From Cultural Clashes to Creative Solutions: The Impact of Leaders Cultural Intelligence on Employees Problem-Solving Skills

Imran Khan [1,] Muhammad Usman [2]

[1] Ph.D. Scholar Department of Commerce and Management Sciences University of Malakand.
[2] Assistant Professor Department of Commerce and Management Sciences University of Malakand.
Muhammad Usman: Corresponding Author

Abstract

This study empirically examines how Leader Cultural Intelligence (LCI) affects problem-solving (PS) of employees and it also investigates psychological safety as mediator between LCI and employee PS. It also investigates cognitive diversity's moderating role on this mediated pathway. Using survey data collected from 400 employees operating in telecommunication contact centers in Pakistan, the results confirm a positive relationship between LCI and employees' problem-solving while psychological safety mediates this relationship. In addition, the study unveils cognitive diversity as a moderator that adjusts the relationship between psychological safety and problem-solving skills. These contributions enhance theoretical discussion as well as managerial practice, especially in multicultural organizational environments where different national teams need to work closely together.

Keywords: Leaders cultural intelligence, Psychological Safety, Cognitive diversity, Problem-Solving, Pakistan

Introduction

Managing problems is a crucial yet challenging aspect of a leader's role. Effective resolution necessitates choosing the best approach for each situation. In the global economy, businesses must collaborate with employees from diverse cultural backgrounds, which increases the time spent on problem-solving. As cross-cultural interactions rise, the ability to relate to and resolve issues across cultural boundaries has become essential. Cultural intelligence is widely recognized as a crucial skill for effectively managing and leveraging cultural diversity (Early & Gardner, 2005). Cultural intelligence is a form of cultural competence that entails the ability to function effectively in diverse cultural environments by fostering understanding, adaptation, communication, and coordination (Adair, Hideg, & Spence, 2013). Cultural intelligence consists of four key components: metacognitive intelligence, cognitive intelligence, behavioral

intelligence, and motivational intelligence (Ang, Dyne, & Koh, 2006). Team members with strong motivational CQ are better equipped to access and process the vast information and knowledge within a diverse team, leading to innovative problem-solving and increased creativity (Richter, Martin, Hansen, Taras, & Alon, 2021). The growing diversity in today's workplaces has underscored the importance of cultural intelligence, a relatively new field of study. Leaders with high cultural intelligence can more effectively adjust their behavior and work strategies to meet the unique demands of various cultural and social contexts (Van Dyne, Ang, & Koh, 2015). Cosain, Solutan, and Sarno's (2022) analysis reveals that the motivational and behavioral aspects of cultural intelligence significantly and positively influence conflict management practices in culturally diverse organizations. Leaders with high levels of cultural intelligence can overcome their natural tendencies towards routine responses, exhibiting flexibility in their behavior across various situations. This adaptability may involve adjusting communication approaches and negotiating strategies, which can enhance problem resolution (Molinsky, 2007). Stallter (2009) proposed that tackling challenges in unfamiliar contexts frequently requires resources beyond our conventional expertise. As we engage with cognitive, volitional, and behavioral dimensions, our goal is to achieve culturally relevant solutions that resonate with the host culture. Engle and Delohery (2016) found a significant positive correlation between motivational cultural intelligence and behavioral cultural intelligence, and successful cross-cultural problem-solving. Similarly, Engle, Elahee, and Tatoglu (2013) confirmed a positive relationship between cultural intelligence and effective problem-solving strategies in international business negotiations. While extensive research has been conducted on the relationship between leaders' cultural intelligence and problem-solving in multinational and globally diverse settings, there has been insufficient attention given to how leaders' cultural intelligence impacts intra-nationally diverse workforce in telecommunication contact centers in Pakistan.

Our study also aims to investigate how psychological safety affects the link between a leader's cultural intelligence and employees' problem-solving behaviors within a diverse intra-national workforce. Psychological safety involves how individuals perceive the outcomes of taking interpersonal risks in a given setting (Edmondson, 1999). In rapidly evolving environments, psychological safety enhances employees' confidence and sense of security, thereby facilitating more effective contributions at work (Edmondson & Lei, 2014). A psychologically safe environment drives employees to invest more in their performance (Obrenovic et al., 2020) and enhances their learning behavior and performance (Wang et al., 2021). Employees who feel secure are more likely to engage in creative work (Newman et al., 2017). Leaders play a key role in maintaining this safety, especially during post-acquisition integration (Nicholson et al., 2016). Frazier et al. (2017) highlighted the need for more research on how cultural factors impact psychological safety. While psychological safety's mediating role has been studied with various variables, its effect on the relationship between leader cultural intelligence and problem-solving remains underexplored. Our study examines how psychological safety mediates this relationship within intra-nationally diverse contexts.

Theoretical Development
Leader Cultural Intelligence and Problem-Solving
Cultural intelligence is defined as the ability to recognize, interpret, and respond effectively to unfamiliar or ambiguous social and cultural cues, especially in diverse and novel situations (Ang & Inkpen, 2008). According to Fang, Schei, and Selart (2018), cultural intelligence is crucial for expatriates, managers, and others involved in cross-cultural interactions to succeed in a

globalized environment. Enhancing cultural competence improves the ability to communicate, understand, and engage with individuals from various cultural backgrounds (Heath, Martin, & Shahisaman, 2017). This concept encompasses four key elements: awareness of one's own cultural perspective, attitudes towards cultural differences, knowledge of diverse cultural practices and worldviews, and cross-cultural skills. According to Cosain, Solutan, and Sarno (2022), the motivational and behavioral components of cultural intelligence significantly and positively influence conflict management practices in culturally diverse organizations. Organizations aiming for multicultural effectiveness should prioritize the development of leaders' cross-cultural competencies, such as cultural intelligence (Rockstuhl et al., 2011). Cultural intelligence is crucial for building trust and cohesion within multinational teams, which are necessary for effective group coordination, efficacy, and innovative problem-solving (Moynihan, Peterson, & Earley, 2006). It is related with intelligence theories like practical and multiple intelligences (Hasanuddin et al., 2022; Sternberg & Grigorenko, 2000), and is conceptually differentiated from other types of intelligence, such as emotional intelligence (EQ) and social intelligence (SI) (Ang & Inkpen, 2008; Elenkov & Manev, 2009; Kim et al., 2008). Cultural intelligence (CQ) is a collection of abilities and qualities needed for adapting and performing in different cultural settings. As Eken, Ozturgut and Craven (2014) argued that "leaders in globalization settings collaborate in a multicultural world, contributing that mutual respect and understanding are critical. There are competences associated with the cultural intelligence framework that have been shown to enhance innovation (Leung et al., 2008), improve team coordination (Janssens & Brett, 2006), and leadership (Ng, Van Dyne, & Ang, 2009). Furthermore, it encompasses Conflict Resolution Mechanisms (Chen et al., 2014) and the capabilities to appropriately handle professional issues both in a domestic and a multicultural context. Leaders with high levels of cultural intelligence can move beyond their natural tendencies toward routine responses, exhibiting flexibility in their behavior across various situations. This adaptability may involve adjusting communication strategies and adapting to different negotiation contexts, thereby facilitating effective problem resolution (Molinsky, 2007). International human resource managers should emphasize the development of individuals' cognitive, motivational, and behavioral competencies in cultural intelligence (Andresen & Bergdolt, 2017). Carmeli et al. (2013) found that leader supportive behaviors are directly and indirectly linked, through both internal and external knowledge sharing, to employees' ability to engage in creative problem-solving. Cross-cultural and international experiences can be utilized to develop cognitive components such as cross-cultural knowledge, as well as the motivational and behavioral aspects of cultural intelligence that are crucial for problem-solving. It has been proposed that organizational cultural patterns, established by leadership, foster a common set of fundamental assumptions (Schein, 2010). This shared understanding is developed by groups through processes of problem-solving, external adaptation, and internal integration, which may guide new members in how they perceive, think about, and address these issues.

Hypothesis 1: Leader cultural intelligence has a positive influence on problem solving.

Psychological Safety as a Mediator

Psychological safety refers to employees' perception of being safe when engaging in tasks that involve risk in the workplace (Edmondson & Lei, 2014). The development and implementation of innovative or unconventional ideas involve inherent risks and require a supportive environment (Edmondson, 1999). A work environment that is supportive and fosters relationship-building is essential for cultivating a more innovative workforce (Binyamin,

Friedman, & Carmeli, 2018). Kessel et al. (2012) assert that fostering an environment conducive to creative problem-solving and continuous operational improvement requires ensuring interpersonal risk-taking, including activities such as raising questions, voicing concerns, sharing ideas, and experimenting with new methods. Similarly, Carmeli et al. (2013) argue that establishing a psychologically safe atmosphere, characterized by open deliberation, constructive feedback exchange, critical evaluation, and expression of dissatisfaction, is vital for leaders as it promotes innovative problem-solving and enhances organizational competitiveness. Moreover, Erez et al. (2013) stress the significance of psychological safety to the functioning of cross-cultural teams by reducing conflict and misunderstanding between members. In psychologically safe and trust based organizations, employees will be more motivated to take risks, express their ideas and put forth their full participation without the fear of blame or adverse reactions (Almahri & Wahab, 2023).Leaders who comprehend how they can contribute to the development of team-based psychological safety foster trust in open communication and exchange of information and collaboration to solve problems with their team (O'Donovan & McAuliffe, 2020). This, in turn, supports open dialogue, collaboration and innovations, as creativity and problem-solving abilities enhance. A supportive culture where the emphasis is on psychological safety, supports the freedom to express ideas, to be responsible of decision making and creates a confidence to take up the initiative, change or discuss solutions to problems (Singh & Sarkar, 2019). However, if there are leaders intentionally striving to involve employees in problem-solving and innovation, they must reconsider their current leadership approaches and be ready to employ paradoxical strategies at their convenience, paving the way forward for trust and psychological safety within the organization (Oh et al., 2023).

In the digital age, cultural intelligence (CQ) is essential for effective planning, communication, understanding, and leadership in diverse cultural environments (Ruth & Netzer, 2020). Studies on the psychological effects of cultural intelligence (CQ) suggest that it significantly reduces tension and stress for individuals working in multicultural contexts (Van Dyne, Ang, & Tan, 2016). When employees operate within a psychologically supportive environment, they are able to enhance their knowledge, refine their skills, and optimize work processes (Burrell & Brauner, 2021). Leaders foster trust and openness within teams by actively listening, promoting open communication, and offering support, creating a culture where employees feel safe to share ideas, voice concerns, and take risks without fear of negative consequences (Munawar, Yousaf, Ahmed, & Rehman, 2024). A strong leader-employee relationship enhances psychological safety, encouraging the generation, support, and execution of innovative ideas (Carmeli, Reiter-Palmon, & Ziv, 2010). Leaders play a crucial role in creating an environment that balances performance expectations with psychological safety, as this balance helps teams enter a "learning zone" that maximizes performance (Kim, Lee, & Connerton, 2020). Based on this understanding, we propose the following:

Hypothesis 2: Psychological Safety mediates the relationship between leader's cultural intelligence competencies and employee's problem solving.

Moderating Role of Cognitive Diversity
Cognitive diversity refers to the degree to which team members vary in their perspectives and ways of thinking about a given situation (Nguyen et al., 2022). The diversity of perspectives and knowledge within a team highlights the critical role of cognitive diversity (Shin et al., 2012). The value-in-diversity approach suggests that teams with varied knowledge and viewpoints have access to a wider pool of relevant expertise than homogeneous teams. Cognitive diversity is an

intangible asset that plays a crucial role in how managers and employees leverage the collective knowledge and experiences within a diverse group (Younis, 2019). The diversity of workforce knowledge and experiences has been shown to positively influence team creativity and innovation (Wang, Kim, & Lee, 2016; Shin, Kim, Lee, & Bian, 2012). Expanding the range of social connections among individuals in the workplace facilitates the exchange of a broader spectrum of knowledge, thereby enriching the creative resources essential for maintaining an organization's competitive advantage (Huang & Liu, 2015; Makkonen, 2022). Cognitive diversity, which includes differences in beliefs, values, thinking styles, skills, knowledge, experience, and expertise among group members (Chow, 2018), emphasizes the significance of demographic diversity in the workforce. Cognitive diversity is essential in organizations as it introduces fresh perspectives, enhances decision-making, improves problem-solving, and fosters innovation and creativity, ultimately driving superior performance and adaptability in a complex global environment, giving them a competitive edge (Dongery & Rokade, 2020). Reynolds and Lewis (2017) stressed the importance of cognitive diversity in navigating complex and uncertain situations, emphasizing the need for individuals to utilize diverse thinking styles to tackle intricate problems. Lamm et al. (2012) suggested that individuals with cognitive diversity contribute unique perspectives, ideas, and suggestions, offering greater resources for solving complex problems. Social Cognitive Learning Theory, as proposed by Bandura (1986), provides insight into the dynamic interaction between individuals and their environment, highlighting how leaders' behaviors significantly influence employee's problem-solving skills. Leaders serve as role models, shaping employee actions and attitudes through observed behaviors and decision-making approaches. In culturally diverse settings, such as telecommunication contact centers, employees are inclined to mirror the inclusive and innovative behaviors of leaders who demonstrate high Cultural Intelligence (CQ). This emulation fosters a work environment that encourages decision making and enhances psychological safety. Based on this understanding, we propose the following hypotheses:

Hypothesis 3: Cognitive diversity moderates the relationship between leader's cultural intelligence competencies and employee's problem solving.

Theoretical Framework
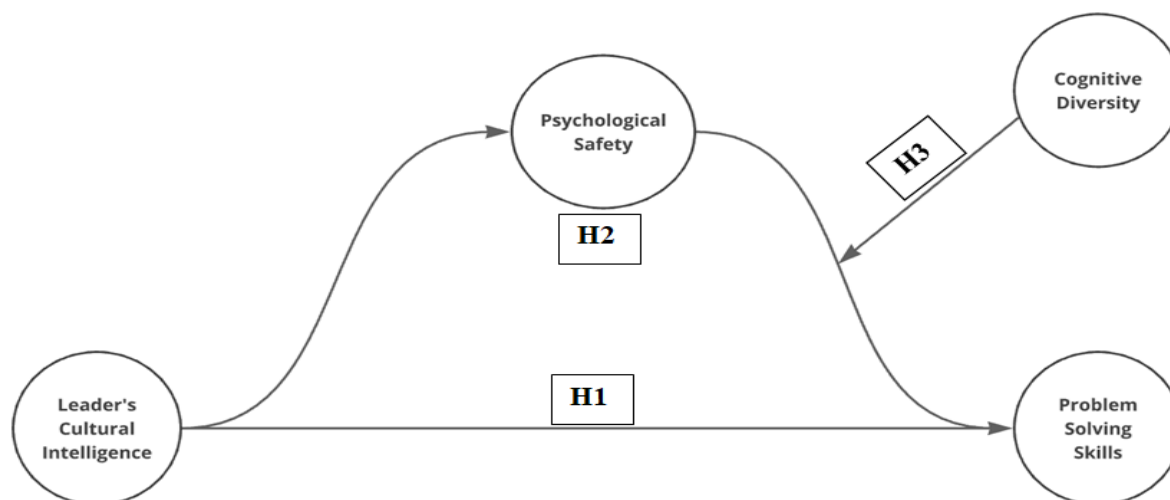
Methods
Sample and Procedure
The research participants were employees working in telecommunication contact centers based in Islamabad and Rawalpindi Pakistan. Access to these participants was ensured through personal and professional networks.

Table 1 presents the frequency distribution of sample statistics for the respondents in this study. Surveys were administered to employees working in team-based settings within telecommunication contact centers. Each survey included a cover letter detailing the study's purpose and scope, emphasizing the confidentiality and anonymity of responses, and highlighting the voluntary nature of participation. Of the 700 surveys distributed, 400 completed responses were received, yielding a response rate of 57.14 percent. Among the respondents, 87.5 percent were between the ages of 24 and 30, with males comprising 67 percent of this group. Educational qualifications ranged from bachelor's to master's degrees, with most participants having 2 to 5 years of work experience. Additionally, the sample encompassed a diverse mix of occupational roles, ages, ethnicities, and educational backgrounds, all engaged in collaborative team environments within their organizations.

Table 1 Demographic Information

Particular	Description	Frequency	Percentage
Gender	Male	268	67.0
	Female	132	33.0
	Total	400	100.0
Age (in years)	24y to 30y	350	87.5
	31y to 36y	50	12.5
	37y to 43y	0	0
	44y to 50y	0	0
	50+	0	0
	Total	400	100
Qualification	Bachelor	328	82.0
	Master	62	15.5
	M.Phill/MS	9	2.3
	Doctoral	1	.3
	Total	400	100
Experience (in years)	2y to 5y	292	73.0
	6y to 9y	108	27.0
	10y to 13y	0	0
	14y to 17y	0	0
	18y+	0	0
	Total	400	100
Ethnicity	Punjabis	200	50.0
	Pashtuns	116	29.0

Sindhis	67	16.8
Gilgit-Baltistan	17	4.3
Total	400	100

Measure

Data for the study were collected using a self-report questionnaire. Specifically, participants rated their cultural intelligence on a 7-point Likert scale, from 1 ("strongly disagree") to 7 ("strongly agree"). Problem-solving was evaluated based on a 5-point scale from 1 (Strongly Disagree) to 5 (Strongly Agree). Psychological safety was measured using a 5-point Likert scale in which 1 mean strongly disagree and 5 means strongly agree. Additionally, moderating variable cognitive diversity was measured using a 7-points scale from 1 (To an Extremely Small Extant) to 7 (To an Extremely Large Extant). For all the scales used, higher scores indicated greater levels of the trait or characteristic measured. English is a compulsory and foundational subject taught from grade school onward in Pakistan and the main language of instruction in all universities. Except for entry-level jobs with low educational qualifications, it is fair to assume the employed have reading comprehension of English in Pakistan. Thus, considering the features of the sample population, translation of the questionnaire and writing it in the native language were not necessary.

Cultural Intelligence of the Leader: Cultural intelligence (independent variable) was assessed with a 20-item questionnaire adopted from Dyne et al. (2015). The tool consists of four subscales: metacognitive (four items), cognitive (six items), motivational (five items), and behavioral (five items). Participants rated their agreement with each item on a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). (Example items for each of the subscales include: Metacognitive: "This person is conscious of the cultural knowledge he/she uses when interacting with people from different cultural backgrounds". Cognitive: "This person knows the legal and economic systems of other cultures". Motivational: "This person enjoys interacting with people from different cultures". Behavioral: "This person alters his/her facial expressions when a cross-cultural situation requires it". A higher score of each of the subscale indicate higher level of cultural intelligence on the same submission dimension.

Problem-Solving: A scale developed by Lohman (2004), containing 28 items, was used to assess the problem-solving abilities of employees, which had a reliability coefficient above 0.70. Sample items of the scale: "I promptly prioritize important problems at work" and "I proficiently implement solutions in an effective manner". This measure was chosen based on literature that supports its validity in measuring problem solving skills and meets the needs of the study.

Psychological Safety: Psychological safety as a mediating factor was also assessed using a self-reported scale consisting of seven items (Edmondson, 1999). Using a 5-point Likert scale, the instrument scored from 1 (Strongly Disagree) through 5 (Strongly Agree). Sample items included: as "I felt it was safe to take risks within this team", ".No one on this team would have intentionally acted in a manner that hindered my contributions", and "While collaborating with members of this team, my unique skills and talents were acknowledged and utilized". This instrument was chosen based on the focus of the current study and the established validity and reliability.

Cognitive Diversity: The moderating variable was assessed on the basis of a questionnaire created by Van der Vegt and Janssen (2003). Previous studies reported internal reliability of the

instrument as 0.81 for four items. Cognitive group diversity was measured by asking employees to report their workgroup attributes. Each item was scored on seven-point Likert-type scale ranging from "to a very small extent" (1) to "to a very large extent" (7). Example items included statements such as, "To what degree do members of the workgroup vary in their modes of thinking?" and "To what extent do members of the workgroup differ in their perspectives on what is morally right or wrong?". This scale was chosen based on its previously demonstrated reliability as well as its relevance to the research aims in measuring cognitive diversity.

Measurement Model
The study used the PLS-SEM method including the PLS algorithm when applying bootstrapped and blindfolded processes using the well-known software SmartPLS (Hair et al., 2019; Qalati et al., 2021). This method was selected because it gives a detail analysis of performance variability (Fan et al., 2021), it is also appropriate for small sample size (Hair et al., 2019), further this method is easy to use and has been strongly recommended as an analytic method capable of handling complex models (Fan et al., 2021; Qalati et al,. 2021). After these test for descriptive statistics and some data cleansing test were performed using SPSS, such as Harman's single-factor test to test for common method bias.

Common Method Bias
To test for data bias, we used two established techniques: Harman's single-factor test, and full collinearity. The results of Harman's one-factor test showed that the extracted variance was only 47.99%, lower than the recommended 50% threshold by Podsakoff et al. (2003), indicating that common method bias was no problem. We also evaluated collinearity using the full collinearity approach, specifically the inner variance inflation factor (VIF), within the PLS-SEM framework through SmartPLS. The resultant inner VIF values fell between 1.00 and 3.30, which were all acceptable and below the ideal threshold of 3.33 (Qalati et al., 2021; Hair et al., 2019) (Table 2). The dataset was considered suitable for further analysis since these findings**.**

Convergent Validity and Reliability
The reliability and validity of study variables are shown in Table 2. SmartPLS was applied for the analysis of the measurement model using the Partial Least Squares (PLS) algorithm procedure. Factor loading of all study variables were examined the results of factor loadings indicate that all values being > 0.7 (Alghazi et al., 2021) were accepted. The convergent validity for several reliability and validity measures, such as Cronbach's alpha, rho_A, average variance extracted (AVE), composite reliability (CR) and confirmatory factor analysis (CFA), was conducted. The results provided evidence that was beyond meeting or exceeding the cut-off points, indicating the acceptability of the measurement model. Focusing especially on Henseler et al. (2016) the signs of convergent validity were the values: rho_A > 0.7, CR > 0.80, AVE > 0.50, and cronbach's alpha (CA) > 0.80.

Table 2 Convergent Validity

Variable and Constructs	Loading	CA	rho-A	CR	AVE	Inner VIF
Leader cultural Intelligence		.963	.975	.966	.593	3.259
CIMC1	.841					

CIMC2	.836				
CIMC3	.853				
CIMC4	.858				
CIC1	.841				
CIC2	.676				
CIC3	.468				
CIC4	.602				
CIC5	.859				
CIC6	.634				
CIM1	.763				
CIM2	.583				
CIM3	.874				
CIM4	.823				
CIM5	.556				
CIB1	.882				
CIB2	.902				
CIB3	.817				
CIB4	.803				
CIB5	.761				
Problem-Solving		.976	.978	.978	.619
PSADM1	.801				
PSADM2	.860				
PSADM3	.837				
PSADM4	.882				
PSCC1	.831				
PSCC2	.805				
PSCC3	.612				
PSCC4	.808				
PSES1	.784				
PSES2	.888				
PSES3	.830				
PSES4	.799				
PSGAS1	.735				
PSGAS2	.697				
PSGAS3	.864				
PSGAS4	.799				
PSGS1	.814				
PSGS2	.796				
PSGS3	.819				
PSGS4	.703				
PSIM1	.824				
PSIM2	.849				
PSIM3	.896				
PSIM4	.831				

PSPI1	.609					
PSPI2	.501					
PSPI3	.682					
PSPI4	.727					
Psychological Safety		**.869**	**.881**	**.899**	**.564**	**3.193**
PSS1	.565					
PSS2	.773					
PSS3	.839					
PSS4	.829					
PSS5	.773					
PSS6	.746					
PSS7	.698					
Cognitive Diversity		**.923**	**.937**	**.945**	**.812**	**1.085**
CD1	.879					
CD2	.941					
CD3	.867					
CD4	.916					

Discriminant Validity

Discriminant validity was evaluated using the Fornell-Larcker criterion (Fornell & Larcker, 1981) and examining the cross-loadings of latent variables. As illustrated in Table 3, the results provide evidence for the cornerstones of this type of analysis in terms of establishing the discriminant validity between variables that were used in the study.

Table 3 Fornell-Larcker Criterions

Constructs	CD	LCI	PS	PSS
CD	**0.901**			
LCI	0.280	**0.770**		
PS	0.230	0.767	**0.787**	
PSS	0.224	0.827	0.767	**0.751**

Bold values are the square root of AVE

Also, discriminant validity was assessed as a second criterion by the Heterotrait-Monotrait ratio (HTMT). As suggested by Henseler et al. (2016), HTMT values should be below 1. Table 4 shows the HTMT values of each construct, which fall between tuned acceptable thresholds, thus validating the measurement model discriminant validity.

Table 4 Heterotrait-Monotrait (HTMT) ratios

Constructs	CD	LCI	PS	PSS
CD				
LCI	0.338			
PS	0.251	0.734		
PSS	0.261	0.864	0.819	

Structural Model

We implemented the bootstrapping method in hypothesis testing, which, according to Chin (2010) has a significant advantage over parametric testing, using Smart PLS. Bootstrapping for PLS-SEM analysis is strongly supported, Henseler et al. found it reliable enough to use in their 2009 study. In the framework of this research, three hypotheses were investigated, including one direct hypothesis, one meditational hypothesis, and one moderation hypothesis.

Within the context of this study, three hypotheses are proposed. We employed SmartPLS version 4 for analysis of these hypotheses using bootstrapping with 5,000 subsets for robust statistical evaluation. The findings show a strong and positive relationship between LCI and PS (β=. 406; t=6.334; p=0.000), therefore further accept the Hypothesis 1. Table 6 shows the indirect effect of LCI on PS through PSS as a mediator, and the moderating role of CD on PSS and PS relationship. The results for Hypothesis 2 confirm that PSS mediates the relationship between LCI and PS (β = 0.827; t = 37.938; p < 0.000). In addition, this research investigates the moderating role of cognitive diversity (CD) on the relationship between PSS and PS. H3 is proven to be a significant positive moderation effect, (β = -0.090; t = 2.881; p < 0.004).
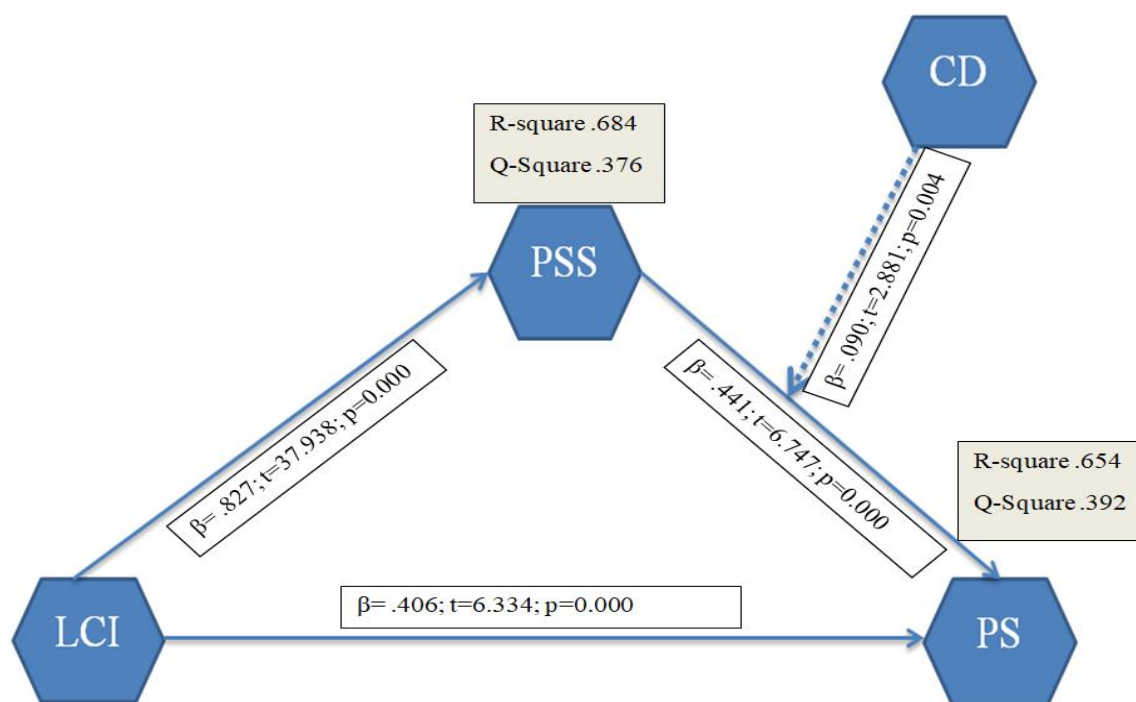
Figure 2 Result of PLS-SEM

TABLE 5 Hypotheses Testing and Strength of The Model.

Hypothesis	Proposed Relationship	Path Coefficient	SD	t-value	p-value	Decision
H1	LCI → PS	.406	.064	6.334**	.000	Supported
Indirect Effect						
H2	LCI→PSS→PS	.827	.022	37.938**	.000	Supported
Moderating Interaction						
H3	CD x PSS→ PS	.090	.031	2.881*	.004	Supported

Figure 3 shows the moderating role of cognitive diversity (CD) in the connection between Leader Cultural Intelligence (LCI) and Problem Solving (PS). Two different key performance indicators were used to measure how much this moderation really matters. The results depicted by Figure 3 show a positive moderating effect of CD on PSS - PS relationship. These findings provide empirical evidence for Hypothesis H3, which postulated that the link between PSS and PS is moderated by CD.

Figure 3 Moderating effect of CD between LCI and PS
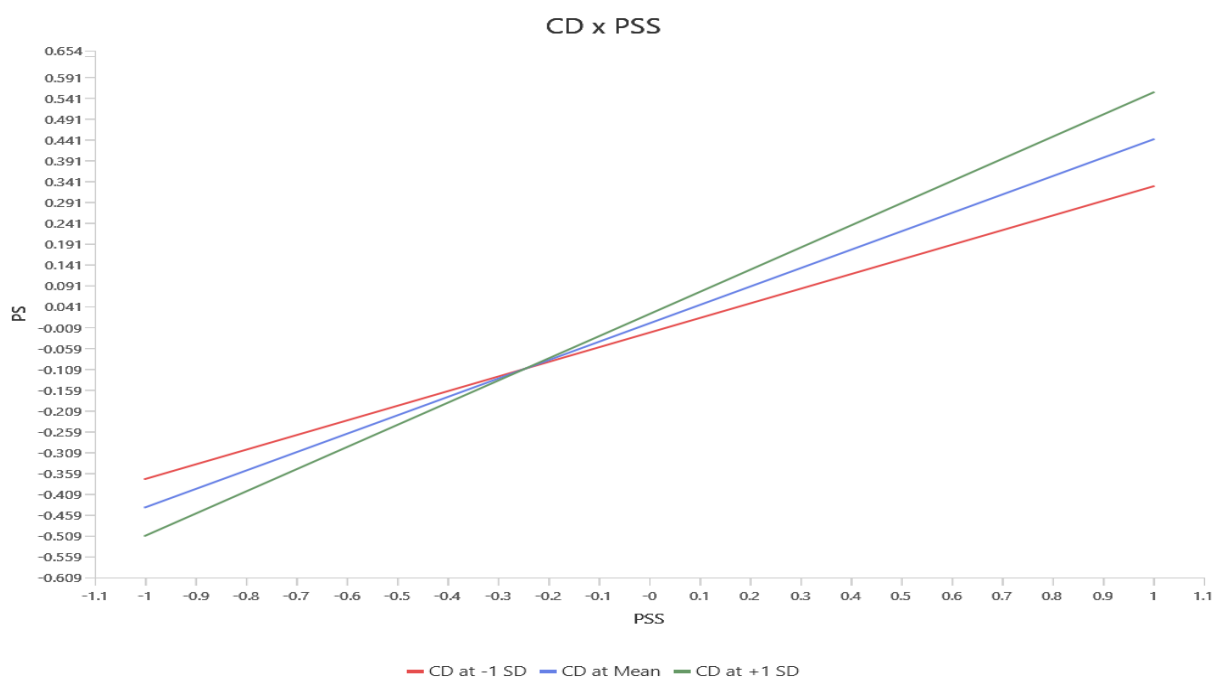
TABLE 6 R2 and Q2.

	R2	Q2
Psychological Safety	.684	.376
Problem Solving	.654	.392

The Predictive Power of the Model

R^2 is the proportion of variance explained by exogenous variables. As illustrated by Table 5, the findings are in a way that the exogenous variables explain 68.40% of Psychological Safety (PSS) variance and 65.40% of Problem Solving (PS) variance. R^2 values are classified into three groups: weak (0.02–0.13), moderate (0.13–0.26), and strong (above 0.26) (according to Cohen, 1988). The R^2 value for PSS and PS was substantial on these benchmarks. In addition, SmartPLS utilizes the blindfolding technique to calculate the Q^2 statistic, indicating the predictive relevance of the model via cross-validated redundancy (Hair et al., 2017). As per Chin et al. (2020), Q^2 values greater than zero indicate predictive relevance of the model. Indeed, PSS as well as PS have Q^2 values greater than zero, emphasizing the predictive relevance of the model as highlighted in Table 6.

Discussion

This study's results confirmed that the mediating variable of psychological safety is able to strengthen the indirect influence of cultural intelligence on problem solving within employees in telecommunication contact centers. Likewise, this research examines the moderating effect of cognitive diversity on the association of psychological safety with problem solving. The study first used PLS-SEM analysis to determine leaders' cultural intelligence direct effects on problem solving. The implications of the research findings reveal that, given the correct structural context, leaders who possess an informative knowledge stance on workplace culture can communicate more effectively with members to reinforce preferable constructs of team productivity grounded on employee innovation. The results provide evidence that a leader's cultural intelligence positively affects employees' problem-solving ability in cognitively diverse environments. These findings are consistent with prior research and highlight the important role of cultural intelligence in improving problem-solving skills, which allows them to more effectively interpret and identify challenges so that effective social solutions may be created (Engle & Delohery, 2016; Thomas & Inkson, 2004). This shows that cultural intelligence is not just the ability to identify differences but it applies the understanding of difference to the process of problem-solving. A study conducted by Engle, Elahee, and Tatoglu (2013) also suggests that cultural intelligence is positively related to how international negotiating professionals analyze and solve their problems. Leaders with high levels of cultural intelligence, the researchers explain, are aligned with challenges that might stem from the cross-culture interactions present in the global business environment.

Similarly, Stallter (2009) noted that cultural intelligence means adapting to local problem-solving styles, rather than imposing one style. Flexible leaders might be able to critically consider the positives and negatives of different contexts with these things in mind, thinking outside the box to meet local needs and sensitivities, and avoiding literalism (of thinking, transfer of actions, etc.). All of these studies together emphasize the importance of cultural intelligence in leadership. Culturally literate leaders are well-prepared to operate within different cultures, promote creativity and collaboration, and improve solutions to problems. Yet they also know effective solutions depend on context, and that flexibility is a paramount virtue of any leader. The essence of diversity and inclusion is that it serves as a tool not only for moral righteousness, but also for institutional sustenance through innovation and effective decision-making. With Respect to mediation hypothesis and research aim, our study analyzed a strong evidence of positive significant mediation effect of psychological safety on the relationship between leader's cultural intelligence and problem-solving. Employees who believe they work in a

psychologically safe environment are more likely to offer suggestions for new ideas, spearhead new initiatives or creative solutions, and become directly involved with the task at hand. Psychological safety helps create a safe place for employees to take risks and test new ideas without fear of being punished. It also encourages a culture of discovery and ongoing education. This is consistent with a significant body of previous work (Burrell & Brauner, 2021; Ahmad, Ullah, AlDhaen, Han, & Scholz, 2022; Safdar et al., 2017; Miao, Lu, Cao, & Du, 2020; Frazier et al., 2017; Javed et al., 2019; O'Donovan & McAuliffe, 2020). Such psychologically safe workplaces, which encourage creativity and innovation, ultimately happen because of leaders with high cultural intelligence. Which results to improves problem-solving ability, increases competitive advantage and enables a healthy future.

Finally, in relation to the last moderation hypothesis and the overreaching objecitve, our quantitative analysis revealed a modest but statistically significant positive interaction effect of cognitive diversity on the relationship between psychological safety and problem-solving (β = 0.090, t = 2.881, p = 0.004 < 0.05). Hypothesis 3 is empirically supported by these findings. It suggests that when cognitive diversity is high, the effects of LCI on problem-solving are become stronger to some extent. This finding is aligns the conclusion from Kearney, Gebert, and Voelpel, (2009) which state that cognitive diversity is creating an important role for team performance.

Theoretical Implication

Our study has major theoretical contributions to the literature. This study contributes to the recently emerging body of literature on CQ, extending previous work by Sharma and Hussain (2017) and Ott and Michailova (2018). The previous study of Korzilius, Bucker and Beerlage (2017), suggested that Cultural Intelligence (CQ) can enhance the individual capabilities of cross-cultural communication competencies and bring innovative outcomes. Hence, this current study contributes to knowledge of CQ, a vital competency in cross-cultural context. This study also provides several valuable theoretical contributions to the leadership, cultural intelligence, and organizational behavior literature. Importantly, the study fulfills a critical need in the current literature by synthesizing and building on the tenets of Cultural Intelligence (CQ) Theory, Leader-Member Exchange (LMX) Theory, and Social Cognitive Learning Theory as a framework for exploring the direct effects of leader cultural intelligence on employee problem-solving skills. More specifically, the results highlight the importance of CQ in culturally diverse settings, indicating that leaders with high CQ are more successful than low CQ leaders in creating environment that include and drive innovation in workplaces.

Our study emphasizes the importance psychological safety as a mediating variable in this case. This indicates that leaders and supervisors can take a pivotal role in motivating and facilitating psychological safe environment between employees to offer innovative ideas for solving problems. Moreover, efficient managers who practice relational leadership can significantly influence their employees' cultural intelligence as well as their joint innovativeness. Overall, our study provides evidence that leader cultural intelligence not only influences employees' problem-solving directly but also indirectly through psychological safety as a mediator.

In addition, this study went a step further than the existing literature by considering the moderating effect of Cognitive Diversity (CD) on the relationship between psychological safety and problem-solving. Results indicated that CD moderates the relationship between Psychological safety and Problem Solving. More importantly, the findings show that CD has a significant positive moderation on the relationship between psychological safety and problem-

solving. This insight expands on understanding team dynamics, revealing that cognitive diversity helps to explain the conditions under which leadership behaviors are positively or negatively related to employee outcomes. This research study fills a gap in existing literature by identifying the specific role of cultural intelligence, psychological safety, and cognitive diversity as mechanisms through which hybrid leaders can manipulate to drive innovative achievement in cultural diversity.

Managerial Implication

This paper provides some beneficial practical implications and highlights the importance of Leader Cultural Intelligence (LCI) in promoting employees' problem-solving skills, directly and indirectly. Therefore, organizations need to adopt strategic actions for managing their workforce effectively. First, companies are strongly recommended to include Cultural Intelligence (CQ) as a main determinant in the evaluation of future leaders within the recruitment process so as to favor candidates with higher CQ scores. For example, organizations can assess candidates for leadership roles using CQ assessments and choose those who show a high degree of cultural adaptability. Finally, the research provides valuable insights into developing an organizational environment that encourages psychological safety. Considering that leaders' Cultural Intelligence can add significant value to organizations, it is important that organizations focus on investing on the initiatives that foster and maintain a climate of psychological safety. Understanding of both facilitators and constraints of cognitive diversity is imperative for organizations working in a multi-ethnic country like Pakistan. In fact, diversity can lead to positive and negative spillover effects, which means that it needs to be managed well in order to leverage the problem-solving capabilities of diverse teams. In addition, promoting a culture of psychological safety that empowers people to share what they have learned irrespective of religion, ethnicity, and culture helps leaders create positive and problem-solving skills of employees.

Limitations and Future Research

This study had its limitations which should be recognized before mentioning indications of further research directions. One of the limitations of the study is that establishing causal relationships between variables is difficult, due to its cross-sectional approach, which was only capable of demonstrating association. Thus, future research should adopt longitudinal or multilevel research designs to provide a more comprehensive understanding of such associations. Second, although the quantitative data used in this study show the relationships between the examined variables, they do not give insights into the motivations behind these correlations. Thus, future researchers should consider qualitative data collection and analysis to further interpret the mechanisms generating these associations. Using the mixed-methods approach, combining qualitative and quantitative data, can provide a more comprehensive understanding of the association between cultures intelligence in leaders and problem-solving skills of employees. Finally, this step examined CQ at a more general, aggregated level. But, as Korzilius et al. Indeed, according to (2017), the metacognitive, cognitive, motivational and behavioral dimensions of CQ are key factors guiding individuals in crafting their cognitive complexity towards inter culturally-directed communities. These sub dimensions could further be explored in future research to gain a deeper understanding of the full impact of CQ on problem-solving.

Conclusion

The present study employs a cross-sectional research design to substantiate the positive relationship between LCI and employees' problem-solving skills. In other words, LCI, through psychological safety as a mediation variable, indirectly impacts employees' problem-solving skills. Moreover, the results indicate a mediated moderation model wherein cognitive diversity (CD) moderates the link between psychological safety and employees' problem-solving. Hence, it specifies that psychological safety and cognitive diversity significantly affect the relationship between leader cultural intelligence and employees' problem-solving skills.

References

Adair, W. L., Hideg, I., & Spence, J. R. (2013). The culturally intelligent team: The impact of team cultural intelligence and cultural heterogeneity on team shared values. Journal of cross-cultural psychology, 44(6), 941-962.

Ahmad, N., Ullah, Z., AlDhaen, E., Han, H., & Scholz, M. (2022). A CSR perspective to foster employee creativity in the banking sector: The role of work engagement and psychological safety. Journal of Retailing and Consumer Services, 67, 102968.

Alghazi , S. S., Kamsin, A., Almaiah, M. A., Wong, S. Y., & Shuib, L. (2021). For Sustainable Application of Mobile Learning: An Extended UTAUT Model to Examine the Effect of Technical Factors on the Usage of Mobile Devices as a Learning Tool. Sustainability, 13, 1-22.

Almahri, K. S., & Wahab, S. A. (2023). Effectiveness of Psychological Safety on Employees Productivity. International Journal of Scientific and Management Research, 06(10), 37-42.

Andresen, M., & Bergdolt, F. (2017). A systematic literature review on the definitions of global mindset and cultural intelligence–merging two different research streams. The International Journal of Human Resource Management, 28(1), 170-195.

Ang, S., Dyne, L. V., & Koh, C. (2006). Personality Coorelates of the Four-Factor Model of Cultural Intelligence. Group & Organization Management, 31(1), 100-123.

Ang, S., & Inkpen, A. C. (2008). Cultural intelligence and offshore outsourcing success: A framework of firm-level intercultural capability. Decision Sciences, 39(3), 337-358.

Bandura, A. (1986). Social foundations of thought and action. Englewood Cliffs, NJ, 1986(23-28), 2.

Binyamin, G., Friedman, A., & Carmeli, A. (2018). Reciprocal care in hierarchical exchange: Implications for psychological safety and innovative behaviors at work. Psychology of Aesthetics, Creativity, and the Arts, 12(1), 79.

Burrell, E., & Brauner, E. (2021). Knowing and sharing: Transactive knowledge systems and psychological safety. Organisationsberatung, Supervision, Coaching, 28(3), 303-317.

Carmeli, A., Gelbard, R., & Reiter-Palmon, R. (2013). Leadership, creative problem-solving capacity, and creative performance: The importance of knowledge sharing. Human resource management, 52(1), 95-121.

Carmeli, A., Reiter-Palmon, R., & Ziv, E. (2010). Inclusive leadership and employee involvement in creative tasks in the workplace: The mediating role of psychological safety. Creativity research journal, 22(3), 250-260.

Chen, A. S. Y., Wu, I. H., & Bian, M. D. (2014). The moderating effects of active and agreeable conflict management styles on cultural intelligence and cross-cultural adjustment. International Journal of Cross Cultural Management, 14(3), 270-288.

Chin, W. W. (2010). How to Write up and Report PLS Analyses. In V. E. Vinzi, J. Henseler, W. W. Chin, & H. Wang, Handbook of partial Least Squares (pp. 655-690).

Chin, W., Cheah, J. H., Liu, Y., Ting, H., Lim, X. J., & Cham, T. H. (2020). Demystifying the Role of Causal- Predictive Modeling Using Partial Least Squares Structural Equation Modeling in Information Systems Research. Industrial Management & Data System, 120(12), 2161-2209.

Chow, I. H. S. (2018). Cognitive diversity and creativity in teams: the mediating roles of team learning and inclusion. Chinese Management Studies, 12(2), 369-383.

Cosain, S. R., Solutan, S. A., & Sarno, J. M. (2022). Cultural Intelligence and Conflict Management Style of Lupong Tagapamayapa in Malata, Davao Occidental. International Journal of Legal Studies, 2(12), 199-236.

Dongrey,]., & Rokade, V. (2020). Cognitive Diversity at Workplace: An Overview. Test Engineering and Management, 12252-12260.

Dyne, L. V., Ang, S., & Koh, C. (2015). Development and validation of the CQS: The cultural intelligence scale. In Handbook of cultural intelligence (pp. 34-56). Routledge.

Earley, P. C., & Gardner, H. K. (2005). Internal dynamics and cultural intelligence in multinational teams. In Managing multinational teams: Global perspectives (Vol. 18, pp. 3-31). Emerald Group Publishing Limited.

Edmondson, A. (1999). Psychological safety and learning behavior in work teams. Administrative science quarterly, 44(2), 350-383.

Edmondson, A. C., & Lei, Z. (2014). Psychological safety: The history, renaissance, and future of an interpersonal construct. Annu. Rev. Organ. Psychol. Organ. Behav., 1(1), 23-43.

Eken, İ., Ozturgut, O., & Craven, A. E. (2014). Leadership styles and cultural intelligence. Journal of Leadership, Accountability and Ethics, 11(3), 154.

Elenkov, D. S., & Manev, I. M. (2009). Senior expatriate leadership's effects on innovation and the role of cultural intelligence. Journal of World Business, 44(4), 357-369.

Engle, R., & Delohery, A. (2016). Cultural intelligence's impact on cross-cultural problem-solving performance. Double Helix, 4, 1-12.

Engle, R., Elahee, M., & Tatoglu, E. (2013). Antecedents of problem-solving cross-cultural negotiation style: Some preliminary evidence. Journal of Applied Management and Entrepreneurship, 18(2), 83-102.

Erez, M., Lisak, A., Harush, R., Glikson, E., Nouri, R., & Shokef, E. (2013). Going global: Developing management students' cultural intelligence and global identity in culturally diverse virtual teams. Academy of Management Learning & Education, 12(3), 330-355.

Fan, M., Huang, Y., Qalati, S. A., Shah, S. M. M., Ostic, D., & Pu, Z. (2021). Effects of information overload, communication overload, and inequality on digital distrust: A cyber-violence behavior mechanism. Frontiers in psychology, 12, 643981.

Fang, F., Schei, V., & Selart, M. (2018). Hype or hope? A new look at the research on cultural intelligence. International Journal of Intercultural Relations, 66, 148-171.

Fornell, C., & Larcker, D. F. (1981). Structural Eqution Models With Unobservable Variables and Measurment Errors: Algebera and Statistic. 382-388.

Frazier, M. L., Fainshmidt, S., Klinger, R. L., Pezeshkan, A., & Vracheva, V. (2017). Psychological safety: A meta-analytic review and extension. Personnel psychology, 70(1), 113-165.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. European business review, 31(1), 2-24.

Hasanuddin, S. S. D., & Siregar, E. S. (2022). Predictor of Multiple Intelligence in Educational Practice. Educational Administration: Theory and Practice, 28(02), 49-56.

Heath, K., Martin, L., & Shahisaman, L. (2017). Global leadership competence: The intelligence quotient of a modern leader. Journal of Leadership Education, 16(3), 134-145.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. International marketing review, 33(3), 405-431.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The Use of Partial Least Squares Path Modeling in International Marketing. New challenges to international marketing, 20, 277-319.

Huang, C. E., & Liu, C. H. S. (2015). Employees and creativity: Social ties and access to heterogeneous knowledge. Creativity Research Journal, 27(2), 206-213.

Janssens, M., & Brett, J. M. (2006). Cultural intelligence in global teams: A fusion model of collaboration. Group & Organization Management, 31(1), 124-153.

Javed, B., Abdullah, I., Zaffar, M. A., ul Haque, A., & Rubab, U. (2019). Inclusive leadership and innovative work behavior: The role of psychological empowerment. Journal of Management & Organization, 25(4), 554-571.

Kearney, E., Gebert, D., & Voelpel, S. C. (2009). When and how diversity benefits teams: The importance of team members' need for cognition. Academy of Management journal, 52(3), 581-598.

Kessel, M., Kratzer, J., & Schultz, C. (2012). Psychological safety, knowledge sharing, and creative performance in healthcare teams. Creativity and innovation management, 21(2), 147-157.

Kim, K., Kirkman, B. L., & Chen, G. (2008). Cultural intelligence and international assignment effectiveness. Handbook of cultural intelligence: Theory, measurement, and applications, (Part II), 71-90.

Kim, S., Lee, H., & Connerton, T. P. (2020). How psychological safety affects team performance: mediating role of efficacy and learning behavior. Frontiers in psychology, 11, 1581.

Korzilius, H., Bucker, J. J., & Beerlage, S. (2017). Multiculturalism and innovative work behavior: The mediating role of cultural intelligence. International Journal of Intercultural Relations, 56, 13-24.

Lamm, A. J., Roberts, T. G., Irani, T. A., Snyder, L. J. U., & Brendemuhl, J. (2012). The influence of cognitive diversity on group problem solving strategy. Journal of Agricultural Education, 53(1), 18-30.

Leung, A. K. Y., Maddux, W. W., Galinsky, A. D., & Chiu, C. Y. (2008). Multicultural experience enhances creativity: the when and how. American psychologist, 63(3), 169.

Lohman, M. C. (2004). The development of a multirater instrument for assessing employee problem-solving skill. Human Resource Development Quarterly, 15(3), 303-321.

Makkonen, T. (2022). Board diversity and firm innovation: a meta-analysis. European Journal of Innovation Management, 25(6), 941-960.

Miao, R., Lu, L., Cao, Y., & Du, Q. (2020). The high-performance work system, employee voice, and innovative behavior: The moderating role of psychological safety. International journal of environmental research and public health, 17(4), 1150.

Molinsky, A. (2007). Cross-cultural code-switching: The psychological challenges of adapting behavior in foreign cultural interactions. Academy of management review, 32(2), 622-640.

Moynihan, L. M., Peterson, R. S., & Earley, P. C. (2006). Cultural intelligence and the multinational team experience: Does the experience of working in a multinational team improve cultural intelligence?. In National culture and groups (Vol. 9, pp. 299-323). Emerald Group Publishing Limited.

Munawar, S., Yousaf, H. Q., Ahmed, M., & Rehman, S. (2024). The impact of emotional intelligence, servant leadership, and psychological safety on employee's innovative behavior with the moderating effect of task interdependence in Lahore, Pakistan. Current Psychology, 43(9), 8186-8199.

Newman, A., Donohue, R., & Eva, N. (2017). Psychological safety: A systematic review of the literature. Human resource management review, 27(3), 521-535.

Ng, K. Y., Van Dyne, L., & Ang, S. (2009). From experience to experiential learning: Cultural intelligence as a learning capability for global leader development. Academy of Management learning & education, 8(4), 511-526.

Obrenovic, B., Jianguo, D., Khudaykulov, A., & Khan, M. A. S. (2020). Work-family conflict impact on psychological safety and psychological well-being: A job performance model. Frontiers in psychology, 11, 475.

O'Donovan, R., & McAuliffe, E. (2020). A systematic review exploring the content and outcomes of interventions to improve psychological safety, speaking up and voice behaviour. BMC health services research, 20, 1-11.

Oh, S. H., Dong, L., Nahm, A. Y., & Yu, G. C. (2023). Fostering innovation and involvement among Korean workers in problem solving through trust and psychological safety: The role of paradoxical leader behaviours. Asia Pacific Business Review, 29(3), 701-718.

Ott, D. L., & Michailova, S. (2018). Cultural Intelligence: A Review and New Research Avenues. International Journal of Management Reviews, 20(1), 99-119.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. Journal of Applied Psychology, 88(5), 879-903.

Qalati, S. A., Yuan, L. W., Khan, M. A., & Anwar, F. (2021). A Mediated Model on the Adoption of Social Media and SMEs' Performance in Developing Countries. Technology in Society, 64, 1-12.

Rao-Nicholson, R., Khan, Z., Akhtar, P., & Merchant, H. (2016). The impact of leadership on organizational ambidexterity and employee psychological safety in the global acquisitions of emerging market multinationals. The International Journal of Human Resource Management, 27(20), 2461-2487.

Reynolds, A., & Lewis, D. (2017). Team Solve Problems Faster When They are More Cognitively Diverse. Harvard Business Review, 1-8.

Richter, N. F., Martin, J., Hansen, S. V., Taras, V., & Alon, I. (2021). Motivational configurations of cultural intelligence, social integration, and performance in global virtual teams. Journal of Business Research, 129, 351-367.

Rockstuhl, T., Seiler, S., Ang, S., Van Dyne, L., & Annen, H. (2011). Beyond general intelligence (IQ) and emotional intelligence (EQ): The role of cultural intelligence (CQ) on cross-border leadership effectiveness in a globalized world. Journal of Social Issues, 67(4), 825-840.

Ruth, R., & Netzer, T. (2020). The key elements of cultural intelligence as a driver for digital leadership success. Leadership, Education, Personality: An Interdisciplinary Journal, 2(1), 3-8.

Safdar, U., Badir, Y. F., & Afsar, B. (2017). Who can I ask? How psychological safety affects knowledge sourcing among new product development team members. The Journal of High Technology Management Research, 28(1), 79-92.

Schein, E. H. (2010). Organizational culture and leadership (Vol. 2). John Wiley & Sons.

Sharma, N., & Hussain, D. (2017). Current Status and Future Directions for Cultural Intelligence. Journal of Intercultural Communication Research, 46(1), 96-110.

Shin, S. J., Kim, T. Y., Lee, J. Y., & Bian, L. (2012). Cognitive team diversity and individual team member creativity: A cross-level interaction. Academy of management journal, 55(1), 197-212.

Singh, M., & Sarkar, A. (2019). Role of psychological empowerment in the relationship between structural empowerment and innovative behavior. Management Research Review, 42(4), 521-538.

Stallter, T. (2009). Cultural intelligence: A model for cross-cultural problem solving. Missiology, 37(4), 543-554.

Sternberg, R. J., & Grigorenko, E. L. (2000). Practical intelligence and its development.

Thomas, D. C., & Inkson, K. (2005). People skills for a global workplace. Consulting to management, 16(1), 5.

Van der Vegt, G. S., & Janssen, O. (2003). Joint impact of interdependence and group diversity on innovation. Journal of management, 29(5), 729-751.

Van Dyne, L., Ang, S., & Koh, C. (2015). Development and validation of the CQS: The cultural intelligence scale. In Handbook of cultural intelligence (pp. 34-56). Routledge.

Van Dyne, L., Ang, S., & Tan, M. L. (2016). Cultural intelligence.

Wang, X. H. F., Kim, T. Y., & Lee, D. R. (2016). Cognitive diversity and team creativity: Effects of team intrinsic motivation and transformational leadership. Journal of business research, 69(9), 3231-3239.

Wang, Y. M., Ahmad, W., Arshad, M., Yin, H. L., Ahmed, B., & Ali, Z. (2021). Impact of coordination, psychological safety, and job security on employees' performance: The moderating role of coercive pressure. Sustainability, 13(6), 3175.

Younis, R. (2019). Cognitive diversity and creativity: the moderating effect of collaborative climate. International Journal of Business and Management, 14(1), 159-168.