The Learning Organization

Performance through knowledge: a framework linking leadership, ISO 9001 and learning capabilities

Taylan Budur
Business and Management Department, Tishk International University, Erbil, Iraq

Nuri Gökhan Torlak
Department of Management, School of Management Sciences, Ibn Haldun University, Istanbul, Turkey, and

Halil Demirer
Independent Author, UK

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Abstract

Purpose – This study aims to examine the links between knowledge-oriented leadership (KOL), organizational learning (OL), knowledge sharing (KS), organizational performance (OP) and ISO 9001, as well as the mediating role of OL and KS in the relationship between KOL and OP; and the moderating effect of KS on the relationship between KOL and OP to improve service quality in Iraq's telecommunications and Internet industries.

Design/methodology/approach – In-person data collection from 220 employees of 20 Iraqi companies used simple random sampling. The approach comprises path analyses through structural equation modeling, mediation and moderation analyses, respectively.

Findings – The findings show that KOL improves OL but not KS. KOL positively and significantly affects OP. OL positively influences OP, whereas KS does not. KS is unaffected by ISO 9001 while OL and OP are. OL significantly and partially mediates the connection between KOL and OP. KS does not mediate the relationship between the KOL and the OP. KS significantly moderates the interaction between KOL and OP.

Research limitations/implications – The survey was limited to Iraqi companies and received few responses. Results may not be indicative of the nation. The study evaluated telecommunications and internet companies using self-reported survey data from the COVID-19 period, plus a small amount of demographic data. The study did not cover digital platforms in KS.

Originality/value – The study addresses a research gap in learning organization theory by investigating the links between KOL, OL, KS, ISO 9001 and OP in Iraq.

Keywords ISO 9001, Knowledge-oriented leadership, Knowledge sharing, Organizational learning, Organizational performance

Paper type Research paper

1. Introduction

Innovation, information exchange, continuous learning and leadership are important markers of success in Iraq's knowledge-intensive industries about productivity, profitability, adaptability and morale (Bisheen, 2024). Internet and telecommunications companies encountered specific common difficulties in service quality (Anwar et al., 2018; Demir et al., 2023), including

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legislative (fragmented information technology, ambiguous rules for information sharing and underdeveloped cybersecurity laws) (Suleiman et al., 2023), infrastructural and technological (limited network capacity, disrupted fiber-optic routes, power outages, poor Internet speed, frequent Internet blocking, high infrastructure upgrading costs, high Internet access costs, high prices for high capacity packages and insufficient defenses) (International Trade Administration, 2021), behavioral (lack of employee education and skills and no incentives and training for knowledge sharing [KS]) (Alsabah et al., 2021) and traditional (frequent use of SMS, landlines, voice calls, fax, telex and traditional postal system) (Alfaiza et al., 2021). These companies are also hierarchical and bureaucratic, maintaining inert cultures and mechanistic structures that emphasize caution, conservatism, centralization, standardization and low differentiation and integration, all of which impede innovation and learning (Ali & Sagsan, 2023; Jones, 2013).

Leaders in knowledge-driven industries can accomplish organizational objectives by producing and disseminating knowledge, expertise and experiences (Banmairuroy et al., 2022). Therefore, they encourage cooperation, open communication, consensus and the development of new skills (Donate & de Pablo, 2015; Nonaka & Takeuchi, 1995; Zia, 2020). Despite the importance of knowledge management in improving organizational learning (OL), insufficient communication and collaboration and a lack of trust hinder the promotion of KS in Iraqi businesses (Sadq et al., 2020).

Knowledge-oriented leadership (KOL) promotes learning, information exchange, innovation and effectiveness (Cabrera & Cabrera, 2005; Gürlek & Cemberci, 2020; Farooq, Xu, Afshan, & Khalid, 2021; Sadq, Othman, & Mohammed, 2020). Ongoing learning and skill development improve employee competency, creativity, engagement, empowerment, autonomy and organizational performance (OP) (Argote & Miron-Spektor, 2011; Mohlin, 2023; Senge, 1990; Škerlavaj, Štemberger, & Dimovski, 2007). However, due to their low operational efficiency, poor service quality and lack of systematic learning, internet and telecommunications companies fail to adapt to technological advances (Alsabah, Aljshamee, Abduljabbar, & Alsabbagh, 2021; Anwar, Nawzad, & Qadir, 2018; Jia, Khassawneh, Mohammad, & Cao, 2024; Malik, Abbas, & Imam, 2023).

Traditional leaders should create a learning-oriented workplace where employees exchange knowledge to thrive in rapidly changing technology (Cik et al., 2021). KS fosters creativity, innovation, problem-solving, decision-making, continuous development and OP (Argote & Miron-Spektor, 2011; Cabrera & Cabrera, 2005; Cormican et al., 2021; Shamim et al., 2019). Hamid and Al-Tabtabae (2022) found no significant impact on knowledge-driven firms despite the conceptual relationship between KS and OP. Iraq rely on fiber-optic lines through neighboring countries, slow Internet connections, power outages, dispersed technology, physical attacks on infrastructure, a lack of incentives for knowledge base contributors and training for employees with low backgrounds and qualifications. Outdated infrastructure, loose enforcement of rules and a lack of investment in human capital exacerbated these issues by decreasing the effectiveness of KS practices in the telecom sector.

Knowledge management strengthens the link between KOL and OP and promotes innovation (Gürlek & Çemberci, 2020; Zia, 2020). Continual regeneration of knowledge from experiences and skills or OL mediates the relationship between KOL and OP (Jia et al., 2024; Rehman et al., 2019; Rehman & Iqbal, 2020). Work environments that value information exchange facilitates the relationships between teamwork, trust, creativity and OP (Chughtai & Khan, 2024). But Iraqi businesses lack established collaboration platforms, knowledge bases or intelligence systems (Sulayman *et al.*, 2025).

ISO 9001-certified organizations create and apply knowledge efficiently, increasing their marketability by developing, measuring, monitoring and improving the quality of their goods and services in accordance with consumer goals and regulatory criteria (Demir et al., 2023). ISO 9001 procedures formalize learning cycles and develop knowledge, skill, adaptation and systematic review methodologies (Lakhal, 2014; Manders, de Vries, & Blind, 2016; Neyestani & Juanzon, 2017; Psomas & Jaca, 2016; Sampaio, Saraiva, & Monteiro, 2012; Vetchagool, Augustyn, & Tayles, 2021). ISO 9001 also facilitates documentation, knowledge gathering and exchange, structured communication, codification and promotes customer satisfaction, product quality, operational consistency and OP (Martínez-Costa, Choi, Martínez, & Martínez-Lorente, 2009; Cormican, Meng, Sampaio, & Wu, 2021; Manders et al., 2016; Heras-Saizarbitoria, Arana, & Boiral, 2015; Vetchagool et al., 2021). In total, 59.5% of Iraqi workers were unaware that their organization adheres to ISO 9001, although it is typically associated with improved OP (Demir, Budur, Omer, & Heshmati, 2023).

Information distribution and modification moderate the relationship between OP and innovative leadership (Mittal & Dhar, 2015). KS significantly but negatively moderates the relationship between KOL and OP, indicating that an elevated level of KS lessens the impact of KOL on OP. KOL's unique influence is less apparent in settings with a significant degree of cooperation (Chughtai & Khan, 2024).

Given legal, infrastructural, technological, behavioral and traditional issues that were revealed in the knowledge-intensive industries, the previous studies discussed in the current study and the COVID-19 pandemic, which highlighted the significance of information technology, the paper suggests a model that assumes that Internet and telecommunications companies might consider the links between innovative leaders, learning, information sharing, organizational effectiveness and quality management systems, as well as learning and KS as mediators and information sharing as a moderator in the relationship between novel leadership and performance to change businesses' attitudes and behavior in the improvement of service quality.

Section 2 of this study discusses KOL, KS, OL, OP and ISO 9001 and develops hypotheses based on previous research. Section 3 presents the proposed model, methodology, sample, measurements and the common method bias. Section 4 covers multicollinearity, descriptive statistics, factor analysis, structural equation modeling and mediation and moderation analyses. Section 5 discusses the findings in the context of published literature. Section 6 evaluates the findings' implications for practice. Section 7 reveals limitations and offers ideas for future research. The conclusion explains the findings in general, with a focus on unsupported hypotheses.

2. Theoretical framework and hypotheses

2.1 Knowledge-oriented leadership

KOL fosters a climate in which employees may gather, disseminate and apply information to improve the company's effectiveness (Viitala, 2004). KOL links employee efforts to organizational goals by combining transformational leadership (which emphasizes trust, inspiration, charisma, confidence, vision, needs, creativity and support) and transactional leadership (which deals with rewards, punishments and task performance) (Bryant, 2003). KOL encourages employees to source, modify, distribute and apply knowledge through effective information and vision sharing, mentoring and other techniques, all of which are critical for supporting teamwork, innovation and lifelong learning (Donate & de Pablo, 2015; Shamim, Cang, & Yu, 2019). To increase innovation and speed the learning cycle required to accomplish the company's objectives, KOL encourages trust, engagement and teamwork,

which improves knowledge circulation (Shamim et al., 2019; Banmairuroy, Kritjaroen, & Homsombat, 2022). KOL is associated with knowledge management behavior (Zia, 2020), project-based innovation success (Zia, 2020) and knowledge worker satisfaction (Farooq *et al.*, 2021). When KOL invests in staff skills and training programs, their effectiveness improves (Banmairuroy et al., 2022). KOL emphasizes delegation, facilitation, recognition, curiosity, creativity, experimentation and knowledge rooted in an organization's culture, all of which contribute to KS and learning (Gürlek & Cemberci, 2020; Senge, 1990). These behaviors define the competitive advantage in knowledge-intensive sectors (Nonaka, 1994).

2.2 Knowledge sharing

In a complex, dynamic and competitive environment, businesses that can create and integrate knowledge more effectively than competitors are likely to obtain a competitive advantage (Jones, 2013; Johnson & Scholes, 2002). Nonaka and Takeuchi (1995) argued that categorizing information as explicit or tacit in knowledge generation is important. The former is formalized, objective and used in a formal language. The latter is personalized and specific, making it difficult to impart. Explicit information is straightforward and helps the learner to develop his or her tacit knowledge. Innovative companies require continuous modification and dissemination of their members' knowledge to create a "spiral of interaction" between explicit and tacit knowledge through socialization (from tacit knowledge to tacit knowledge: sharing experiences between individuals and allowing them to obtain tacit knowledge without formal communication), externalization (from tacit knowledge to explicit knowledge: expressing tacit knowledge into explicit knowledge through building models or using metaphors), combination (from explicit knowledge to explicit knowledge: building a knowledge system by linking concepts or explicit knowledge with meetings or computer networks) and internalization (from explicit knowledge to tacit knowledge: embodying explicit knowledge into tacit knowledge). Therefore, exchanging insights among individuals, groups, or organizations is important. Increasing performance necessitates the application of tacit knowledge gained through experience and explicit knowledge acquired from documents or processes. KS should be acknowledged, accessible knowledge archives should be created, and collaborative technology should be made accessible (Ray, 2008).

2.3 Organizational learning

OL is the process that managers use to improve organizational members' ability to understand the company and its environment, so that they can continually regenerate new knowledge from individual experience and skills, which encourages mutual questioning and challenge around a shared purpose, resulting in increased organizational effectiveness (Jones, 2013; Johnson & Scholes, 2002). Individual learning, continual information production, interpretation, transfers, acquisition, training and feedback, and the development of new activities and procedures, are parts of OL that aim to improve performance and adaptability. Organizations may find best practices, improve tactics and adapt to changing environments by embracing open communication, learning from mistakes and valuing knowledge production and sharing (Argote & Miron-Spektor, 2011).

Senge (1990) proposed certain concepts to promote learning at the individual, group, organizational and inter-organizational levels. To develop a learning organization, managers must understand how one level of learning affects the next. Individually, managers should allow organizational members' energies and visions to experiment, develop and explore what they desire (personal mastery) while also challenging deeply rooted assumptions that influence how people view the world and act (mental models). At the group level, enriched

debate and dialogue enable organizational members to share and pool their talents and abilities to solve challenges through synergy. Managers facilitate learning at the organizational level by developing common pictures through organizational structure and culture (shared vision). Jones (2013) argued that mechanistic structures facilitate exploitative learning (enhancing existing organizational activities and procedures). Organic structures encourage explorative learning (searching for new types of activities and methods). Inert cultures are conservative and risk-averse. Adaptive cultures encourage innovation, experimentation and risk-taking. At the inter-organizational level, mechanistic and inert organizations reject novel connection mechanisms, whereas organic and adaptive organizations actively seek and handle new resource interdependencies. Depending on negative feedback, OL adjusts behaviors to achieve intended outcomes (single-loop learning) and investigates the underlying assumptions and beliefs that drive activities to achieve desired outcomes (double-loop learning), promoting adaptive and generative learning (Argyris & Schon, 1978).

2.4 Organizational performance

OP is a measure of effective goal achievement, competitiveness sustainability and strategic effectiveness (Ahmad et al., Ahmad, Lodhi, Zaman, & Naseem, 2017). Employee contributions, teamwork and the overall achievement of the organization's financial, strategic and operational goals are part of OP (Nuhn et al., 2019). Customer satisfaction ratings, sales income and project completion timeframes are common metrics to quantify open-ended projects. Workers execute their tasks and contribute to the & company's success (Borman & Motowidlo, 1997). Teams use cooperation, coordination and communication to solve problems and achieve objectives (Hackman & Wageman, 2012). Financial performance assesses an organization's capacity to create income, control costs and maintain financial stability. It is measured by profitability, earnings per share, market performance, revenue growth and return on investment in comparison to industry competitors (Treacy & Wiersema, 2007). The best way to maintain a long-term competitive advantage is to pursue strategic objectives such as increased market share, on-time delivery, shorter design, lower costs, higher product quality, broader geographical coverage, technology leadership, innovation, employee involvement and customer satisfaction that strengthen a company's business position (David, 2007). OP is a comprehensive assessment of a company's ability to achieve its strategic goals, offer value to stakeholders and sustain a competitive advantage in the market. Strong financial performance ensures investor trust, finance and long-term viability in an uncertain market. Operational performance ensures quality and efficiency by optimizing resource utilization, eliminating waste and increasing production, while also encouraging customer responsiveness and flexibility to market demands (Schulz & Jobe, 2001).

2.5 Iso 9001

ISO 9001 is an international standard that sets the standards for a quality management system and a coordinated quality management system for guiding and controlling a corporation while keeping overall quality in mind (Goetsch & Davis, 2012). A quality management system is a systematic strategy to planning, measuring, monitoring and improving the quality of products or services provided, integrating the entire business in the quest of excellence in quality (Summers, 2018). ISO 9001 is an organizational structure that integrates policies, procedures, processes and resources to achieve customer-oriented goals while still adhering to relevant criteria (Goetsch & Davis, 2012). ISO 9001 aims to improve an organization's overall customer satisfaction, product and service quality, and operational efficiency by

addressing customer needs and legal obligations (Demir et al., 2023). Companies provide a systematic framework for meeting customer needs and continuous improvement, identifying risks and opportunities, managing interconnected activities, encouraging leadership commitment and employee involvement and seamlessly integrating quality management into the organizational structure (Sampaio et al., 2012).

2.6 Aligning learning ability with knowledge-oriented leadership, knowledge sharing and organizational learning

Learning ability refers to an individual's ability to acquire, process and apply knowledge. Donate and de Pablo (2015) and Khalid et al. (2023) argued that KOL facilitates knowledge development, sharing and utilization. Learning ability improves the interaction with KOL in two ways: first, employees with high learning capacity are more responsive to KOL, as indicated by their desire to engage in research, experimentation and reflection, and their perception that they would benefit from learning opportunities. Second, supervisors benefit from their employees' learning ability by assigning complex tasks to high-achieving learners and using them as knowledge catalysts (modeling positive learning habits for others). Learning ability enhances KOL's effectiveness. The association between learning capacity and KOL is founded on two theories: social learning (individuals with higher learning ability efficiently mimic leaders' knowledge practices) (Bandura, 1977) and self-determination (learning ability enhances intrinsic motivation) (Deci & Ryan, 1985). Wang and Noe (2010) and Lin (2007) showed that KS necessitates cognitive ability and motivation. Individuals with a high learning capacity understand topics deeply, value collaborative learning, are more confident in their knowledge, and profit from sharing. High-ability learners expect greater benefits from KS. Confidence and skill enhance perceived behavioral control (theory of planned behavior) (Ajzen, 1991), making sharing more likely. Skilled learners view KS as a mutually beneficial exchange (social exchange theory) (Blau, 1964). Learning ability improves the quality and frequency of KS behaviors.

Concerning the relationship between learning ability and OL, OL is defined as an individual's ability to observe, understand and assimilate information. High learning capacity facilitates information acquisition (faster learning), distribution (better articulation of ideas), shared interpretation (connecting varied knowledge and altering mental models) and institutionalization (embedding new behaviors and routines) (Crossan et al., 1999). Huber (1991) demonstrated that excellent learning ability boosts an organization's collective ability to learn because OL is the sum of individual learning efforts.

Learning ability becomes a cognitive engine allowing KOL to be effective, fueling KS throughout the organization and empowering OL.

2.7 Relationships between KOL and OL

Leadership that inspires KS and open communication facilitates building an organizational culture that supports capturing individual and group learning (Cabrera & Cabrera, 2005). KOL supports organizational innovation and continuous improvement by promoting experimentation, discovering new ideas, challenging the status quo, evaluating findings and sharing insights with others (Gürlek & Cemberci, 2020; Jia et al., 2024). Sadq et al. (2020) showed that KOL improves a learning culture in Iraqi firms:

H1. KOL positively affects OL.

2.8 Relationship between KOL and KS

By emphasizing KS, collaborative learning and collective knowledge within an organization, KOL enables staff members to exchange ideas and information (Argote & Miron-Spektor, 2011; Donate & de Pablo, 2015). KS is influenced by open communication, empowerment and leadership styles (Jiang et al., 2016). KOL facilitates the free flow of information by fostering psychological safety and trust among employees (Jia et al., 2024). KOL significantly increases KS among employees, which lead to creative production (Chughtai & Khan, 2024). KOL increases information sharing among employees, promoting an environment of trust and collaboration within the company (Zhang & Cheng, 2015). However, trust and shared goals are crucial for KS, which are often absent in Iraqi firms (Budur et al., 2023):

H2. KOL positively affects KS.

2.9 Relationship between KOL and OP

Leaders who promote KS and provide opportunities for training and development enhance employee competencies (Argote & Miron-Spektor, 2011). KOL encourages employees to increase their knowledge, pick up new skills and take a creative approach to their work to increase productivity and effectiveness (Shamim *et al*., 2019; Zia, 2020). Due to their involvement in knowledge management, KOL affects the performance of knowledge workers and OL (Malik et al., 2023; Jia et al., 2024).

KOL fosters to share ideas, use abilities and work together to solve problems (Mariam, Khawaja, Qaisar, & Ahmad, 2022). KOL generates an environment of ongoing development where teams learn from one another's experiences, which enhances problem-solving skills and collaboration (Banmairuroy et al., 2022). Mariam et al. (2022) detected a strong correlation between project success and team cohesion.

Through KOL, employees can share their perspectives, promoting satisfaction, creative problem solving and OP (Gürlek & Cemberci, 2020; Farooq et al., 2021). KOL influences workers' performance in terms of creativity and internal knowledge management (Zia, 2020). KOL affects financial performance (Rehman & Iqbal, 2020). KOL practices transformational and transactional leadership creating an atmosphere where KS improves OP (Donate & de Pablo, 2015):

H3. KOL positively and significantly affects OP.

2.10 Relationship between OL and OP

Better decisions and problem-solving and increased creativity and flexibility are some of the ways that OL improves performance (Belle, 2016; Ning & Li, 2018; Mohlin, 2023; Argote & Miron-Spektor, 2011; Senge, 1990). A learning culture encourages employees to seek new information and share insights to overcome challenges and advance company success (Belle, 2016; Patky, 2020). The improved OP indicates the combined effect of individual and group learning (Hendri, 2019). OL enables an organization to align its valuable and rare resources with opportunities and innovate (Wilkens, Menzel, & Pawlowsky, 2004). OL allows the organization to perform high by constantly shifting its resource base (Barney, 1991; Giniuniene & Jurksiene, 2015):

H4. OL positively affects OP.

2.11 Relationship between KS and OP

KS boosts job efficacy, encourages innovation and improves worker capacities (Argote & Miron-Spektor, 2011; Shamim et al., 2019). KS promotes collaboration, problem-solving, decision-making, creativity and performance in teams (Jiang et al., 2016). Adopting KS's culture of innovation, adaptability and continuous learning can help organizations respond to market changes and take advantage of new opportunities while improving performance (Chang et al., 2017; Malik & Garg, 2017):

H5. KS positively affects OP.

2.12 OL significantly mediates the relationship between KOL and OP

Through OL skills, Jia *et al.* (2023) found a substantial correlation between KOL and staff performance. OL and creative culture mediate the relationship between OP and leadership (Rehman, Bhatti, & Chaudhry, 2019). OL mediates the relationship between leadership and organizational innovation and OP (Hsiao & Chang, 2011). Through OL and knowledge management techniques, transformational leadership influences novelty (Noruzy et al., 2013):

H6. OL significantly mediates the relationship between KOL and OP.

2.13 KS significantly mediates the relationship between KOL and OP

Innovation and knowledge management practices partially mediate the relationship between KOL and OP (Rehman & Iqbal, 2020). Information exchange significantly influences the relationship between transformational leadership and team performance (Zhang et al., 2023):

H7. KS significantly mediates the relationship between KOL and OP.

2.14 Relationships between ISO 9001, OL, KS and OP

ISO 9001-certified firms adopt participative and innovation-supportive leadership to meet customer and regulatory requirements, which enhance their sustainability (Demir et al., 2023; Lakhal, 2014; Heras-Saizarbitoria et al., 2015). Leaders prioritize documentation, feedback systems and knowledge codification, resulting in knowledge creation and dissemination (Wang et al., 2025).

ISO 9001-certified organizations institutionalize learning cycles through promoting single-loop and double-loop learning by monitoring performance, questioning underlying assumptions, redesigning processes, developing skills and accelerating organizational adaptation (Sampaio et al., 2012; Lakhal, 2014; Manders et al., 2016; Neyestani & Juanzon, 2017). ISO 9001 improves OL by incorporating systematic review methods that convert experience into codified organizational knowledge (Psomas & Jaca, 2016).

ISO 9001 promotes transparency, documentation, information flow, repositories, protocols, knowledge collection and transfer and systematic communication (Cormican *et al.*, 2021; Martínez-Costa et al., 2009; Manders et al. (2016). However, the extent of KS improvement is determined by leadership commitment, staff awareness and the depth of certification practices (Psomas et al., 2017).

ISO 9001-certified organizations improve learning, information exchange, operational consistency and codification, leading to high OP through quality management process throughout the organization (Heras-Saizarbitoria et al., 2015; Vetchagool et al., 2021):

H8a. ISO 9001 certification positively affects OL.

H8b. ISO 9001 certification positively affects KS.

H8c. ISO 9001 certification positively affects OP.

2.15 The moderating role of KS in the relationship between KOL and OP

Higher employee KS levels amplify the positive impacts of KOL on creative performance, as demonstrated by Chughtai and Khan (2024). KS positively moderates the relationship between transformative leadership and individual performance. Participation in KS increases the positive effect that transformative leadership has on workers' performance (Le et al., 2018). Transformational leadership behaviors have a larger impact on OP for teams who participate in KS activities (Zhang et al., 2019):

H9. KS significantly moderates the relationship between KOL and OP.

3. Methodology

This study used a cross-sectional survey methodology to collect data and evaluate the suggested model. The study carried out a thorough analysis of data entry mistakes and missing data. By using factor and content analysis, the authors improved the measurement model. This exacting procedure improved the measurement model's accuracy and robustness by guaranteeing the unidimensionality and validity of the constructs studied. The authors followed Anderson and Gerbing (1988) advice and used a model-comparison technique. The authors hypothesized the model using structural equation modeling (SEM) with AMOS software, generating constructs with numerous measurement items and investigating relationships among them (Torlak et al., 2021). The authors evaluated how well the proposed model fits the empirical data, using the maximum-likelihood estimation approach.

3.1 Proposed model

This study facilitates understanding the relationships between KOL, OL, KS, ISO 9001 and OP (Figure 1).

3.2 Sample

Data for this study was gathered in-person from 220 employees of 20 private Internet and telecommunications companies in Iraq using a simple random sample technique. In total, 300 employees were given surveys by the researchers, and 220 of them responded, yielding a 0.73 response rate.

Corporate managers were given a clear explanation of the study's objective, and participation was completely voluntary and anonymous to minimize response bias and guarantee ethical transparency. Elucidating the goals of the study and guaranteeing anonymity can increase response rates and response honesty (Zickar & Keith, 2023).

The survey instrument was translated into Kurdish by a language specialist, and then back translated by another expert to confirm semantic equivalency to guarantee linguistic accuracy and cultural appropriateness (Brislin, 1970). To improve face and content validity, a management professor also checked the questionnaire for clarity and applicability.

All participating enterprises were private, even though gathering data from several organizations helped lower some of the dangers associated with single-source bias. This could restrict how broadly the results can be applied to public or mixed institutions. In

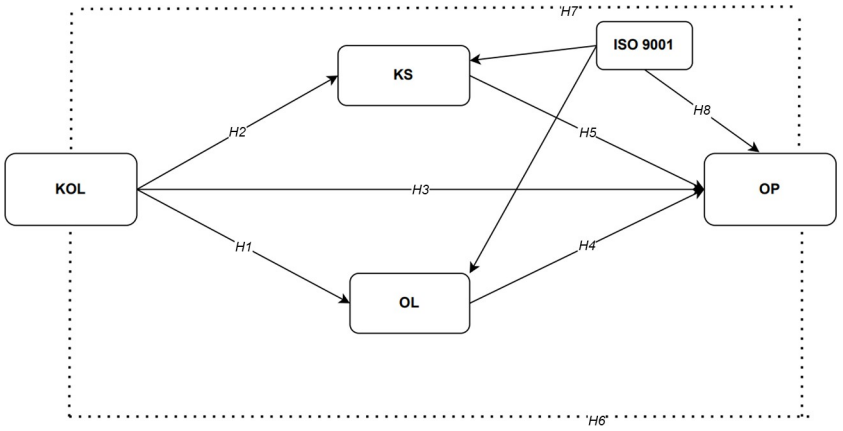

Figure 1. Hypothesized model
Note: KOL = knowledge-oriented leadership, KS = knowledge sharing, OL = organizational learning, OP = organizational performance
Source: Authors' own work

addition, the research used a cross-sectional design, which provides a moment in time but does not for the investigation of trends or changes over time (Rindfleisch et al., 2008).

Sensitivity studies were performed to verify the findings' robustness and to address any potential shortcomings. However, to reduce typical method bias, future research would benefit from using a longitudinal strategy and gathering data from a variety of sources, including supervisor ratings and organizational documentation (Podsakoff et al., 2013).

In total, 59.5% of the participants said they were unaware of their company's compliance with ISO 9001 quality management systems, which help increase output, reduce risk and achieve objectives. The interviewees' educational backgrounds were diverse; the majority (72.7%) were subject matter experts, while more than half (54.1%) had university degrees and held various positions within their organizations. Only 21.8% of the companies in the area provided web marketing services, which promoted goods and services to a large audience. Men made up most respondents (69.1%), which is indicative of the gender gap in a variety of occupations and regions.

3.3 Measures

Six items on the KOL (Cronbach's $\alpha = 0.806$) come from Donate, González-Mohíno, Appio, and Bernhard (2022) research. A sample question for KOL is "Our managers reward employees who share and apply their knowledge." OL (Cronbach's $\alpha = 0.828$) consists of four questions that were modified from the research of Obeso, Hernández-Linares, López-Fernández, and Serrano-Bedia (2020) and Martin-Rojas, Garcia-Morales, and Bolivar-Ramos (2013). The sample question for OL is "Organizational improvements have been influenced fundamentally by new knowledge entering the organization." KS has been evaluated with five items and cited from Donate and de Pablo (2015) and Demir et al. (2023). A sample item for KS "I contribute knowledge or insights that may benefit others in my workplace" (Cronbach's $\alpha = 0.883$). ISO9001 awareness and its application within the company have been measured with three questions with the response choices "1 for Yes," "3 for No" and "3 for I don't know" were used to evaluate the company's quality management

system (Alolayan, 2014; Roy & Ghose, 2018). Finally, the dependent variable OP (Cronbach's $\alpha = 0.880$) is evaluated with six items based on the works of Budur & Poturak (2021), González-Romá, Fortes-Ferreira, and Peiró (2009) and Zaim, Demir, and Budur (2021). A sample question for OP is "Our organization performs its work efficiently compared to similar organizations."

Although 59.5% of respondents said they were uninformed of their organization's ISO 9001 certification status, this does not invalidate their comments on ISO 9001-related activities. Employees may accurately evaluate operational routines, documentation procedures, process controls, corrective actions and communication practices even if they are uninformed of formal certification status (Psomas & Jaca, 2016; Sampaio et al., 2012). Employees are intimately involved in the daily implementation of ISO 9001 standards, which include adherence to established workflows, documentation, feedback systems and internal audits. Thus, respondents can indicate whether such practices exist in their departments, regardless of whether they are aware of the organization's formal certification. To ensure construct validity, the ISO 9001 scale used in this study is based on observable routines rather than certification awareness, ensuring that responses reflect observed quality management procedures rather than knowledge of certification status. This method is commonly used in ISO 9001 research, where employee awareness varies but exposure to work processes remains consistent.

3.4 Common method bias

This study gathered data from various firms with different staff levels and backgrounds to ease the worry of common method variance (Podsakoff et al., 2013). The authors tested common method bias using a common latent factor (CLF) to compare the fully constrained common method factor model with the unconstrained one. There were no shared variances and differences between the models, indicating insignificance ($\chi^2 = 65.5$, df = 1765, $p = 1.00$). Thus, factor scores for ensuing validity tests were obtained from the unconstrained model without CLF, confirming that the data are free of common method bias.

4. Data analysis and research findings

4.1 Multicollinearity and descriptive statistics

A multicollinearity assessment lessens the possibility of overlap caused by variance inflation factors (VIF) (Hair et al., 2010). Upon rotation of the independent variables (KOL, KS, OL) and dependent variable (OP) within the linear regression framework, the identified multicollinearity among dimensions remained below the specified threshold (VIF < 2). The reliability values for the research constructs within the final measurement model are robust, with the lowest value recorded at $\alpha = 0.77$, attesting to the adequate internal consistency across all scales in the study.

The hypothesized model variables exhibit correlations that range from low to moderate levels. The highest correlation was observed between KOL and OP ($r = 0.642$; $p < 0.01$), reflecting a robust positive association. The lowest correlation was identified between the ISO 9001 and education level (Table 1; $r = -0.142$; $p < 0.05$), indicating that higher formal education did not correspond to meaningfully greater ISO 9001 awareness in this sample (education coded 1 = high school, 2 = institute, 3 = university, 4 = master's).

4.2 Validation of survey measures

A confirmatory factor analysis was performed to validate the measurement model (Table 2). A basic single-dimension model was used as the starting point, and it underwent several iterations before reaching a final, well-fitting model (Model 6). Model fit improved with the

Table 1. Descriptive statistics and correlations

Factors	Mean	SD	1	2	3	4	5	6	7	8	9
1 ISO 9001	1.96	0.636	1								
2 Educational Level	2.29	0.878	−0.142*	1							
3 Position	4.05	0.632	0.119	−0.308**	1						
4 Online Marketing	1.78	0.414	0.347**	−0.016	−0.042	1					
5 Gender	1.31	0.463	−0.065	0.129	−0.011	−0.123	1				
6 KS	1.97	0.75042	−0.087	0.02	−0.067	−0.193**	0.172*	1			
7 OL	2.71	0.52256	−0.092	0.085	−0.022	−0.024	0.068	0.064	1		
8 KOL	2.46	0.41901	−0.182**	0.132	−0.092	−0.04	0.026	0.184**	0.599**	1	
9 OP	3.78	0.64609	−0.085	0.072	−0.071	−0.033	0.03	0.175**	0.489**	0.642**	1

Note(s): Pearson Correlations Sig. (2-tailed) SD = standard deviation ($n = 200$) *$p < 0.050$ **$p < 0.010$ ***$p < 0.001$. KOL = knowledge-oriented leadership, OL = organizational learning, KS = knowledge sharing, OP = organizational performance

Table 2. Measurement models fit indices

Model	Factors	CMIN/DF	CFI	GFI	TLI	RMSEA
Model 1	(KOL + OL + KS + OP)	6.554	0.449	0.553	0.396	0.159
Model 2	(KOL + OL + KS), (OP)	5.482	0.557	0.611	0.513	0.143
Model 3	(KOL + OL), (KS), (OP)	3.320	0.772	0.750	0.748	0.103
Model 4	(KOL), (OL), (KS), (OP) KOL3 and KOL6 were dropped	1.896	0.938	0.886	0.926	0.064

Note(s): All models are compared to the full measurement model in which 19 observable and latent variables remained (Model 4). KOL = knowledge-oriented leadership, OL = organizational learning, KS = knowledge sharing, OP = organizational performance

addition of dimensions and the removal of less important variables. The resultant model's eligibility for a further study was confirmed when it met established thresholds for key fit indices such as CMIN/DF, CFI, GFI, TLI, RMSEA and SRMR.

The measurement model (Model 4) reveals satisfactory convergent validity, which is evident through regression coefficients between observable and latent variables exceeding 0.60. The model exhibits robust discriminant validity with covariance coefficients among latent variables remaining below the established threshold of 0.80, affirming the suitability of the measures for further analyses (Figure 2).

The latent structures display strong internal consistency, as indicated by composite reliability scores exceeding 0.7 (Table 3). The latent constructs demonstrate moderate convergent validity, surpassing the threshold of 0.5 for average variance extracted (AVE). The AVE value of KOL is close to 0.5, which is an acceptable range for convergent validity (Fornell & Larcker, 1981). The constructs exhibit robust discriminant validity, with the maximum shared variance (MSV) being lower than AVE values. This is supported by the square root of AVE values that exceeds inter-construct correlations, reinforcing the distinctiveness of the constructs (Gaskin & Lim, 2017).

Discriminant validity was evaluated using the HTMT (Heterotrait-Monotrait Ratio) analysis (Table 3), verifying that several constructs are distinct by comparing their correlations (Manosuthi, Lee, & Han, 2020). All HTMT values fell below the generally recognized cutoff point of 0.85, indicating that the model's constructs are sufficiently distinct from one another to warrant additional examination (Voorhees et al., 2016).

4.3 Structural equation modeling

4.3.1 Direct effects. The authors examine the hypotheses through a path model using the maximum likelihood method within SEM. The model reveals that the squared multiple correlations (R^2) equate to 0.25 for OP, indicating that KOL, OL and KS contribute to explaining 25% of the variance observed in OP (Figure 3).

Table 4 shows a clear pattern in the structural relationships. First, KOL has a strong and significant positive effect on OL ($\beta = 0.672$, $t = 5.997$), and it also positively influences OP ($\beta = 0.461$, $t = 3.461$). Accordingly, *H1* and *H3* are supported. However, KOL does not exhibit a significant direct effect on KS, whereas *H2* is not supported. Similarly, the relationship between KS and OP is not statistically significant ($t = 1.683$, $p = 0.092$), leading to the rejection of *H5*. In contrast, OL demonstrates a meaningful positive impact on OP ($\beta = 0.216$, $t = 2.213$), providing support for *H4*. Accordingly, these findings suggest that while KOL enhances both OL processes and OP outcomes, its influence does not extend directly to individual KS, and KS itself does not translate into higher OP in this model.

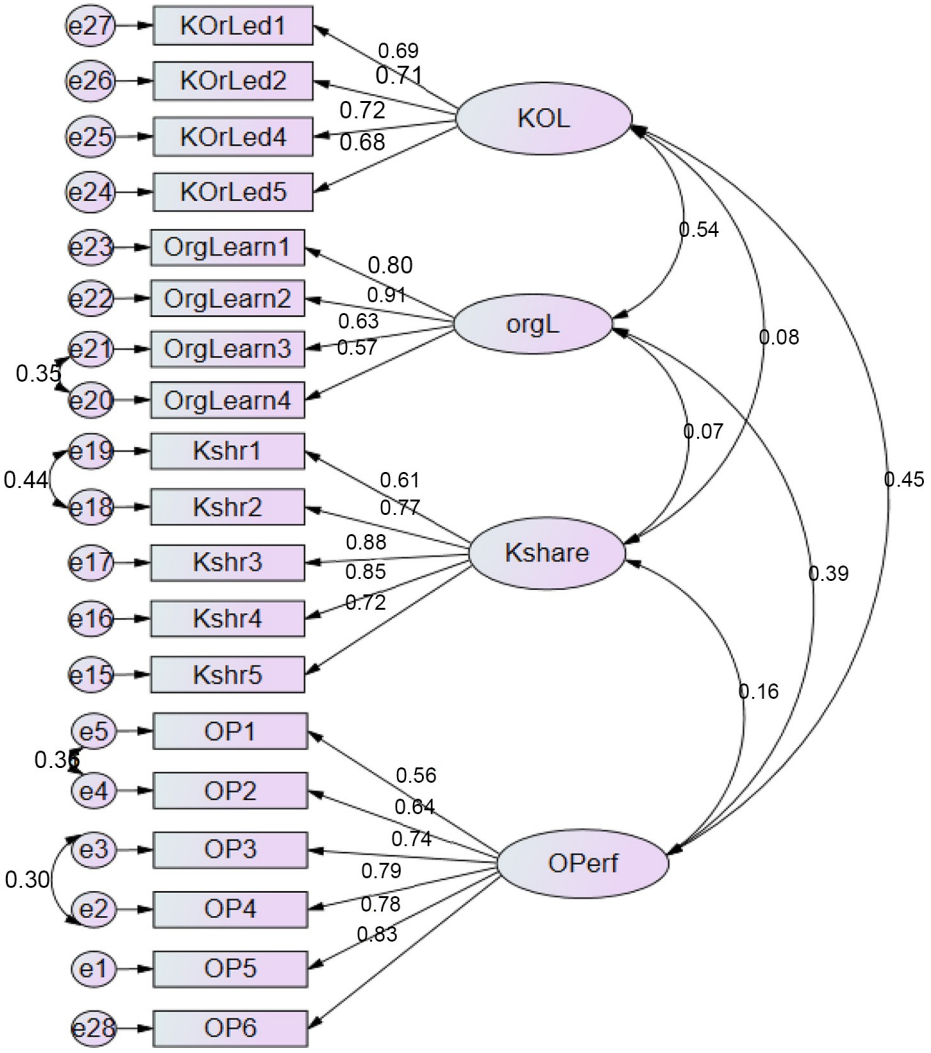

Figure 2. Confirmatory factor analysis for Model 6

Note: KOL = knowledge oriented leadership, OL = organizational learning, KS = knowledge sharing, OPer = organizational performance; (CMIN/DF = 1. 1.186; CFI = 0.938; GFI = 0.886; TLI = 0.926; RMSEA = 0.064)

To determine the extent to which ISO 9001 promotes OL, KS and OP, ISO 9001 has also been incorporated into the proposed model (Table 5). ISO 9001 certified businesses had a high OP (*H8c*: $p = 0.005$) and a significantly higher OL (*H8a*: $p = 0.003$), even though most respondents reported that they were unaware that the company had ISO 9001. There was no impact of ISO 9001 on the firms' KS practices (*H8b*: $p = 0.846$). As a result, while *H8b* is not supported, *H8a* and *H8c* were accepted.

Table 3. Convergent and discriminant validity

Factors	CR	AVE	MSV	KOL	KS	OL	OP	HTMT Analysis	KOL	KS	OL	OP
KOL	0.792	0.495	0.289	**0.698**								
KS	0.879	0.595	0.026	0.078	**0.771**				0.092			
OL	0.822	0.544	0.289	0.537***	0.073	**0.738**			0.598	0.155		
OP	0.871	0.534	0.207	0.455***	0.160*	0.389***	**0.731**		0.466	0.139	0.438	

Note(s): *KOL: Knowledge-Oriented Leadership, OL: Organizational Learning, KS: Knowledge Sharing, OP: Organizational Performance, CR = Composite Reliability; AVE = Average Variance Extracted; MSV = Maximum Shared Variance. In the lower triangular matrix (under the diagonal), the values represent the inter-construct correlations. The bolded diagonal values represent the square root of the AVE for each construct, used for the Fornell–Larcker discriminant validity test. In the HTMT section, the numbers indicate the Heterotrait–assess discriminant validity.* * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$

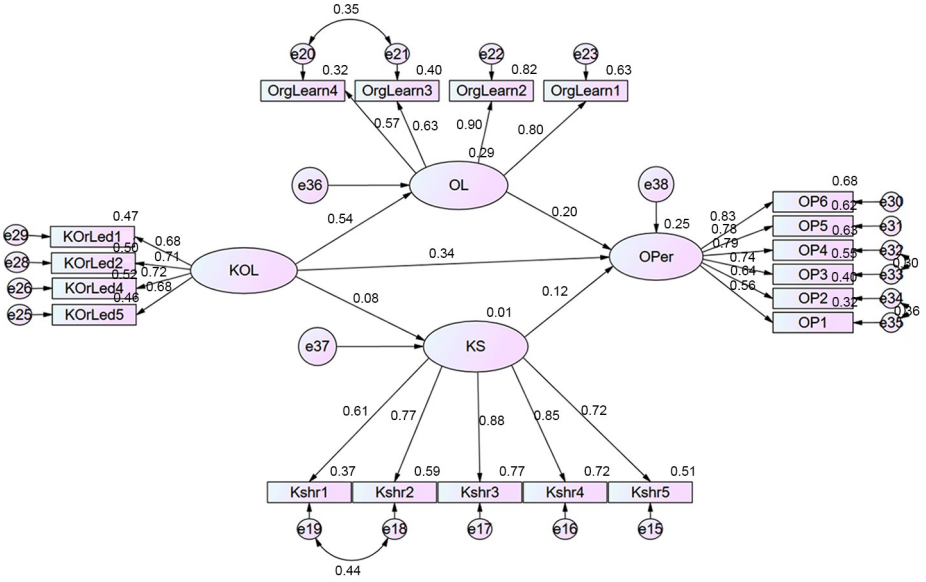

Figure 3. Structural equation modeling results of the hypothesized model

Note(s): (CMIN/DF = 1.884; CFI = 0.939; GFI = 0.887; TLI = 0.927; RMSEA = 0.064); KOL = knowledge-oriented leadership, OL = organizational learning, KS = knowledge sharing, OPer = organizational performance

4.3.2 Mediation effects. The authors used "specific indirect effects" to execute bootstrapping on the direct effects model, determining the mediating role of KS and OL (Table 4). The number of bootstrap samples was 2,000, and the bias-corrected confidence level was 90 (Gaskin & Lim, 2017). KS had no significant mediating role between KOL and OP ($\beta = 0.0169$, $p = 0.293$). OL significantly mediated the link between KOL and OP ($\beta = 0.150$, $p = 0.013$). *H7* was rejected, while *H6* was supported.

4.3.3 Moderation effects. The authors develop a novel interaction factor known as "Z." The interaction between the moderator variable (KS) and the independent variable (KOL) is assessed by calculating their Z values, which are then multiplied to create a new interaction variable that represents the combined impact of KS and KOL. This variable is then included as an exogenous factor in the structural model.

Table 4. Hypotheses results

Hypothesis	DV	Path direction	IV	S.E.	β	C.R.	p	Results
H1	OL	←	KOL	0.672	0.112	5.997	***	Supported
H2	KS	←	KOL	0.084	0.081	1.041	0.298	Not supported
H3	OP	←	KOL	0.461	0.133	3.472	***	Supported
H4	OP	←	OL	0.216	0.097	2.213	0.027	Supported
H5	OP	←	KS	0.159	0.094	1.683	0.092	Not supported
H6	OP	OL	KOL	0.0603	0.15	2.5	0.013	Supported
H7	OP	KS	KOL	0.016	0.0169	1.05	0.293	Not supported
H9	OP	KOL*KS	KOL	0.1076	−0.2747	−2.55	0.011	Supported

Note(s): S.E. denotes the standard error of the estimated coefficient; β is the unstandardized path coefficient, C.R. (critical ratio) is computed as estimate divided by S.E. and functions like a *t-values*; statistical significance is indicated by asterisks: ***$p < 0.001$. IV: independent variable and DV: dependent variable; KOL = knowledge-oriented leadership; OL = organizational learning; KS = knowledge sharing; OP = organizational performance

Table 5. ISO 9001 certification results

Variable	Mean	SD	p	Result
OL (*H8a*)	0.18	0.52	0.003	Supported
KS (*H8b*)	0.03	0.82	0.846	Not supported
OP (*H8c*)	3.79	0.55	0.005	Supported

Note(s): For each hypothesis (*H8a–H8c*), the independent variable (IV) is ISO 9001 certification status (certified vs not certified), and the dependent variable (DV) is the listed construct (OL, KS or OP). Mean denotes the average score of the DV associated with ISO 9001 certification (aligned with the reported comparison). Std. dev. is the corresponding standard deviation. p Reports the significance of the difference in the DV with respect to ISO 9001 certification; values below 0.05 indicate statistical significance. "Supported" indicates that ISO 9001 certification is associated with a significant difference in the DV (OL or OP here), whereas "Not Supported" indicates no significant difference (KS). Abbreviations: OL = organizational learning; KS = knowledge sharing; OP = organizational performance

KS significantly and negatively moderates the link between KOL and OP (C.R. of −2.274, $p = 0.011$), suggesting that KS significantly moderates the connections between KOL and OP (Table 4).

The moderating effect of KS on the relationship between KOL and OP is illustrated, using Jamovi software to create the graphics (Figure 4). KOL and KS are treated as independent variables, and their interaction is evaluated as the product variable. The moderation graph reveals that KS plays a role in dampening the initially positive relationship between KOL and OP. The plotted interaction demonstrates that KS attenuates the strength of the positive association between KOL and OP (Figure 4), aligning with the proposed moderation effect of KS on the KOL–OP relationship (*H9*). *H9* is accepted.

5. Discussion

The results of the KOL that influences OL in this study are evident in studies by Cabrera and Cabrera (2005), Gürlek and Cemberci (2020), Sadq et al. (2020) and Jia et al. (2023). KOL builds a culture of experimentation and intellectual curiosity aligns with a learning organization, where knowledge flows freely across the organizational hierarchy and fosters innovation (Senge, 1990).

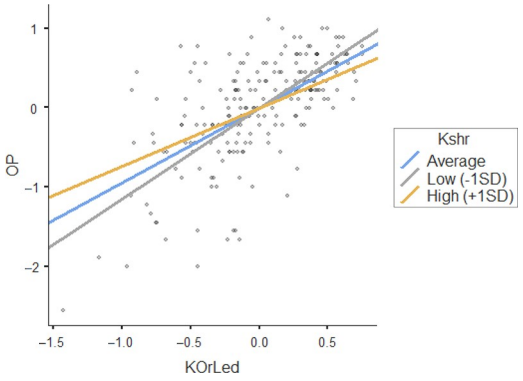

Figure 4. Two-way interaction effects of KS on OP

Note: KOrLed = knowledge-oriented leadership, Kshr = knowledge sharing, and OP = organizational performance

The current study's lack of a significant correlation between KOL and KS contradicts the findings of studies by Argote and Miron-Spektor (2011), Jia et al. (2023), Chughtai and Khan (2024), Donate and de Pablo (2015), Jiang, Flores, Leelawong, and Manz (2016) and Zhang and Cheng (2015), which accepted that KS-oriented leaders foster an environment of psychological safety and trust and encourages frank communication. Budur, Demirer, and Rashid (2023) showed that trust, effective communication and a common goal influence a positive environment for KS.

The current study's significant positive correlation between KOL and OP is consistent with works by Argote and Miron-Spektor (2011), Jia et al. (2023), Malik et al. (2023), Shamim et al. (2019) and Zia (2020), prioritizing skill development, training, information exchange and creativity that enhance OP. KOL encourages cooperation and communication, which enhances team dynamics and innovative problem-solving abilities (Banmairuroy *et al.*, 2022; Mariam et al., 2022). Farooq et al. (2021), Rehman and Iqbal (2020) and Zia (2020) showed that learning and experimentation are what lead to good returns on investment, employee happiness, productivity and innovation.

The present study found a positive correlation between OL and OP, which is supported by research by Argote and Miron-Spektor (2011), Giniuniene and Jurksiene (2015), Mohlin (2023), Ning & Li, (2018), Patky (2020), Belle (2016), Hendri, (2019) and Wilkens et al. (2004). The above research showed how OL could improve teamwork, resource alignment, creativity, judgment, problem solving and flexibility in reaction to market swings, leading to high OP.

Research findings by Argote and Miron-Spektor (2011), Chang, Liao, and Wu (2017), Jiang et al. (2016), Malik & Garg (2017) and Shamim et al. (2019), which emphasized collaboration, problem-solving and adaptability that lead to effectiveness conflict with the current study's lack of an association between KS and OP.

The significant partial relationship between KOL and OP-mediated OL in the current study is consistent with a relationship between leadership and novelty at the individual and group levels mediated by a learning culture found in studies by Hsiao and Chang (2011), Jia et al. (2023), Noruzy, Dalfard, Azhdari, Nazari-Shirkouhi, and Rezazadeh (2013) and Rehman et al. (2019).

The absence of a relationship between KOL and OP mediated by KS in the current study contrasts with the relationship between innovative knowledge management and OP partially

and significantly mediated by KS in studies by Rehman and Iqbal (2020) and Zhang, Li, Liu, and Wang (2023).

The current work's conclusion that ISO 9001, OL and OP have a positive relationship is consistent with studies by Heras-Saizarbitoria et al. (2015), Lakhal (2014), Manders et al. (2016), Martínez-Costa et al. (2009), Neyestani and Juanzon (2017), Psomas and Jaca (2016), Sampaio et al. (2012) and Vetchagool et al. (2021) that show a positive relationship between quality management systems, learning cycles, knowledge creation and codification, skill development, operational consistency, service quality and organizational adaptation and effectiveness. The findings of Demir et al. (2023), Cormican et al. (2021), Martínez-Costa *et al*. (2009) and Manders et al. (2016) work, however, contradict the current study's finding that there is no relationship between information exchange, systematic communication and ISO 9001.

KS moderates the link between KOL and OP (Chughtai & Khan, 2024; Le et al., 2018; Zhang, Sun, Jiang, & Zhang, 2019) is consistent with the findings in the current study.

6. Implications

6.1 Theoretical implications

KOL is a critical enabling condition of OL, acting as a micro-foundation, knowledge generation accelerator and cross-level conversion mechanism, particularly given Iraq's high uncertainty and institutionally constrained technology environments. Thus, it improves learning-organization theory (LOT) by upgrading leadership from a supportive to a conceptually central driver. KOL does not trigger KS since it is driven by perceived risk, power and psychological safety rather than learning purpose. Thus, leadership is not a micro-foundation of KS in high-risk situations, as it separates learning from sharing, incorporates political and safety procedures into LOT, and establishes a boundary requirement for knowledge development. KOL is a direct and compensating micro-foundation of OP that operates through leader-enabled learning and knowledge usage rather than open KS, enhancing LOT by distinguishing knowledge from learning-based effectiveness and positioning KOL as an effectiveness-generating leadership. Furthermore, OL improves OP by allowing for rapid adaptation, routine reconfiguration and problem-solving, establishing OL as an operational performance capacity in LOT. OP is generated by OL rather than KS, which refines LOT by isolating KS from learning-based effectiveness and serves as a boundary condition for KS's presumed performance value.

OL partially mediates the link between KOL and OP, implying that a significant portion of leadership performance impact is achieved through knowledge orchestration, coordination and expert-driven decisions, transforming LOT from a learning mediation model to a dual-path leadership effectiveness model and positioning KOL as a learning enabler. KS does not mediate the link between KOL and OP, suggesting that leadership effects are communicated through OL and direct knowledge orchestration rather than interpersonal KS, providing a boundary condition in LOT. ISO 9001 serves as a formal learning infrastructure that simplifies OL and strengthens OP, expanding LOT by incorporating learning into formal management systems and emphasizing learning-driven effectiveness as a structural driver.

The fact that ISO 9001 does not support KS suggests that it does not establish social and psychological circumstances for KS, implying that KS systems should be treated as unique organizational architectures and hypothesized as structural learning mechanisms.

The negative moderating function of KOL in the link between KOL and OP shows that KS can act as a coordination-cost and decision-friction mechanism, weakening KOL's positive effect on OP, shifting LOT away from the more sharing is always better logic and toward a negative role of KS in leadership–performance relationships.

6.2 *Practical implications*

Iraq's Internet and telecommunications sectors require managers who value creativity, innovation, training, skill development, research, curiosity, taking risks, harmony, decentralization and ongoing adaptive and generative learning at the individual, group, organizational and inter-organizational levels (Jones, 2013; Senge, 1990). Leaders can improve financial, strategic and operational effectiveness by designing processes that challenge the beliefs that drive activities to achieve goals (David, 2007; Treacy & Wiersema, 2007). Nonetheless, such innovative leadership has no effect on the development and utilization of information sharing platforms, resulting in exceptional performance.

Given the digital transformation and post-COVID leadership in developing countries, creative leaders should promote human rights and social justice (job security and health) in the workplace. It is best to avoid discriminating against someone based on their age, gender, ethnicity or disability. Equal reward for equal labor must be preserved. Workplace initiatives such as independent work groups, flexible work schedules and family-friendly workplaces should be introduced to increase workplace engagement and employee happiness (Cavanaugh et al., 1981; Jones, 1991; Susanto et al., 2022).

A learning culture requires leaders who can build feedback systems and growth opportunities that increase task performance, issue solving, idea generation and retention, ultimately improving firm operations and procedures. Leaders should recognize the influence that varied learning levels have on their staff and encourage them to reconsider their goals, completely support their ideas and build the ability to accept constructive individual dispute. Workers should be aware of the underlying assumptions that shape their attitudes and conduct. Leaders must trust their staff and provide them the freedom to carry out their responsibilities. Employees should participate in organizational and group thinking processes to solve challenges and develop shared future visions that benefit all stakeholders. A collaborative culture may thereby increase the link between change-oriented leadership and business performance (Argyris & Schon, 1978; Senge, 1990).

Though they enable the pooling of skills and abilities to address challenges and provide group members with greater opportunities to engage with and learn from one another over time, knowledge-sharing technologies cannot help innovative leaders achieve effectiveness. Bureaucracy, hierarchy and an inert culture are hallmarks of Iraqi enterprises that usually lack trust and effective digital communication channels. Employees are reluctant to freely share thoughts, information and experience, which impede knowledge combination and internalization (Nonaka & Takeuchi, 1995). Likewise, the impact of information exchange on success is diminished by information systems that are characterized by lower capacity networks, limited fiber deployment, frequent interruptions in information transmission, employee unrest, ineffective government regulatory bodies, high infrastructure upgrade costs, a lack of education and new skills, an unstable power supply, poor service and Internet speed and frequent blocking of Internet services due to security, privacy and censorship concerns (Alfaiza et al., 2021; Hamid & Al-Tabtabae, 2022; International Trade Administration, 2021). Moreover, the study showed that while a quality management system will improve learning and effectiveness, ISO 9001-certified companies will not contribute to the development of knowledge archiving and information exchange platforms. Thus, ISO 9001-certified companies should either invite ISO 9001 experts to share their insights with employees (externalization) or conduct awareness campaigns through meetings to foster explicit knowledge (combination) (Nonaka & Takeuchi, 1995). This system should compare current processes with ISO 9001 requirements, develop an implementation plan, create policies and procedures, train staff and enforce compliance, verify effectiveness and evaluate customer-oriented performance and legal requirements (Goetsch & Davis, 2012).

The study demonstrates that employee KS diminishes the positive benefits of creative leadership on organizational success. Excessive information exchange could harm leadership effectiveness by reducing decision-making clarity or fostering reliance on peer advice over strategic direction. Iraqi firms lack incentives and digital platforms for capturing, storing, retrieving, sharing and converting knowledge (Anwar et al., 2018; Sadq et al., 2020). Employees are unwilling to share information and change because they fear losing their positions and authority, and they are also reticent to admit their mistakes. Policies lack clarity regarding what can be disclosed both internally and outside. Employees can perform tasks, but they cannot apply their experience to strategy (AlSabah et al., 2021). Companies have many locations and different rules in different cities due to institutional and geographic fragmentation, resulting in irregular networking and communication delays (International Trade Administration, 2021). Thus, the Iraqi government should develop standardized, digital and user-friendly knowledge management systems; foster departmental trust and cooperation; pay and symbolically reward staff members who contribute to knowledge bases; clarify KS laws and policies; and provide training in communication, documentation and team cohesion, thereby reducing the dampening effect of information sharing and increasing its strategic value.

7. Limitations and future studies

The study found that *H2*, *H5*, *H7* and *H8b* were not supported, requiring additional consideration. The study fails to detect context-specific effects of mediation and moderation. The lack of support for *H2* and *H5* could be attributed to insufficient statistical power to capture complex behavioral dynamics in subgroups with varying levels of leadership exposure or access to digital tools. Furthermore, data collection during COVID-19 influenced organizational behavior. The shift to remote workers, increased volatility and a rising reliance on digital platforms may destabilize traditional leadership styles and knowledge-sharing processes. Reduced face-to-face interactions and trust may make *H2* unsupportable. Different methods of motivation and participation may have had an impact o*n H5* and *H7*. Given that 59.5% of respondents were unaware of their company's ISO 9001 status, *H8b* may represent insufficient visibility or implementation of quality systems in virtual environments, resulting in time-constrained organizational realities. The study's reliance on self-reported survey data may result in common method bias due to participant bias. To address these limitations and build on current findings, future studies could include larger and more diverse samples across sectors to improve generalizability and statistical robustness, track changes in KOL, KS and OP over time to differentiate temporary pandemic effects from long-term organizational patterns, and take gender, position, digital literacy and online marketing exposure into account to better isolate causal relationships. Future research should examine how intranets, collaborative tools and AI-driven systems influence learning and decision-making performance, and how leadership effects are mediated in post-pandemic environments. Qualitative research should be conducted to better understand how inertia, hierarchy and trust deficiencies hinder KS and OL. Employee awareness, training and the incorporation of quality practices into daily operations should be assessed to better understand their impact on KS and OP.

8. Conclusion

The study showed that innovative leaders may create an adaptable culture and flexible structure by balancing creativity, learning, experimenting, rewarding, risk-taking and problem-solving, resulting in a competitive advantage in knowledge-driven industries. However, bureaucracy and hierarchy undermine information exchange and trust. Thus, firms may encourage fluid boundaries and no status inequalities between units, self-directed teams, constantly modified responsibilities, discretion to job holders, open channels of communication and widespread information sharing (Jones, 2013). Furthermore, issues with infrastructure,

technology, regulation and behavior reduce information sharing effectiveness. Therefore, businesses may pressurize the government to create a domestic technology ecosystem, standardize government IT systems, increase power supply, enact digital security legislation, build contemporary fiber-optic links and launch data science training programs. Likewise, sustaining organizational success necessitates supporting the continuous regeneration of knowledge from diverse abilities and ensuring service quality and customer satisfaction.

Innovative leaders can improve knowledge development and retention, hence improving the infrastructure and service quality of Internet and telecommunications companies. They could avoid over commitment to preexisting solutions, lowering the likelihood of misinterpreting a situation, assisting employees in problem-solving, allowing them to learn from their mistakes, providing opportunities for employee growth, taking employee ideas seriously when they solve problems, rewarding risk-taking and ensuring that feedback is secure.

Furthermore, innovative leaders who facilitate employee interactions cannot ensure technical advancement or efficacy. Similarly, installing quality management systems does not guarantee information exchange system efficiency in knowledge-intensive businesses. Employees that lack cognitive capacity, confidence and drive may be unable to properly absorb new material, appreciate the benefits of collaborative learning, or rely on their expertise. Employees do not view information sharing as a mutually advantageous transaction. Consequently, the quality and frequency of KS behavior deteriorate. Thus, training should enhance employees' learning capacity so that they can fully absorb information content, recognize the advantages of group learning, feel more secure in their knowledge and benefit from sharing.

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Corresponding author

Taylan Budur can be contacted at: taylan.budur@tiu.edu.iq