The Importance of Accountability for Knowledge Sharing: The Role of Knowledge-oriented Leadership

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ABSTRACT

This study investigates the interaction of artifacts of accountability, perceived accountability, and knowledge sharing. We further examine the moderation of knowledge-oriented leadership in the relationship between perceived accountability and knowledge sharing. Data were collected from 345 sales employees from pharmaceutical organizations in Pakistan, and we used Smart PLS-SEM to test the model and the proposed hypotheses. The results suggest that identifiability, expectation evaluation, awareness of monitoring, and social presence awareness are positively related to perceived accountability, which leads to knowledge sharing. However, the results do not support the positive moderation of knowledge-oriented leadership in the relationship between perceived accountability and knowledge sharing; in fact, they suggest a negative moderation. This study contributes to accountability theory and contextual leadership theory by examining the interaction of contextual leadership and accountability in the context of knowledge sharing as a desired outcome. We argue that contextual leadership vague the existence of perceived accountability, and this is an important theoretical contribution that will help and guide scholars to conduct future research in order to take the knowledge level to an upper level. Furthermore, it is also useful for the organizational manager that how they can encourage knowledge sharing among employees using the information systems and the accountability concepts.

Knowledge is an important prerequisite for organizational innovation, performance (Khan & Vorley, 2017), and intellectual capital (Barrutia & Echebarria, 2021). Knowledge management depends on a number of organizational and individual employee factors (Yang et al., 2018),

and knowledge hoarding is a persistent challenge for organizations (Charband & Navimipour, 2018; Chatterjee et al., 2021). To address the challenges related to knowledge sharing, organizations must have effective systems and mechanisms to promote knowledge sharing among employees (Soto-Acosta et al., 2017). Some employees might fear that sharing knowledge will reduce their chances for promotion, as they consider other employees to be internal competitors. Such employees hold the knowledge to gain a competitive advantage in organizations, whereas organizations need employee knowledge sharing to increase their business value and maintain a competitive advantage and strategic position within the industry (Shamim et al., 2019; Shamim et al., 2016; Shariq et al., 2019).

One potential solution lies in accountability theory. Accountability is considered one of the basic elements in organizations. Accountability refers to "the perceived need to justify or defend a decision or action to some audience(s) which has potential reward and sanction power, and where such rewards and sanctions are perceived as contingent on accountability conditions" (Frink & Klimoski, 1998). Theoretically and empirically, it is well established that employees respond to accountability in a way that looks easier to defend themselves and most likely results in favorable and desired outcomes (Wang et al., 2014). Accountability comprises four building blocks: identifiability, social presence awareness, evaluation, and monitoring awareness. The current study suggests that accountability mechanisms can stimulate perceived accountability for knowledge-sharing among employees, leading to knowledge-sharing behavior. The existing literature on promoting knowledge sharing through perceived accountability is scant. Riege (2005) identified some individual and organizational barriers to knowledge sharing. These barriers provide the basis for justifying the study of the accountability concept in a knowledge-sharing context. Employees take ownership of knowledge and avoid sharing it due to a fear of not receiving recognition and accreditation from managers and a lack of trust in others, who might misuse their knowledge or take unjustified credit for it (Bock et al., 2005). It is consistent with the accountability theory that the identifiability of employee knowledge sharing is crucial to encouraging employees to share knowledge (Riege, 2005). Riege (2005) highlighted insufficient evaluation and feedback as barriers to knowledge sharing. Indeed, evaluation is an important dimension of accountability, and there is a consistent need to encourage employees' knowledge sharing by adopting policies and practices supporting it (Heisig et al., 2016; Shamim et al., 2016; Shariq et al., 2019). All these arguments highlight the importance of accountability for knowledge sharing in a way that each individual building block of accountability is link up with the knowledge sharing challenges. For example, because of identifiability employee will not feel reluctant in sharing knowledge because employee would be aware that no other colleagues would be rewarded for that specific knowledge sharing as the identifiability factor link that shared knowledge with the specific employee who shares that knowledge (Boles et al., 2000). Social presence awareness is linked with employee recognition that other users are available in the system (Vance et al., 2015), and due to this awareness, employees will share their best knowledge to get monitored and evaluated on the basis of shared knowledge (Hochwarter et al., 2007).

The significance of accountability for knowledge sharing is well discussed above. The current study contributes to the body of knowledge by extending the accountability literature in the knowledge management domain by conducting a quantitative study. Braun and Avital (2006) investigated the role of accountability for knowledge sharing qualitatively. To conduct

an empirical quantitative study, it is important to increase the generalizability of results. Secondly, Wang et al. (2014) suggested investigating the relationship between accountability inducing practices and knowledge sharing.

Recently de Bem Machado et al. (2022) identified some factors including innovation ecosystem, frontier technology decision-making, and industry 4.0, that link knowledge management and digital technologies, claiming that their results would be beneficial for future research when exploring accountability dimensions to support knowledge management transparency. Le Anh et al. (2021) also argued that accountability plays an important role in financial information systems to serve the public interest. The current study follows these recent proposals and responds to the call for specialized research highlighted by de Bem Machado et al. (2022) that knowledge management tools may improve organizational learning, accountability framework, and knowledge sharing to examine the accountability concept in the knowledge management domain.

We argue that contextual leadership can strengthen the influence of perceived accountability for knowledge sharing on desired outcomes. In the context of this study, contextual leadership refers to knowledge-oriented leadership. In this way, this study contributes to accountability theory by examining the important role of contextual leadership in achieving desired outcomes through accountability mechanisms. Accountability mechanisms can be perceived as organizational support by employees who are already sharing their knowledge actively. Homberg et al. (2019) discussed the combined effect of perceived organizational support and leadership. Accountability theory is most commonly applied in accounting and finance research (Le Anh et al., 2021), while less attention has been given to its implications for management research. This study fills this gap.

Theoretical Background and Hypothesis Development
Accountability Theory and Accountability for Knowledge Sharing

Accountability is recognized as one of the fundamental ways in which organizations can achieve desired employee outcomes (Frink et al., 2008; Frink & Klimoski, 1998; Wang et al., 2014). Vance et al. (2013) reported that accountability is a key element in governing an organization. It refers to the perception of justifying or defending an action or decision to an authority that has the power to reward or sanction the behavior (Frink & Klimoski, 1998; Wang et al., 2014). Identifiability, social presence awareness, evaluation, and awareness of monitoring are the building blocks of perceived accountability for knowledge sharing (Lerner & Tetlock, 1999; Vance et al., 2013).

The current study discusses accountability in the context of knowledge sharing and postulates that perceived accountability for knowledge sharing encourages employees to share more knowledge. Therefore, the basic assumption supported by accountability theory is that higher perceived accountability leads to higher knowledge sharing, and thus accountability results in positive outcomes (Wang et al., 2014).

Here, identifiability means that the shared knowledge will be linked to a specific employee (Boles et al., 2000; Williams et al., 1981). The realization of employees that their output will undergo an evaluation process based on a set of rules is referred to as evaluation expectation (Boles et al., 2000; Lerner & Tetlock, 1999). Awareness of monitoring refers to the cognitive understanding of employees that their outputs are being monitored. Social presence awareness

refers to employees' recognition that other users are also available in the knowledge management system (KMS) (Vance et al., 2015).

Employees who perceive themselves as accountable are more likely to share their input (knowledge sharing) through organizational knowledge management systems because they are aware of their identifiability. Monitoring is considered the basis of evaluation, and evaluation expectation fosters the desired behavior because it generates apprehension and causes employees to modify their outputs for the sake of the evaluator (Geen, 1991; Hochwarter et al., 2007; Lerner & Tetlock, 1999).

Employee expectations regarding the presence of evaluators and other users in knowledge management systems will push them to share the maximum amount of knowledge due to their perception of being accountable for knowledge sharing. Employee perceptions regarding the social presence of evaluators or monitors in the system will build a sense of accountability in their subconscious mind. This recognition that their outputs will undergo monitoring and evaluation by other users will elicit socially desirable behavior, in this case, knowledge sharing, due to perceived accountability for knowledge sharing.

Contextual leadership theory

The concept of contextual leadership is rooted in Fiedler's (1978) contingency model. In response to the general failure to identify universal traits and behaviors for effective leadership, Fiedler (1978) argued that leadership does not occur in a vacuum, and to obtain better performance, the leader's traits should match the situational factors. Following decades of silence on the topic of contextual leadership, Johns (2006) proposed a categorical framework of contextual leadership. Johns (2006) conceptualized two different levels: the omnibus context and the discrete context. The omnibus context includes a broad consideration of contextual stimuli and offers essential information regarding the elements of a given context (e.g., national culture, institutional forces, type of organization, demographic differences, economic conditions, changes). Meanwhile, the discrete context refers to "specific situational variables that influence behavior directly or moderate relationships between variables" (Johns, 2006, p. 393). It involves a narrower consideration of specific contextual influences and includes the task, social, and physical contexts as its salient dimensions. Discrete contexts could be considered as being nested within omnibus contexts. In parallel, discrete contextual factors are expected to mediate the effects of omnibus contextual factors, or both discrete and omnibus contextual factors will interact to predict the outcome variable of interest (Johns, 2006).

In the current study context, the desired outcome is knowledge sharing, and the contextual leadership is knowledge-oriented. We argue that perceived accountability for knowledge sharing can trigger employees' intention to share knowledge, and knowledge-oriented leadership can strengthen this relationship. Existing studies have demonstrated the positive influence of knowledge-oriented leadership on knowledge sharing in the context of project-based small and medium-sized firms (Latif et al., 2020; Zia, 2020). Shariq et al. (2019) also explored the positive relationship between knowledge-oriented leadership and knowledge sharing in pharmaceutical firms.

Contextual leadership theory suggests that leadership behaviors or styles emerge from the context in which the leader is operating to achieve a desired outcome (Oc, 2018). In the context of this study, the desired outcome is knowledge sharing through perceived accountability for

knowledge sharing, and knowledge-oriented leadership is a compatible contextual leadership style. Knowledge-oriented leaders will also draw on the benefits of knowledge exploration and exploitation.

Perceived Accountability for Knowledge Sharing

Perceived accountability is defined as "an implicit or explicit expectation that one's decisions or actions will be subject to evaluation by some salient audience(s) with the belief that there exists the potential for one to receive either rewards or sanctions based on this expected evaluation" (Hall et al., 2003, pp. 29-63). Perceived accountability is an important factor for predicting employee behavior or decision-making (Erdogan et al., 2004). Accountability plays a significant role in guiding an individual's actions and decision-making, whether the implicit or explicit expectation of future rewards or recognition can be obtained upon achieving a goal (Erdogan et al., 2004). The core aspect of accountability lies in an individual's perception that their decision-making should align with or surpass the expectations or standards set by the organization or others, even though being qualified does not necessarily ensure practical rewards or recognition (Frink & Klimoski, 2004). Later on (Lanivich et al., 2010) claimed that perceived accountability emerges when individuals anticipate evaluation from those they believe have the authority to allocate valuable resources. Several research studies have examined the connection between the perception of accountability and the act of sharing knowledge (Foss et al., 2010). Agyemang et al. (2012) found that knowledge sharing emerges when employees perceive accountability in organizations. Research on the knowledge-sharing domain should shift towards the micro level (Foss et al., 2010); by doing this, organizations can promote knowledge-sharing through perceived accountability (Noor et al., 2017).

Knowledge Sharing

Polanyi (1966) categorizes knowledge into two different dimensions by claiming that "there is no wholly explicit knowledge". Codifiable, formally, and easily transferable knowledge is considered explicit (Nonaka, 1994). Cognitive tacit knowledge refers to beliefs, values, and points of view that provide views that allow an individual to experience the world in new ways and construct their own universe (Nonaka, 1994). Shared experience is the fundamental source of knowledge sharing; without a shared experience, one cannot understand the other person's thinking process (Shariq et al., 2019). Understanding a thinking process is important because 42% of the knowledge resides in the human brain (Singh, 2008). Recent studies like de Bem Machado et al. (2022) have interlinked knowledge steam and digital technology that includes information systems in a way that these phenomena now affect each other.

Knowledge Oriented Leadership

A leader is one who has subordinates at any level of an organization (Viitala, 2004). Leadership possesses several qualities including communication and motivation (Ribiere & Sitar, 2003). When the ultimate objective or goal of the organization is knowledge-related, the organization must be led through a knowledge lens for knowledge exploitation and knowledge exploration (Ribiere & Sitar, 2003). Knowledge lens denotes a knowledge-oriented leader. The idea of knowledge-oriented leadership was first coined by Skyrme (2000) through a book named Developing Knowledge Strategy. Later, Donate and Guadamillas (2011) conducted an

empirical study with knowledge-oriented Phenomena of knowledge-oriented leadership highlighted after a study conducted by Donate and de Pablo (2015). Donate and de Pablo (2015) suggested that in order to promote knowledge-sharing, leaders should possess divergent behavior. They conceptualized the construct with a six-item scale, of which five items were related to transformational leadership, and one was related to transactional leadership. Later, Shamim et al. (2017) extended the scale by incorporating other characteristics including consultation, support, and recognition. A similar scale was utilized by Shariq et al. (2019) in a study in which they discussed knowledge-oriented leaders in relation to knowledge sharing. Recently, Zia (2020) also studied knowledge-oriented leadership in relation to knowledge management practices with the extended scale version (Chaithanapat et al., 2022) conducted a study discussing knowledge-oriented leadership in relationship with customer knowledge, innovation capabilities, and firm performance, the study also uses Donate and de Pablo (2015) scale for knowledge-oriented leadership. Most recently, Donate et al. (2022) conducted a study discussing knowledge-oriented leadership concerning knowledge hiding and innovation capabilities. They use a six-item scale similar to Donate and de Pablo (2015).

Identifiability and Perceived Accountability for Knowledge Sharing

Accountability is rarely discussed in the knowledge management literature. However, when the desired outcome is knowledge sharing, identifiability, evaluation, expectations, awareness of monitoring, and social presence awareness play a crucial role in ensuring perceived accountability for knowledge sharing. Recently, Vance et al. (2013) presented a framework of accountability related to policy violations in which identifiability plays a vital role in developing accountability. This reflects the importance of identifiability for creating perceived accountability for knowledge sharing and thereby achieving desired outcomes. Consistent with Vance et al. (2013), the current study examines accountability theory in the knowledge management domain.

As discussed above, identifiability is an employee's belief that shared knowledge will be linked to the individual who shared that knowledge (Boles et al., 2000; Williams et al., 1981). This linkage aspect of "indentifiability" will help to reduce negative behaviors affecting knowledge sharing (Karau & Williams, 1993; Williams et al., 1981). Therefore, accountability is necessarily facilitated by identifiability because an employee's output or shared knowledge can be traced back to the specific employee who shared that knowledge, for which the employee may be evaluated (Lerner & Tetlock, 1999).

Accountability perception compels employees to share knowledge through knowledge management systems so that it will be identifiable to specific employees for evaluation, thus improving the effectiveness and efficiency of knowledge management systems in an organization. The concept of identifiability is also helpful for avoiding social loafing and flaming within group work because individuals in a group know that each output of each group member will be linked to the specific employee who actually produces that output. Thus, the identifiability of each group member helps to reduce social loafing and achieve the desired outcome (Karau & Williams, 1993; Reicher & Levine, 1994), which is knowledge sharing in this context. Based on these arguments, the following hypothesis is presented:

H1: Identifiability has a significant positive impact on perceived accountability for knowledge sharing.

Evaluation Expectations and Perceived Accountability for Knowledge Sharing

Employees' belief in evaluation based on specific criteria by authorities with decision-making power increases socially desirable behavior (Hochwarter et al., 2007; Lerner & Tetlock, 1999). Evaluation apprehension is useful for generating the perception of accountability to support knowledge sharing (Vance et al., 2015). When employees expect evaluation, their awareness of the differences between their actual and normative standard behavior may increase greatly (Sedikides et al., 2002; Vance et al., 2015). According to accountability theory (Lerner & Tetlock, 1999), we suggest that it is not only the fact that a transaction is being logged in the system that has an impact; the employee's understanding that a performance evaluation will occur based on user data is also crucial. Such virtual interaction generates apprehension related to evaluation that encourages employees to utilize the implemented system and ensures accountability. The current study proposes that evaluation expectations could be enhanced by incorporating evidence of evaluation, such as visual audit trails indicating that an employee's system behavior has audited. The cognition intensification generated by evaluation expectation influences employees' perception of accountability for knowledge sharing. Based on these arguments, the following hypothesis is presented:

H2: Evaluation expectation has a significant positive impact on perceived accountability for knowledge sharing.

Awareness of Monitoring and Perceived Accountability for Knowledge Sharing

Employees with an evaluation expectation are aware that their output will be observed by another party. This is why evaluation and monitoring are typically studied together. Evaluation expectation and awareness of monitoring complement each other (Vance et al., 2013, 2015). Together, evaluation and monitoring cultivate systematic processing, which is necessary to increase employees' accountability perception for knowledge sharing. The evaluator can evaluate the employees after observing or monitoring performance-related data and information from organizational parameters, such as knowledge management or other information systems (Rajnoha et al., 2016). Researchers have also studied monitoring awareness in a cyber security context (Boss et al., 2009; Herath & Rao, 2009). This study proposes that such monitoring should be performed under normal circumstances as well and incorporated into the system (KMS) so that employees will be aware that every transaction they perform in that system is traceable and will be monitored because of monitoring. Accordingly, the following hypothesis is proposed:

H3: Awareness of monitoring has a significant positive impact on perceived accountability for knowledge sharing.

Social Presence Awareness and Perceived Accountability for Knowledge Sharing

Social presence awareness refers to the presence of others in the social setting, with potential awareness of what is happening (Walther, 1992). For example, in the context of knowledge sharing, this includes the presence of employees who are able to see others' knowledge sharing in a knowledge management system. Behaviors that are socially undesirable invite disapproval due to the social presence expectation of others (McLean et al., 1991). Meta-analyses by Bond and Titus (1983) and Guerin (1986) on social presence awareness found that employees exhibit more similar behaviors when they expect the social presence of others, even when the others are not available immediately and cannot observe (Vance et al., 2015). The potential for interaction always exists in the presence of other employees and seniors, so the employee needs to be particularly vigilant in responding to any potential change in the system. Being called upon by senior authorities to justify one's action is possible, which represents accountability. Thus, an employee needs to be prepared at any time for this sort of accountability, even if the authorities are not present at any given time (Lerner & Tetlock, 1999; Zajonc, 1980). Precisely, social presence awareness increases perceived accountability for knowledge sharing, which ultimately increases the socially desirable behavior (here, knowledge sharing). Social presence awareness can also be increased by the actions of other users as well through instant messaging and calls. This will evoke the sense of others' social presence in the system, which will increase the perception of accountability in the subconscious minds of employees. Based on these arguments, the following hypothesis is presented:

H4: Social presence awareness has a significant positive impact on perceived accountability for knowledge sharing.

Knowledge Sharing, Perceived Accountability for Knowledge Sharing, and Knowledge-Oriented Leadership

Accountability can provide a governance system for knowledge sharing in organizations (Foss et al., 2010). Free-rider employees yield desirable outcomes like knowledge sharing in the absence of a mechanism that holds them accountable for knowledge sharing. Therefore, the role of accountability is crucial for promoting knowledge sharing (Wang et al., 2014). However, few studies have discussed the relationship between perceived accountability and knowledge sharing (Foss et al., 2010). Agyemang et al. (2012) found that knowledge sharing emerges when employees perceive accountability in organizations. Accountability theory also suggests that accountability-inducing policies enhance employees' perception that they are expected to behave in a specific way (Frink & Klimoski, 1998, 2004) and that they should share knowledge. Foss et al. (2010) suggested that future research on knowledge sharing should shift from the macro to the micro level. They claimed this would support the concept that organizations can influence knowledge sharing through perceived accountability (Noor et al., 2017). Based on these arguments and logical beliefs, the following hypothesis is presented:

H5: Perceived accountability for knowledge sharing has a significant positive impact on knowledge sharing.

The ability to achieve desired outcomes through accountability-inducing practice depends on the leader–subordinate relationship (Carnevale, 1985; Frink & Klimoski, 2004). Leaders support a climate in which the knowledge-sharing behavior of employees can flourish (Shariq et al., 2019). This idea is consistent with contextual leadership theory, which suggests that leadership styles depend on the context and that a contextually compatible leadership style triggers desired outcomes (Singh, 2008). Knowledge-oriented leadership is a relevant leadership style to support knowledge sharing among employees (Mohsenabad & Azadehdel, 2016; Shariq et al., 2019). Knowledge-oriented leaders use multiple approaches to influence knowledge sharing among employees (Donate & de Pablo, 2015; Shamim et al., 2017; Shariq et al., 2019; Zia, 2020). Knowledge-oriented leadership includes characteristics of transformational leadership as well as transactional leadership, with a focus on communication and motivational skills, which creates a suitable climate and environment for knowledge flows (Donate et al., 2022).

A recent study discussed the moderating effect of leadership (Engelen et al., 2015; Lin et al., 2018; Vasilaki et al., 2016). However, the moderating role of knowledge-oriented leadership has not been discussed in the existing literature. The current study proposes that knowledge-oriented leadership positively moderates the relationship between knowledge sharing and perceived accountability for knowledge sharing. Perceived accountability for knowledge-sharing influences knowledge-sharing behavior among employees, and knowledge-oriented leadership creates synergy among employees, thus promoting knowledge-sharing. Therefore, the current study suggests that in the presence of a knowledge-oriented leader, the impact of perceived accountability for knowledge sharing on knowledge sharing will be higher. Based on these arguments, the current study proposes the following hypothesis:

H6: Knowledge-oriented leadership positively moderates the relationship between perceived accountability for knowledge sharing and knowledge sharing.

A conceptual model that depicts all the hypothesis discussed above is presented in Figure 1.

Figure 1

Conceptual Model
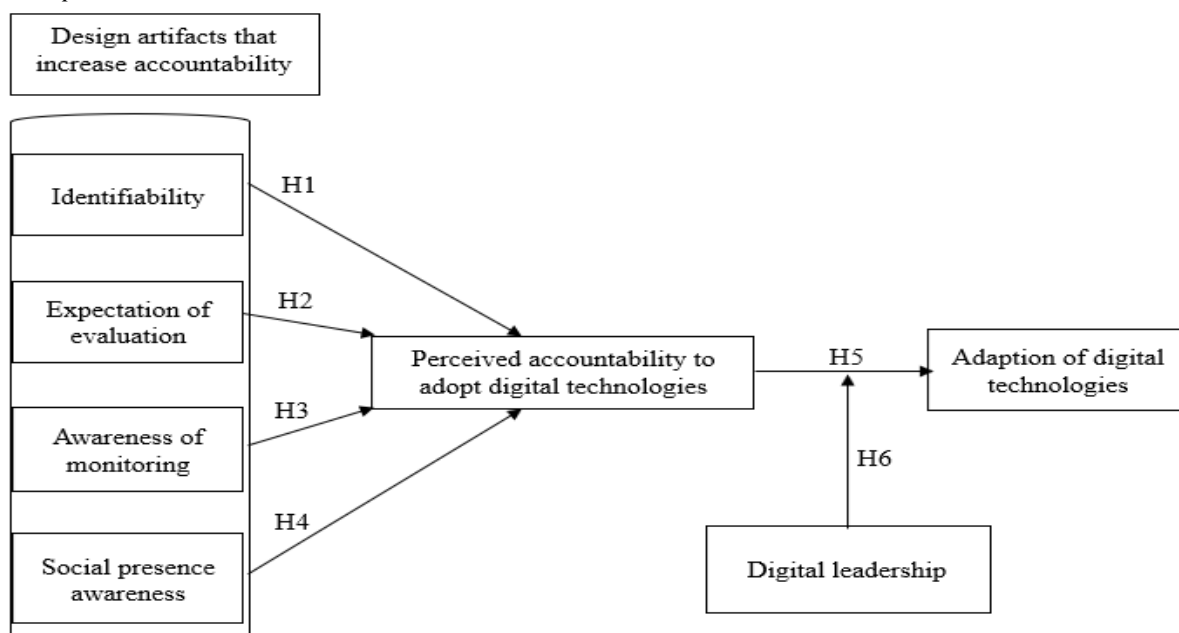
Method

Sample and Data Collection

The authors collected data from individual employees working in pharmaceutical organizations in Pakistan. Employees from pharmaceutical organizations were selected because Pakistan is now trying to transform itself into a knowledge-based economy and thus represents a context of a developing economy and a high-power distance where accountability has a huge impact on employee outcomes. The pharmaceutical industry is knowledge-based, as it has more knowledge workers compared to other sectors (Shariq et al., 2019). Data were collected through a structured questionnaire that was converted into an online survey using Google Forms. The authors contacted organizations through email, telephone calls, and by visiting their regional offices in the nearest locations. The contact person in each organization was asked to share the link for our online survey with employees in their organization. Furthermore, the authors requested the respondent to refer to some other organizations for data collection, and the authors contacted those organizations with the reference of their previous respondent. In this way, we used the snowball sampling technique to share our online survey link with more than 850 employees working in sales departments of pharmaceutical firms. We received 382 responses, of which 345 were usable for the data analysis. A scientific sample size calculation was also used to determine the minimum sample size for the study based on the number of variables, items, and the required probability level (Soper, 2021). The minimum required sample size was 90, but it is always better to have more than 200 sample sizes (Shariq et al., 2019). The whole data collection process took 10 months. A brief descriptive analysis of data is reflected in Table 1.

Table 1

Sample Characteristics

Managerial Level	Frequency	%	Education	Frequency	%
Frontline employee	145	42	Secondary school	31	9
Frontline manager	107	31	Undergraduate	197	57
Middle manager	76	22	Postgraduate	117	34
Top Manager	17	5			
Age			Age		
<30	100	29	<5	72	21
30–35	83	24	6–8	97	28
36–40	72	21	9–11	76	22
41–45	59	17	12–14	55	16
>45	31	9	>15	45	13

Common Method Bias

We took several steps to mitigate the effect of common method bias. For example, the data were collected in two waves. We ensured the anonymity of respondents. Further, we randomized the items in the questionnaire. The statistical check was also satisfactory; that is, the Harman single-factor test indicated that a single factor explained only 36.07% of the variance, which was not significant to contaminate the results. This approach is consistent with the existing literature (Yang et al., 2017).

Instruments

The questionnaire included a combination of adapted and self-developed items. A seven-point Likert scale was used to measure the constructs. The scales for measuring identifiability, evaluation, expectations, awareness of monitoring, and perceived accountability were adapted

from Han and Perry (2020). Identifiability and evaluation expectation were measured using a five-item scale, and a four-item scale was used to measure the monitoring evaluation. Knowledge-oriented leadership was measured by adapting nine items from Zia (2020), who also studied the role of knowledge-oriented leadership in knowledge sharing. Three items were self-developed by the authors to measure social presence, and the exploratory factor analysis is provided in the analysis results below. Perceived accountability was measured by adapting four items from Han and Perry (2020). Finally, knowledge sharing was measured using four items from Shamim et al. (2017).

Results

Exploratory Factor Analysis

The exploratory factor analysis was performed using SPSS software for the self-developed items related to social presence in order to verify that they were explaining their constructs. Two assumptions need to be fulfilled: the KMO value should be greater than 6.0, and Bartlett's test should be significant, meaning it should have a value equal to or less than .05. Both assumptions were fulfilled in this study, as depicted in Table 2.

Table 2

Kaiser–Meyer–Olkin and Bartlett's Test

KMO Measure of Sampling Adequacy	.69
Bartlett's Test of Sphericity –	
Approx. Chi-Square	336.78
Df	3.00
Sig.	0.00

Communalities represent the extraction value, that is, how an individual item explains the construct individually. Communality values should be equal or greater than .40. In the current study, the three self-developed items extraction values were greater than .40 (Table 3). Table 4 shows the total variance explained, showing that all three items (cumulatively) fully explained the constructs. The first item explained 71.7% of the variation in its construct.

Table 3

Communalities

Items	Initial	Extraction
SP1	1	.67
SP2	1	.77
SP3	1	.69

Table 4

Total Variance Explained

Initial Eigenvalues				Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.15	71.79	71.79	2.15	71.79	71.79
2	0.50	16.69	88.48			
3	0.34	11.51	100			

Reliability and Validity

The reliability of the constructs was measured using Cronbach's alpha. Table 5 shows that Cronbach's alpha values for each construct were greater than the minimum requirement of .70, reflecting internal consistency (George, 2011). To measure convergent validity, we followed the approach of Fornell and Larcker (1981), which suggests that the factor loading of the constructs should be higher than .65 and that the Average Variance Extracted (AVE) and the Composite Reliability (CR) of constructs should be greater than .50. All of these requirements

were fulfilled. The factor loadings for all constructs were greater than .65, and the AVE and CR values of all constructs were also greater than the minimum required values. Thus, the results indicated that convergent validity was established.

Table 5

Convergent Validity

Variable	Items	FL	AVE	CR
Identifiability	1. When I share knowledge, others notice it in my organization.	.66	.53	.85
	2. If I hide or share knowledge, I will be identified.	.72		
	3. There are mechanisms in my organization to identify if I share my knowledge with others.	.77		
	4. The exact contribution I make in terms of knowledge sharing in my organization is recognized.	.70		
	5. We know very who among our colleagues shares knowledge and who does not.	.78		
Awareness of monitoring	1. I often feel that my supervisor monitors my shared knowledge.	.78	.69	.90
	2. My supervisor can tell whether I am doing well in terms of knowledge sharing.	.84		
	3. My lack of knowledge sharing can be easily spotted.	.85		
	4. My organization is interested in knowing my knowledge-sharing performance.	.85		
Evaluation expectation	1. The outcomes of my shared knowledge are evaluated rigorously.	.79	.57	.87
	2. My knowledge-sharing efforts are rigorously evaluated.	.73		
	3. I expect to receive frequent feedback from my supervisor on my knowledge-sharing performance.	.75		
	4. My knowledge-sharing performance is compared to the knowledge-sharing performance of others in the organization.	.81		
	5. The evaluation of my knowledge sharing is based on a predetermined set of expectations.	.68		
Social presence awareness	1. When I share knowledge, other colleagues are usually present.	.79	.71	.88
	2. I feel more comfortable when I know the colleague asking for knowledge.	.85		
	3. My colleagues usually have an idea of my knowledge sharing.	.89		
Perceived accountability for knowledge sharing	1. I always have to answer for my knowledge-sharing performance.	.87	.66	.89
	2. I could not easily get away with not sharing knowledge.	.85		
	3. I am always required to follow strict organizational policies for knowledge sharing.	.81		
	4. I am not allowed to make excuses for the lack of knowledge sharing in my organization.	.72		
Knowledge oriented leadership	1. I encourage employees to talk about new knowledge.	.78	.57	.92
	2. I devote a great deal of time to enhance employee knowledge.	.75		
	3. I believe subordinates' knowledge is as important as the task at hand.	.81		
	4. I frequently share knowledge and experience with juniors.	.80		
	5. I allow my subordinates to use their knowledge to alter the decisions.	.82		
	6. I always provide accurate information and knowledge wherever required by employees to perform their tasks.	.72		
	7. I give appreciation to employees for sharing their knowledge.	.70		
	8. I stimulate open and transparent communication.	.72		
	9. I arrange informal and formal meetings to share thoughts.	.68		
Knowledge sharing	1. When I need certain knowledge, I ask my colleagues about it.	.81	.53	.82
	2. When one of my colleagues is good at something, I ask him or her to teach me how to do it.	.71		
	3. When I have learned something new, I tell my colleagues about it.	.72		
	4. I share information I have with my colleagues.	.67		

To establish discriminant validity, the squared root value of the AVE of each construct should be greater than the correlation among constructs (Fornell & Larcker, 1981). Table 5 shows that the correlation of the constructs was less than the squared root value of AVE (the squared root AVE values are indicated by bold font). Table 6 presents the mean and standard deviations, which indicate discriminant validity. The chi-square was 5211.02, the R-square of the dependent variable of perceived accountability for knowledge sharing was .58m, and the R-square for knowledge sharing was .40.

Table 6

Discriminant Validity

	Factors	1	2	3	4	5	6	7
1	Evaluation expectation	**.75**						
2	Identifiability	.58	**.72**					
3	KOL	.70	.53	**.75**				
4	Knowledge sharing	.45	.40	.60	**.72**			
5	Awareness of monitoring	.60	.71	.54	.55	**.83**		
6	Perceived accountability for knowledge sharing	.68	.55	.51	.45	.66	**.81**	
7	Social presence awareness	.56	.26	.65	.61	.50	.55	**.84**

Path Analysis and Hypothesis Testing

The partial least square method (PLS) was used for structural equation modeling (SEM) and testing of the hypotheses using the SmartPLS software package. According to Henseler et al. (2014), a) PLS is an SEM method that is designed to estimate composite factor models, b) PLS construct scores are more reliable than sum scores, c) it has sufficient information to estimate different weights, and d) it can help to detect a wide spectrum of measurement model misspecifications. Moreover, it considers the measurement model and the theoretical structural model simultaneously (Chin et al., 2003).

The results in Table 7 indicate that perceived accountability for knowledge sharing was positively related to identifiability (β = .09, $p < .05$), awareness of monitoring (β = .28, $p < .001$), evaluation expectation (β = .35, $p < .001$), and social presence awareness (β = .19, $p < .001$). These findings support H1, H2, H3, and H4. In addition, we tested the association of knowledge sharing and perceived accountability for knowledge sharing. The relationship between knowledge sharing and perceived accountability for knowledge sharing was significant (β = .09, $p > .01$). Based on this finding, H5 is accepted. However, the results do not support our assumption that knowledge-oriented leadership positively moderates the relationship of perceived accountability for knowledge sharing and knowledge sharing, and it leads to the rejection of H6. Although the moderating effect on knowledge-oriented leadership in this interaction is significant but not positive, knowledge-oriented leadership negatively moderates the relationship between knowledge sharing and perceived accountability for knowledge sharing (β = -.09, $p < .01$).

Table 7

Hypotheses Testing

Hypo thesis	Path	Direct effects β/t-value	Moderating effect β/t-value	Result
H1	Identifiability → Perceived accountability	.09/2.08*		Accepted
H2	Awareness of monitoring → Perceived accountability	.28/6.75**		Accepted
H3	Evaluation expectation → Perceived accountability	.35/7.06**		Accepted
H4	Social presence awareness → Perceived accountability	.19/3.66**		Accepted
H5	Perceived accountability → Knowledge sharing	.17/2.98**		Accepted
H6	(KOL) (Perceived accountability) → Knowledge sharing		- .09/3.08**	Rejected

Note. **$p < .01$; *$p < .05$

Discussion

This study examined the relationships of perceived accountability for knowledge sharing with identifiability evaluation, expectations, awareness of monitoring, and social presence awareness. We found positive relationships, and the results are consistent with the existing literature (Vance et al., 2015). Among the building blocks of perceived accountability, evaluation expectation was the strongest predictor of perceived accountability (β = .35). The positive relationship between perceived accountability for knowledge sharing and knowledge sharing is also consistent with the literature, validating the findings of Wang et al. (2014) and Vance et al. (2013). However, the results do not support the positive moderation of knowledge-oriented leadership. Rather, knowledge-oriented leadership negatively moderates the relationship between knowledge sharing and perceived accountability for knowledge sharing.

One potential justification of our results is that leadership is a stronger influencer than accountability of employee behavioral outcomes. Based on the results, knowledge-oriented leadership was the strongest predictor of knowledge sharing (β = .42). Therefore, in the presence of knowledge-oriented leadership, employees share knowledge mainly because of leadership influence and not because of accountability. This does not mean that perceived accountability is not related to knowledge sharing, but its influence blurs in the presence of suitable contextual leadership, that is, knowledge-oriented leadership in the given context. This leads to the interesting finding that contextual leadership is so dominant that employees act to reflect the desired behavior mainly due to leadership and pay less attention to accountability. This could be related to the future research recommendation that there is a need to investigate the effectiveness of informal management practices in facilitating knowledge sharing (Wang et al., 2014). However, these findings may be related to specific cultural aspects of corporate governance in Pakistan.

Theoretical Contribution

This study contributes to accountability theory and the theory of contextual leadership by examining the moderating role of contextual leadership in the relationship between perceived accountability and desired outcomes. We contribute to the knowledge management literature by discussing the interaction of contextual leadership and accountability in the context of knowledge sharing as a desired outcome. Based on our results, we argue that contextual leadership blurs the existence of perceived accountability, and this is an important and interesting theoretical contribution. We extend the framework of Vance et al. (2013) by discussing the design artifacts of accountability and perceived accountability in the context of knowledge sharing. Further, we incorporate the role of contextual leadership in this framework. The application of accountability theory is rarely discussed in the knowledge management literature, so this study opens a novel debate in the field of knowledge management by discussing accountability in this context.

While knowledge-oriented leadership is an emerging topic in the field of knowledge management, few studies have been conducted on this topic, and existing studies have mainly considered it as a main independent variable (Donate & de Pablo, 2015; Shamim et al., 2017; Shariq et al., 2019; Zia, 2020). This study explores the moderating role of knowledge-oriented leadership in the relationship between perceived accountability for knowledge sharing and knowledge sharing. The results show that knowledge-oriented leadership is more suitable for stimulating intellectual capital than the accountability process.

Managerial Implications

This study offers rich managerial implications. Our analysis suggests that to achieve desired employee behavioral outcomes; managers should focus on adopting suitable leadership styles rather than relying on accountability mechanisms as a main enforcement tool. This does not mean that they should ignore the accountability mechanism, as it has a positive influence on the desired outcomes. Managers should ensure the existence of design artifacts of perceived accountability, that is, identifiability, awareness of monitoring, evaluation expectations, and social presence awareness.

In the context of this study, to encourage employees to share knowledge, managers should adopt a knowledge-oriented leadership style. They can do so by encouraging employees to talk about new knowledge, devoting time to enhance employee knowledge, and frequently sharing knowledge and experience with employees. Leaders should allow employees to use their knowledge to alter their decisions and provide accurate information and knowledge whenever required by employees to perform their tasks. This would lead to more frequent knowledge sharing among employees. To ensure identifiability, managers should enforce mechanisms to note and identify who is sharing knowledge (e.g., through KMS). This kind of system should enable managers to identify employees who are not actively sharing knowledge or hiding knowledge and facilitate monitoring. Our results suggest that evaluation expectation is the strongest predictor of perceived accountability for knowledge sharing among the design artifacts of accountability. Thus, managers should evaluate employees' knowledge-sharing behavior and performance rigorously. Managers could set predetermined expectations regarding knowledge sharing. One potential solution suggested in the literature is to link it with an employee performance appraisal system (Shamim et al., 2016). Further, managers should ensure a social presence when employees share knowledge. This argument is consistent with Nonaka and Takeuchi (1995) concept of ba, which is based on the SECI model and refers to any social platform that can be used to share knowledge. In its digital form, it refers to cyber ba, which should be embedded in KMS.

Conclusion

In conclusion, this study argues that design artifacts of accountability—identifiability, awareness of monitoring, evaluation expectations, and social presence awareness—are positively associated with perceived accountability for knowledge sharing, which encourages employees to share knowledge. This study contributes to contextual leadership theory and accountability theory by testing the interaction between perceived accountability for knowledge sharing and contextual leadership (knowledge-oriented leader) in relation to achieving a desired outcome, here knowledge sharing. Contextual leadership (i.e., knowledge-oriented leadership) has the strongest influence on knowledge sharing, blurring the influence of perceived accountability on knowledge sharing. To the best of our knowledge, this is the first study that has examined the moderating role of knowledge-oriented leadership. The analysis indicates that leaders should adopt a knowledge-oriented leadership style to promote employee knowledge-sharing while also considering accountability mechanisms.

Limitations and Future Research

This study has some limitations, which represent future research opportunities. First, this study employed a cross-sectional research design, which is subject to common method bias. However, we took several steps to mitigate the effect of this bias, and the Harman single-factor test indicated that it did not have a significant effect on the results. Future research should employ a longitudinal research design for impact analysis. Second, we collected data from a single country (i.e., Pakistan), which represents a developing economy context. To improve the generalizability of the results, future research should consider other regions. Pakistan is different from many developed and Western nations in terms of socioeconomic classification, and cultural differences influence the outcomes of leadership and managerial practices

(Shamim & Abbasi, 2012), including accountability inducement practices. Future research should also examine the role of income status and job security in the relationship between accountability and its outcomes in the presence of contextual leadership.

Moreover, future research could validate the theoretical contributions of this study by testing our model in different contexts and on different topics, such as the relationship between perceived accountability for adopting digital technologies and the adoption of such technologies. Digital leadership could be used as the type of contextual leadership in that context.

Declarations
Acknowledgements
Not applicable.

Disclosure Statement
No potential conflict of interest was reported by the authors.

Ethics Approval
Not applicable.

Funding Acknowledgements

Citation to this article
Shariq, S. M., Chromjakova, F., & Ortega, M. J. R. (2023). The importance of accountability for knowledge sharing: The role of knowledge-oriented leadership. *International Journal of Organizational Leadership, 12*(4), 369-388. https://doi.org/10.33844/ijol.2023.60383

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References

Agyemang, G., O'Dwyer, B., Unerman, J., & Awumbila, M. (2012). *The nature of knowledge sharing in NGO accounting and accountability processes*. Royal Holloway University of London, London.

Barrutia, J. M., & Echebarria, C. (2021). Harnessing social interaction and intellectual capital in intergovernmental networks. *Journal of Intellectual Capital*, *23*(3), 639–665.

Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N. (2005). Behavioral intention formation in knowledge sharing: Examining the roles of extrinsic motivators, social-psychological forces, and organizational climate. *MIS quarterly*, 87–111. https://doi.org/10.2307/25148669

Boles, J., Brashear, T., Bellenger, D., & Barksdale, H. (2000). Relationship selling behaviors: antecedents and relationship with performance. *Journal of Business & Industrial Marketing*, *15*(2/3), 141–153. https://doi.org/10.1108/08858620010316840

Bond, C. F., & Titus, L. J. (1983). Social facilitation: a meta-analysis of 241 studies. *Psychological Bulletin, 94*(2), 265. https://psycnet.apa.org/doi/10.1037/0033-2909.94.2.265

Boss, S. R., Kirsch, L. J., Angermeier, I., Shingler, R. A., & Boss, R. W. (2009). If someone is watching, I'll do what I'm asked: mandatoriness, control, and information security. *European Journal of Information Systems, 18*(2), 151–164.

Braun, F., & Avital, M. (2006). The role of accountability in motivating knowledge sharing among team members in information technology projects. *AMCIS Proceedings*, 454.

Carnevale, P. J. (1985). Accountability of group representatives and intergroup relations. *Advances in Group Processes, 2*, 227–248.

Chaithanapat, P., Punnakitikashem, P., Oo, N. C. K. K., & Rakthin, S. (2022). Relationships among knowledge-oriented leadership, customer knowledge management, innovation quality and firm performance in SMEs. *Journal of Innovation Knowledge, 7*(1), 100162. https://doi.org/10.1016/j.jik.2022.100162

Charband, Y., & Navimipour, N. J. (2018). Knowledge sharing mechanisms in the education. *Kybernetes*, *47*(7), 1456–1490. https://doi.org/10.1108/K-06-2017-0227

Chatterjee, S., Chaudhuri, R., Thrassou, A., & Vrontis, D. (2021). Antecedents and consequences of knowledge hiding: The moderating role of knowledge hiders and knowledge seekers in organizations. *Journal of business research, 128*, 303–313. https://doi.org/10.1016/j.jbusres.2021.02.033

Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, *14*(2), 189–217.

de Bem Machado, A., Secinaro, S., Calandra, D., & Lanzalonga, F. (2022). Knowledge management and digital transformation for Industry 4.0: a structured literature review. *Knowledge Management Research Practice*, 1–19. https://doi.org/10.1080/14778238.2021.2015261

Donate, M. J., & de Pablo, J. D. S. (2015). The role of knowledge-oriented leadership in knowledge management practices and innovation. *Journal of Business Research, 68*(2), 360–370. https://doi.org/10.1016/j.jbusres.2014.06.022

Donate, M. J., González-Mohíno, M., Appio, F. P., & Bernhard, F. (2022). Dealing with knowledge hiding to improve innovation capabilities in the hotel industry: the unconventional role of knowledge-oriented leadership. *Journal of Business Research, 144*, 572–586. https://doi.org/10.1016/j.jbusres.2022.02.001

Donate, M. J., & Guadamillas, F. (2011). Organizational factors to support knowledge management and innovation. *Journal of knowledge management, 15*(6), 890–914. https://doi.org/10.1108/13673271111179271

Engelen, A., Gupta, V., Strenger, L., & Brettel, M. (2015). Entrepreneurial orientation, firm performance, and the moderating role of transformational leadership behaviors. *Journal of Management, 41*(4), 1069–1097. https://doi.org/10.1177/0149206312455244

Erdogan, B., Sparrowe, R. T., Liden, R. C., & Dunegan, K. J. (2004). Implications of organizational exchanges for accountability theory. *Human Resource Management Review, 14*(1), 19–45. https://doi.org/10.1016/j.hrmr.2004.02.002

Fiedler, F. E. (1978). The contingency model and the dynamics of the leadership process. In *Advances in experimental social psychology* (Vol. 11, pp. 59–112): Elsevier.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research, 18*(1), 39–50. https://doi.org/10.1177/002224378101800104

Foss, N. J., Husted, K., & Michailova, S. (2010). Governing knowledge sharing in organizations: Levels of analysis, governance mechanisms, and research directions. *Journal of Management Studies, 47*(3), 455–482. https://doi.org/10.1111/j.1467-6486.2009.00870.x

Frink, D. D., Hall, A. T., Perryman, A. A., Ranft, A. L., Hochwarter, W. A., Ferris, G. R., & Royle, M. T. (2008). Meso-level theory of accountability in organizations. In *Research in personnel and human resources management* (pp. 177-245). Emerald Group Publishing Limited.

Frink, D. D., & Klimoski, R. J. (1998). Toward a theory of accountability in organizations and human resource management. *Research in Personnel and Human Resources Management, 16,* 1–51.

Frink, D. D., & Klimoski, R. J. (2004). Advancing accountability theory and practice: Introduction to the human resource management review special edition. *Human Resource Management Review, 14*(1), 1–17. https://doi.org/10.1016/j.hrmr.2004.02.001

Geen, R. G. (1991). Social motivation. *Annual Review of Psychology, 42*(1), 377–399. https://doi.org/10.1146/annurev.ps.42.020191.002113

George, D. (2011). *SPSS for windows step by step: A simple study guide and reference, 17.0 update, 10/e*: Pearson Education India.

Guerin, B. (1986). Mere presence effects in humans: A review. *Journal of Experimental Social Psychology, 22*(1), 38–77. https://doi.org/10.1016/0022-1031(86)90040-5

Hall, A. T., Frink, D. D., Ferris, G. R., Hochwarter, W. A., Kacmar, C. J., & Bowen, M. G. (2003). Accountability in human resources management. *New Directions in human Resource Management, 29*, 63.

Han, Y., & Perry, J. L. (2020). Employee accountability: development of a multidimensional scale. *International Public Management Journal, 23*(2), 224–251. https://doi.org/10.1080/10967494.2019.1690606

Heisig, P., Suraj, O. A., Kianto, A., Kemboi, C., & Perez Arrau, G. (2016). Knowledge management and business performance: global experts' views on future research needs. *Journal of Knowledge Management, 20*(6), 1169–1198. https://doi.org/10.1108/JKM-12-2015-0521

Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., . . . Calantone, R. J. (2014). Common beliefs and reality about PLS: Comments on Rönkkö and Evermann (2013). *Organizational Research Methods, 17*(2), 182–209. https://doi.org/10.1177/1094428114526928

Herath, T., & Rao, H. R. (2009). Encouraging information security behaviors in organizations: Role of penalties, pressures and perceived effectiveness. *Decision Support Systems, 47*(2), 154–165.

Hochwarter, W. A., Ferris, G. R., Gavin, M. B., Perrewé, P. L., Hall, A. T., & Frink, D. D. (2007). Political skill as neutralizer of felt accountability—job tension effects on job performance ratings: A longitudinal investigation. *Organizational Behavior Human Decision Processes, 102*(2), 226–239. https://doi.org/10.1016/j.obhdp.2006.09.003

Homberg, F., Vogel, R., & Weiherl, J. (2019). Public service motivation and continuous organizational change: Taking charge behaviour at police services. *Public administration, 97*(1), 28–47. https://doi.org/10.1111/padm.12354

Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review, 31*(2), 386–408. https://doi.org/10.5465/amr.2006.20208687

Karau, S. J., & Williams, K. D. (1993). Social loafing: A meta-analytic review and theoretical integration. *Journal of Personality Social Psychology, 65*(4), 681. https://doi.org/10.1037/0022-3514.65.4.681

Khan, Z., & Vorley, T. (2017). Big data text analytics: an enabler of knowledge management. *Journal of Knowledge Management, 21*(1), 18–34. https://doi.org/10.1108/JKM-06-2015-0238

Lanivich, S. E., Brees, J. R., Hochwarter, W. A., & Ferris, G. R. (2010). PE Fit as moderator of the accountability–employee reactions relationships: Convergent results across two samples. *Journal of Vocational Behavior, 77*(3), 425–436. https://doi.org/10.1016/j.jvb.2010.05.004

Latif, K. F., Afzal, O., Saqib, A., Sahibzada, U. F., & Alam, W. (2020). Direct and configurational paths of knowledge-oriented leadership, entrepreneurial orientation, and knowledge management processes to project success. *Journal of Intellectual Capital, 22*(1), 149–170. https://doi.org/10.1108/JIC-09-2019-0228

Le Anh, T., Nguyen, T., & Tran, L. (2021). Relationships between innovation, its antecedents, and organisational performance: evidences from auditing service industry. *Knowledge Management Research Practice*, 1–15. https://doi.org/10.1080/14778238.2021.1967216

Lerner, J. S., & Tetlock, P. E. (1999). Accounting for the effects of accountability. *Psychological Bulletin, 125(2), 255–275.* https://doi.org/10.1037/0033-2909.125.2.255

Lin, K. J., Hsieh, Y. H., & Lian, W. S. (2018). Knowledge sharing and personality traits moderated by transformational leadership. *Human Systems Management, 37*(1), 67–80. https://doi.org/10.3233/HSM-171615

McLean, R. A., Sanders, W. L., & Stroup, W. W. (1991). A unified approach to mixed linear models. *The American Statistician, 45*(1), 54–64.

Mohsenabad, A. S., & Azadehdel, M. (2016). The impact of knowledge-oriented leadership on innovation performance of manufacturing and commercial companies of Guilan province. *International Journal of Humanities and Cultural Studies (IJHCS), 3*(1), 884–897.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization Science, 5*(1), 14–37. http://www.jstor.com/stable/2635068

Nonaka, I., & Takeuchi, H. (1995). The knowledge creation company: how Japanese companies create the dynamics of innovation. *Oxford University Press. New York, USA*, 304. https://www.jstor.org/stable/155381

Noor, N. H. M., Ah, S. H. A. B., & Idris, M. A. (2017). The effects of customer accountability and knowledge sharing on voluntary organizations'(VOs) effectiveness: a causal path model. *International Journal of Organizational Analysis. 25*(1), 146–159. https://doi.org/10.1108/IJOA-08-2015-0893

Oc, B. (2018). Contextual leadership: A systematic review of how contextual factors shape leadership and its outcomes. *The Leadership Quarterly, 29*(1), 218–235. https://doi.org/10.1016/j.leaqua.2017.12.004

Polanyi, M., & Sen, A. (1966). The tacit dimension. *Peter Smith, Gloucester, MA. Originally: Doubleday Company, Garden City, NY.*

Rajnoha, R., Štefko, R., Merková, M., & Dobrovič, J. (2016). Business intelligence as a key information and knowledge tool for strategic business performance management. *Economics Management, 19*(1). https://doi.org/10.15240/tul/001/2016-1-013

Reicher, S., & Levine, M. (1994). Deindividuation, power relations between groups and the expression of social identity: The effects of visibility to the out-group. *British Journal of Social Psychology, 33*(2), 145–163. https://doi.org/10.1111/j.2044-8309.1994.tb01015.x

Ribiere, V. M., & Sitar, A. S. (2003). Critical role of leadership in nurturing a knowledge-supporting culture. *Knowledge management research & practice, 1*(1), 39–48. https://doi.org/10.1057/palgrave.kmrp.8500004

Riege, A. (2005). Three-dozen knowledge-sharing barriers managers must consider. *Journal of Knowledge Management, 9*(3), 18–35. https://doi.org/10.1108/13673270510602746

Sedikides, C., Herbst, K. C., Hardin, D. P., & Dardis, G. J. (2002). Accountability as a deterrent to self-enhancement: The search for mechanisms. *Journal of Personality and Social Psychology, 83*(3), 592.

Shamim, S., & Abbasi, A. S. (2012). Interethnic culture orientation of business managers in Pakistan. *Middle-East Journal of Scientific Research, 12*(5), 632–642. https://doi.org/10.5829/idosi.mejsr.2012.12.5.1724

Shamim, S., Cang, S., & Yu, H. (2017). Impact of knowledge oriented leadership on knowledge management behaviour through employee work attitudes. *The International Journal of Human Resource Management*, 1–31. https://doi.org/10.1080/09585192.2017.1323772

Shamim, S., Cang, S., & Yu, H. (2019). Impact of knowledge oriented leadership on knowledge management behaviour through employee work attitudes. *The International Journal of Human Resource Management, 30*(16), 2387–2417. https://doi.org/10.1080/09585192.2017.1323772

Shamim, S., Gang, S., & Yu, H. (2016). *Influencers of information system usage among employees for knowledge creation. A future research agenda* [Paper presentation]. The 2016 10th International Conference on Software, Knowledge, Information Management & Applications (SKIMA).

Shariq, S. M., Mukhtar, U., & Anwar, S. (2019). Mediating and moderating impact of goal orientation and emotional intelligence on the relationship of knowledge oriented leadership and knowledge sharing. *Journal of Knowledge Management*, *23*(2), 332–350. https://doi.org/10.1108/JKM-01-2018-0033

Singh, S. K. (2008). Role of leadership in knowledge management: a study. *Journal of Knowledge Management, 12*(4), 3–15. https://doi.org/10.1108/13673270810884219

Skyrme, D. J. (2000). Developing a knowledge strategy: from management to leadership. *Knowledge management: Classic and Contemporary Works*, 61–83.

Soper, D. (2021). A-priori sample size calculator for structural equation models [software]. 2018. In.

Soto-Acosta, P., Popa, S., & Palacios-Marqués, D. (2017). Social web knowledge sharing and innovation performance in knowledge-intensive manufacturing SMEs. *The Journal of Technology Transfer, 42*(2), 425–440. https://doi.org/10.1007/s10961-016-9498-z

Vance, A., Lowry, P. B., & Eggett, D. (2013). Using accountability to reduce access policy violations in information systems. *Journal of Management Information Systems, 29*(4), 263–290. https://doi.org/10.2753/MIS0742-1222290410

Vance, A., Lowry, P. B., & Eggett, D. (2015). Increasing accountability through user-interface design artifacts. *MIS Quarterly, 39*(2), 345–366. https://www.jstor.org/stable/10.2307/26628357

Vasilaki, A., Tarba, S., Ahammad, M. F., & Glaister, A. J. (2016). The moderating role of transformational leadership on HR practices in M&A integration. *The International Journal of Human Resource Management, 27*(20), 2488–2504. https://doi.org/10.1080/09585192.2016.1204556

Viitala, R. (2004). Towards knowledge leadership. *Leadership & Organization Development Journal, 25*(6), 528–544. https://doi.org/10.1108/01437730410556761

Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research, 19*(1), 52–90. https://doi.org/10.1177/009365092019001003

Wang, S., Noe, R. A., & Wang, Z.-M. (2014). Motivating knowledge sharing in knowledge management systems: A quasi–field experiment. *Journal of Management, 40*(4), 978–1009. https://doi.org/10.1177/0149206311412192

Williams, K., Harkins, S. G., & Latané, B. (1981). Identifiability as a deterrant to social loafing: Two cheering experiments. *Journal of Personality Social Psychology, 40*(2), 303. https://doi.org/10.1037/0022-3514.40.2.303

Yang, Y., Secchi, D., & Homberg, F. (2017). *Developing an empirical scale for organizational defensive routines* [Paper presentation]. The *Academy of Management Proceedings*.

Yang, Y., Secchi, D., & Homberg, F. (2018). Are organisational defensive routines harmful to the relationship between personality and organisational learning? *Journal of Business Research, 85*, 155–164. https://doi.org/10.1016/j.jbusres.2017.12.036

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist, 35*(2), 151. https://doi.org/10.1037/0003-066X.35.2.151

Zia, N. U. (2020). Knowledge-oriented leadership, knowledge management behaviour and innovation performance in project-based SMEs. The moderating role of goal orientations. *Journal of Knowledge Management*, *24*(8), 1819–1839. https://doi.org/10.1108/JKM-02-2020-0127