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The Role of Collaborative Climate in Fostering Knowledge Sharing: Evidence from Sudanese Insurance Companies

Abdelsalam Adam Hamid[1*], Maisoon Ali Abdelkareemm[2], Al. BeisaniAl. Nabulsi Yousif[3], Abdullah Hamid Hamad[4]

1. Logistics and Transport Management, Department International Maritime College Oman, Sohar, Oman.
2. College of Business Administration, University of Hafr Al-Batin, Al-Batin, Saudi Arabia.
3. Assistant Professor, College of Business, Human resource Department, University of Jeddah, Kingdom of Saudi Arabia.
4. Shikan Insurance Company, Khartoum, Sudan.

Abstract

This study uses the theory of social exchange (TSE) as a foundation to investigate the effect of a collaborative climate (CC) on knowledge-sharing attitudes (KSA) in Sudanese insurance companies. A descriptive research approach was adopted using a questionnaire to collect data from a convenience sample of 395 employees working in Sudanese insurance firms. Structural equation modeling (SEM) was conducted using SPSS and AMOS to analyze the data. The proposed hypotheses were tested through path coefficient analysis. The results indicate that among the CC components, only collaborative belief has a significant positive effect on KSA. In contrast, the other components—immediate supervisor and workgroup—show a negative effect on KSA. These findings were interpreted concerning existing literature. This study acknowledges certain limitations, including the use of a non-probability sampling method and a cross-sectional design. Recommendations for future research are provided. This study provides valuable insights for both theory and practice, helping practitioners and team leaders recognize the importance of fostering a collaborative environment that strengthens social connections among colleagues and promotes positive workplace relationships.

Keywords: Collaborative knowledge environment, Intention, Knowledge sharing, Attitude

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Corresponding author: Abdelsalam Adam Hamid
E-mail ✉ abdelsalam@imco.edu.om

Introduction

Knowledge has long been a driving force behind both material progress and spiritual enrichment in human societies. It spans numerous disciplines and sub-disciplines, forming an interconnected and evolving landscape. The realm of knowledge is limitless, constantly expanding, and never fully complete, as every field presents new challenges that demand further study and research. Knowledge can also be categorized as personal or public, as well as explicit or tacit (implicit).

Knowledge sharing refers to the exchange of information, expertise, and skills among individuals within a community. In organizations, it plays a crucial role in maintaining a competitive edge in today's fast-changing business environment. However, knowledge is often perceived as personal property, which can hinder the willingness of employees to share it. Several factors contribute to this reluctance, including organizational norms, lack of trust, insufficient management support, lack of reciprocity, and concerns over losing power [1].

Knowledge sharing can offer significant benefits to employees by helping them streamline work processes, gain immediate access to information, and reduce the time required to learn new skills [2]. For organizations, fostering a collaborative climate

(CC) is essential to encourage employees to share their knowledge [3-7]. Several researchers have examined how perceptions of CC influence employees' intentions to share knowledge [8]. However, the specific impact of CC on knowledge-sharing attitude (KSA) remains underexplored.

Organizational climate reflects employees' shared perceptions of their work environment. It encompasses their interpretations of workplace expectations and influences their behavior accordingly [9]. A collaborative climate, in particular, refers to cultural factors within an organization that encourage employees to exchange knowledge [10].

Attitudes significantly shape individuals' decision-making, actions, and overall behavior, serving as a lens through which they interpret experiences [11]. By understanding a person's attitude, one can reliably predict their behavioral tendencies toward a particular subject. Susantri and Wood [12] suggest that workplace climate can influence employees' engagement in knowledge-sharing activities. Employees' attitudes and willingness to share knowledge largely depend on their perceived benefits or drawbacks—whether extrinsically motivated by rewards or hindered by personal reservations.

Riege [13] identifies key obstacles to knowledge sharing, classifying them into three categories:

- Individual factors: Lack of trust, fear of losing power, and weak social networks.
- Organizational factors: Poor leadership, ineffective reward systems, and limited sharing opportunities.
- Technological factors: Inadequate IT systems and lack of relevant training.

Given these challenges, this study aims to explore the key factors that influence employees' KSA within organizations.

Statement of the problem

The field of knowledge management (KM) emphasizes knowledge sharing, knowledge transfer, and the challenges that hinder these processes [14]. While knowledge sharing is often explored at an individual level, knowledge transfer is usually examined in organizational or group contexts. However, a review of existing literature reveals several gaps that this study aims to address.

Most research in this field has focused on the factors influencing knowledge sharing, such as subjective norms and reward-based motivations. However, few studies have included quantitative data on employees' attitudes toward knowledge sharing, particularly concerning managerial support and organizational culture [2, 15]. This research seeks to bridge this gap by investigating the relationship between a collaborative climate (CC) and KSA in organizational settings.

Additionally, many previous studies have treated collaborative climate as a single-variable construct [9, 16, 17]. In contrast, this research takes a multidimensional approach, considering various components of CC to provide a more nuanced understanding of its influence on KSA.

Another limitation of existing research is its geographical focus. Most studies on knowledge sharing have been conducted in East and Southeast Asian countries, while relatively few have explored this topic in Arab nations or within the service sector. Since knowledge sharing plays a crucial role in improving organizational efficiency, studying its dynamics in underdeveloped economies, particularly Sudan, can provide valuable insights into fostering collaboration and knowledge exchange. By examining Sudanese insurance firms, this research aims to contribute to a broader understanding of how collaborative environments influence knowledge-sharing behavior in different economic and cultural contexts.

This study is particularly relevant to organizational leaders who seek to enhance knowledge-sharing practices within their teams. In a workplace where collaboration is encouraged, employees are more likely to exchange information, develop new skills, and contribute to a culture of continuous learning. Understanding the key factors that shape KSA can help businesses implement strategies that promote better communication and teamwork.

In addition to offering practical implications, this study also expands the body of research on collaborative climates by exploring why and how they impact KSA. It provides empirical evidence on the significance of CC in underdeveloped economies, particularly within Sudanese insurance firms.

To structure the discussion, this study is organized into several sections. The first section introduces the topic and research problem. The second section presents a literature review, exploring collaborative climate and its connection to KSA. The third section outlines the research methodology and data collection process. The fourth section focuses on data analysis and results, followed by a discussion of key findings. Finally, the study concludes with research implications and suggestions for future investigations.

Theoretical background

Collaborative climate

Concept of collaborative climate

Khanam *et al.* [16] define collaborative climate (CC) as an organizational culture that fosters effective teamwork to coordinate tasks efficiently and achieve business goals. This climate is shaped by the shared perceptions of employees regarding what is

significant and influential in their work environment [9]. Employees interpret and respond to the organizational climate based on their perceptions, which in turn affects their behavior. According to social exchange theory [18], employees who perceive their organization as supportive are more likely to reciprocate with engagement, knowledge sharing, and commitment to organizational success.

Sveiby and Simons [19] further explain that trust and collaboration within an organization's culture play a critical role in encouraging knowledge sharing (KS). In a business setting where collaboration is emphasized, supervisors and coworkers play essential roles in influencing knowledge-sharing behavior. Team-based collaboration enhances knowledge exchange, as employees engage in joint discussions, contribute to shared projects, reflect on research, consult with experts, and participate in professional development activities.

Researchers have identified several key dimensions of collaborative climate that influence knowledge sharing. These include immediate supervisor support, collaborative belief, and workgroup support. Each of these dimensions affects how employees engage in knowledge-sharing activities and the overall effectiveness of knowledge management within an organization.

Dimensions of collaborative climate

1. Immediate supervisor support

Supervisor support refers to the extent to which supervisors recognize employee contributions and express concern for their well-being [19]. While supervisors manage multiple responsibilities, providing direct support to employees remains a critical aspect of their role. Studies indicate that when managers actively encourage and support knowledge sharing, employees are more likely to engage in it [20].

Research conducted by Sohail and Daud [21] in higher education institutions revealed a strong positive relationship between management's encouragement and the development of a knowledge-sharing culture. Similarly, Wang and Noe [22] emphasized that support from leadership is a crucial factor in fostering a successful KS environment. They argue that organizations should establish structured incentives and recognition programs to reward supervisors who actively promote knowledge-sharing among employees.

2. Collaborative belief

A collaborative belief system within an organization fosters the mindset that knowledge should be shared rather than restricted [23, 24]. When employees collectively believe in the importance of knowledge exchange, it creates a supportive cultural environment for effective knowledge-sharing practices.

Organizations that cultivate a culture of collaboration experience greater benefits from their knowledge-based resources [23]. Petrov *et al.* [25] highlight that knowledge exists within social networks, meaning it is constantly reshaped and redefined through interaction. Unlike structured information, knowledge is dynamic and context-dependent, making social collaboration an essential factor in its dissemination.

Davenport and Prusak [26] argue that the integration of knowledge within an organization depends heavily on people and culture, rather than solely on formal knowledge management systems. They suggest that successful knowledge-sharing environments require reciprocal trust, mutual respect, and active engagement among employees. Additionally, knowledge transfer is more effective in organizations that support informal discussions, mentorship programs, and interdisciplinary teamwork.

3. Workgroup support

Workgroups increase direct interaction among employees, which enhances the likelihood of spontaneous and structured knowledge sharing [23, 27]. Organizations that rely on team-based structures are generally more effective in knowledge dissemination compared to those that operate with a highly individualized work approach.

In collaborative workgroups, employees exchange insights, refine ideas collectively, and develop solutions together. This dynamic fosters a harmonious and productive knowledge-sharing culture. Some employees are naturally motivated to share their expertise, and a well-functioning workgroup provides an ideal setting for them to do so. Kim and Lee [28] emphasize that the presence of knowledge donors and recipients in a supportive team environment leads to a highly efficient knowledge-sharing ecosystem.

A strong workgroup creates an atmosphere where employees feel comfortable sharing their insights, asking for help, and contributing to discussions. This sense of community ultimately strengthens organizational learning and innovation, ensuring that knowledge is not siloed but rather distributed across teams and departments.

Knowledge sharing attitude (KSA)

Numerous studies confirm the benefits of knowledge sharing (KS) across organizations, departments, teams, and individuals. This process is essential for effective knowledge management and improving organizational performance.

An individual's attitude toward knowledge sharing reflects their positive or negative perceptions, thoughts, and feelings about sharing knowledge. It is shaped by motivation, personal experiences, and workplace culture.

One key perspective in understanding KSA is social exchange theory (SET). SET explains that employees engage in knowledge-sharing behaviors based on their expectations of reciprocity and rewards. Employees are likely to choose actions that maximize benefits and minimize costs [22].

Hypotheses development and theoretical framework

1. The Relationship Between Collaborative Climate and KSA

Several studies highlight the strong influence of organizational climate on knowledge sharing [25, 29-31]. The consensus is that certain workplace climates are more conducive to knowledge sharing than others.

Khosravi *et al.* [32] argue that the flow of knowledge sharing depends on: mutual trust among colleagues, positive relationships with supervisors, strong team and organizational support, and flexible and diverse work environments.

Similarly, Ciganek, Mao, and Srite (2010) found that open communication, trust, and management support significantly enhance knowledge-sharing behaviors among employees.

2. Social Exchange Theory and Collaborative Climate

The social exchange theory (SET) [18] serves as the foundation for this study's research model. SET describes interpersonal interactions involving behavior, emotions, shared products, and communication. It suggests that when employees perceive their organization as supportive, they are more likely to engage in knowledge sharing, based on the principle of reciprocity.

A collaborative climate (CC) fosters trust, teamwork, and open knowledge exchange [10]. Prior research has identified key elements of collaborative climate that influence knowledge sharing:

Immediate supervisor support

Collaborative belief

Workgroup support

Based on this framework, the following hypothesis is proposed:

Hypothesis (H):

A collaborative climate is positively associated with KSA.

H1: Immediate supervisor support is positively associated with KSA.

H2: Collaborative belief is positively associated with a KSA.

H3: Workgroup support is positively associated with KSA.

Figure 1. Conceptual framework

A conceptual framework is presented in **Figure 1**.

Instrument development

This study employs a quantitative, experimental research design, utilizing a 22-item questionnaire to assess three dimensions of collaborative climate (CC) and KSA. The questionnaire follows a five-point Likert scale to measure responses. The collaborative knowledge environment (CKE) was assessed using 20 items, adapted from Sveiby and Simons [10], while the KSA was measured through four items, sourced from Olatokun and Nneamaka [33].

The research sample consists of 395 employees from Sudanese insurance firms. Given the study's time constraints, the convenience sampling method was chosen for data collection, as it is both efficient and cost-effective. To test the proposed hypotheses, AMOS software was used for statistical analysis. Various techniques were applied, including frequency analysis, Cronbach's alpha (for reliability assessment), Pearson's correlation (to examine relationships between variables), and path analysis (to test the direct effect of CC on KSA).

Results and Discussion

A descriptive statistical analysis was conducted to examine the demographic characteristics of the respondents, focusing on gender, age, marital status, qualifications, job position, and work experience. The results indicate that 61.7% of the respondents were male, while 38.3% were female, showing a higher participation of men in the study.

In terms of age distribution, 24.4% of respondents were between 20 and 30 years old, while 34.0% fell within the 31 to 40 age range. The 41 to 50-year-old group accounted for 27.5%, and 12.7% of respondents were between 51 and 60 years old. Only 1.5% were above the age of 60, indicating that most participants were within the active workforce.

Regarding marital status, the majority of respondents were married (70.1%), followed by single individuals (25.0%), while 4.9% belonged to other categories. In terms of educational background, 65.1% of respondents were graduates, and 29.0% held postgraduate degrees. A smaller percentage, 5.8%, had only an undergraduate education, while 0.6% had other qualifications.

The job position distribution showed that 58.6% of respondents were employees, followed by 22.5% who held departmental head positions. Meanwhile, 11.7% of respondents were managers, and 7.1% belonged to other job categories. Regarding work experience, 29.6% of respondents had more than 15 years of experience, while 26.9% had between 11 to 15 years of experience. Additionally, 24.7% had worked between 5 to 10 years, and the remaining 18.8% had less than 5 years of experience.

Confirmatory factor analysis (CFA) for collaborative knowledge environment

To validate the measurement model, confirmatory factor analysis (CFA) was conducted using AMOS (analysis of moments of structure). CFA is an essential statistical technique used to examine the relationship between observed variables and their underlying theoretical constructs, ensuring that the model fits the data appropriately.

In this study, CFA was applied to assess the collaborative climate (CC) as an independent variable, focusing on its factor loadings and model fit indices. The results provided valuable insights into the reliability and validity of the proposed framework, confirming that the identified constructs effectively represent the intended dimensions. **Figure 2** illustrates the CFA model for CC variables, demonstrating the relationship between the study's key components.

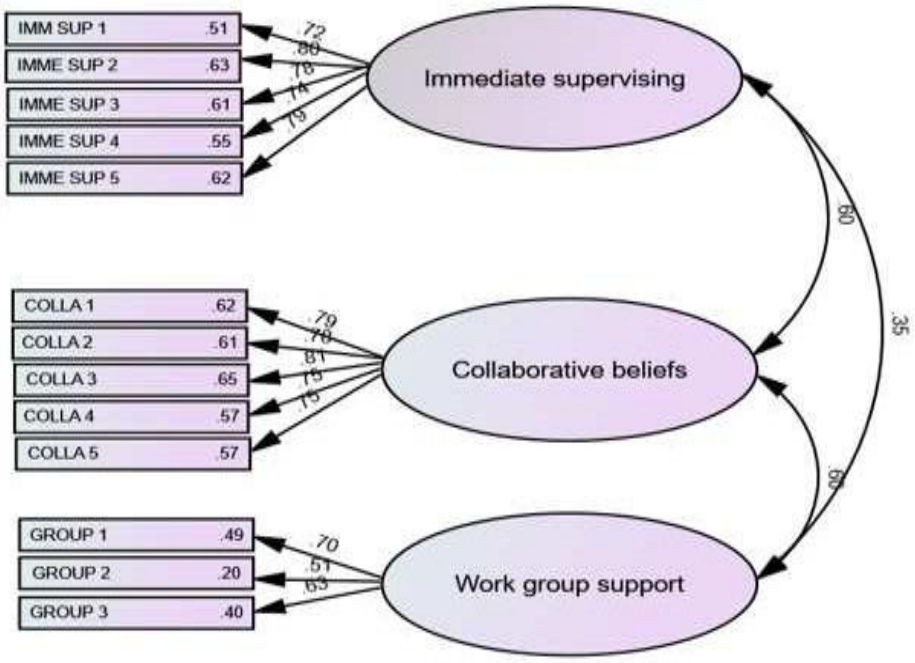

Figure 2. Confirmatory factor analysis for CC (Source: prepared by the researcher from data (2019))

Confirmatory factor analysis for KSA: Reliability analysis

In this study, Cronbach's alpha was used as a diagnostic tool to assess the internal consistency of multiple measurements for the study variables. According to Hair *et al.* [34], the acceptable lower limit for Cronbach's alpha is 0.70, though it can be as low as 0.60 in exploratory research. Similarly, Nunnally (1978) stated that Cronbach's alpha values above 0.60 are considered reliable. Given its widespread application, Sharma (2000) also emphasized Cronbach's alpha as a standard measure of reliability in research studies.

The results of the reliability analysis are presented in **Table 1**, confirming that all study variables meet the minimum reliability threshold ($\alpha > 0.60$). This indicates that the measurement scales used in the study exhibit an acceptable level of reliability, ensuring consistency in the collected data.

Table 1. Reliability analysis of the variables

Construct	Variables	Number of items	Cronbach's alpha
Collaborative climate	Immediate supervisor	9	0.920
	Collaborative belief	5	0.882
	Work group support	3	0.766
Attitude toward knowledge sharing	Attitude toward knowledge sharing	5	0.885

Hypotheses testing

This section aims to investigate the main hypotheses of the study, which propose that the dimensions of the collaborative climate are positively associated with KSA. The hypotheses are designed to assess the relationship between various aspects of collaborative climate, such as immediate supervisor support, collaborative belief, and workgroup support, and their influence on employees' attitudes toward sharing knowledge within organizations.

As shown in **Table 2**, the study seeks to validate these hypotheses and determine whether the collaborative climate factors indeed contribute to a more favorable attitude toward knowledge sharing among employees. The testing of these hypotheses will provide insight into the impact of the collaborative environment on knowledge-sharing practices and help confirm or refute the proposed relationships.

Table 2. Collaborative climate and attitude toward knowledge sharing

Relationship			Estimate	S.E.	C.R.	P
Attitude toward knowledge	<---	Immediate supervising	0.036	0.047	0.776	0.438
Attitude toward knowledge	<---	Collaborative belief	0.114	0.060	1.889	0.059
Attitude toward knowledge	<---	Work group support	0.083	0.056	1.478	0.139

This study explores how the collaborative climate influences KSA within Sudanese insurance companies. The findings emphasize the importance of fostering a collaborative climate to encourage employees to engage in knowledge sharing. However, the results also highlight some surprising findings that contrast with prior research.

First, the study revealed that immediate supervisor support does not significantly affect employees' attitudes toward knowledge sharing. The results indicate that the support from immediate supervisors is relatively low within the organizations studied, which may explain the lack of significant influence on knowledge-sharing behavior. This finding is in contrast to some previous studies [35, 36], which have suggested a positive relationship between supervisor support and knowledge sharing. The absence of this effect could be due to a different organizational culture or the limited leadership support observed in the insurance companies under investigation.

On the other hand, collaborative belief was found to positively influence KSA. This finding is consistent with Sveiby and Simons [10], who argue that the cultural elements within an organization—such as shared values, beliefs, and the collective atmosphere-play a crucial role in fostering knowledge sharing. When employees hold a strong belief in the value of knowledge sharing, they are more likely to engage in and support such practices. This suggests that strengthening the belief in collaboration and knowledge exchange within the organization can enhance employees' attitudes toward sharing their knowledge.

Contrary to expectations, Teamwork did not show a significant impact on KSA. Some studies, such as Al-Adaileh and Al-Atawi's [37] in Saudi Arabia's telecommunications sector, have similarly found that teamwork and collaboration did not necessarily promote knowledge sharing. While other research (e.g., Lin and Lee [38]; Lin [39]) emphasizes the role of teamwork in encouraging knowledge exchange, this study suggests that other factors—such as management support and organizational culture—might play a more influential role in shaping knowledge-sharing behavior. This highlights the need to further examine how different organizational settings and structures might affect the outcomes of teamwork in knowledge-sharing contexts.

Conclusion

In summary, while collaborative belief emerged as a strong predictor of KSA, the findings suggest that immediate supervisor support and teamwork may not be as influential in the studied context. These results underscore the importance of a supportive and collaborative organizational culture, while also indicating that supervisor support and teamwork dynamics may require further exploration in different organizational environments.

Implications

This study contributes to the literature in several meaningful ways. The findings offer a deeper understanding of the collaborative climate (CC) concept and its relationship with KSA, expanding on existing theories and frameworks. The

research sheds light on the complexity of how different CC dimensions impact KSA, showing that not all aspects of the collaborative climate are equally influential. Specifically, while dimensions such as immediate supervisor support and workgroup support were found to have no significant impact on KSA, collaborative belief emerged as a powerful factor influencing employees' attitudes toward sharing knowledge.

From a practical standpoint, the study offers several actionable insights for organizations looking to foster a culture of knowledge sharing. It underscores the importance of creating a work environment that nurtures social ties among employees and promotes positive relationships. By doing so, organizations can facilitate the movement of knowledge from the individual level to the team, organizational, and even inter-organizational levels. The results also emphasize that Collaborative belief plays a central role in shaping employees' knowledge-sharing behaviors. Consequently, management should focus on reinforcing and supporting collaborative beliefs to cultivate a stronger knowledge-sharing culture within the organization.

Future research

While this study has contributed valuable insights, there are several avenues for future research. First, the study did not distinguish between different types of knowledge being shared. Future studies could explore how the type of knowledge—whether tacit or explicit—affects KSA. Additionally, as Denscombe (2000) noted, a sample should be representative of the population, and the current study's sample size was relatively small. Future research with a larger sample size could offer more generalizable results and greater statistical significance.

Another area for further exploration is the longitudinal aspect of the study. A longitudinal study would allow researchers to examine how the relationship between collaborative climate and KSA evolves, especially in light of changing organizational characteristics. This would provide a clearer understanding of the causal relationships and whether the impact of different CC dimensions changes as organizations develop.

In summary, while this study has laid important groundwork for understanding the dynamics between collaborative climate and KSA, future research is needed to refine and expand upon these findings, particularly by exploring different types of knowledge and utilizing larger, more representative samples over extended periods.

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