2004)," an empirical study of pm professionals commitment to their profession and employing organization" , *international journal of project management*, pp.377-386
98. Wang, M., Guo, T., Ni, Y., Shang, S., & Tang, Z. (2019). The effect of spiritual leadership on employee effectiveness: An intrinsic motivation perspective. *Frontiers in psychology*, 9, 2627.
99. Wittenbaum, G.M., Hollingshead, A.B. and Botero, I.C. (2004), "From cooperative to motivated
100. information sharing in groups: moving beyond the hidden profile paradigm", *Communication*
101. *Monographs*, Vol. 71 No. 3, pp. 286-310.
102. Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, 14(3), 361–384.
103. Xia, Q., Yan, S., Zhang, Y., & Chen, B. (2019). The curvilinear relationship between knowledge leadership and knowledge hiding: The moderating role of psychological ownership. *Leadership & Organization Development Journal*.
104. Zhao, H., Liu, W., Li, J. and Yu, X. (2019), "Leader-member exchange, organizational identification, and knowledge hiding: the moderating role of relative leader-member exchange", *Journal of Organizational Behavior*, available at: <https://doi.org/10.1002/job.2359>