



Ethical climate in higher education: The interplay of leadership, moral efficacy, and team cohesion in diverse cultural contexts

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ABSTRACT

Ethical climate, ethical leadership, team cohesion, and collective moral efficacy influence organizational integrity and performance within higher education institutions. How do these factors interact within various cultural and institutional contexts, and what mechanisms reveal their relationships? This research investigates the relationship between ethical climate, ethical leadership, collective moral efficacy, and team cohesion within Pakistan, China, and Saudi Arabia higher education institutions. The research is based on Social Cognitive Theory and utilizes a quantitative survey method, obtaining data from 15 universities chosen for their varied cultural, economic, and institutional contexts. The results indicate that ethical climate substantially improves ethical leadership, with collective moral efficacy as a mediator and team cohesion as a moderator. The strength of these relationships differs among countries: China's collectivist culture and strong institutional frameworks enhance these associations, whereas Pakistan's resource limitations and systemic challenges diminish them. Saudi Arabia's Vision 2030 reforms indicate advancement; however, they encounter challenges in implementation. This study addresses significant gaps in the literature by introducing collective moral efficacy and team cohesion as mediating and moderating variables, extending Social Cognitive Theory, and offering a cross-cultural perspective on ethical leadership. The findings highlight the significance of promoting ethical climates, enhancing team cohesion, and tackling systemic challenges to improve leadership effectiveness and organizational outcomes. This investigation provides strategies for higher education institutions to enhance ethical practices and resilience across varied cultural and economic contexts. Ultimately, this study raises a pivotal question: How can higher education institutions worldwide leverage ethical climate and leadership to foster sustainable organizational practices and achieve institutional excellence in an increasingly complex global landscape?

1. Introduction

Scholars have delved into ethical climate since the early 1980s; however, its exploration remains uneven across global contexts, particularly in developing and emerging economies (Al Halbusi et al., 2021a). This study examines a principled ethical climate, defined by a robust focus on regulations, codes of conduct, and adherence (Victor & Cullen, 1988). This ethical climate is especially pertinent to higher education institutions, as it corresponds with their requirement for organized governance and accountability in meeting social expectations. In higher education institutions, the ethical climate extends beyond the

mere provision of education. It aims to meet performance requirements that address the ever-evolving expectations of society (Andersson et al., 2022). In this context, these institutions are anticipated to assume more responsibilities beyond economic or legal obligations (Schofer et al., 2021). The ethical climate, defined as individuals' perceptions of right and wrong within an organization, is a critical indicator of an institution's integrity (Yang et al., 2023). This study defines ethical climate as the collective judgments of ethical standards and behaviors within an institution (Martin et al., 2021). Team cohesion denotes the extent of unity and collaboration among team members, assessed using indicators such as trust and mutual support (Brawley et al., 2016). Moral

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efficacy refers to an individual's confidence in their ability to act ethically under challenging circumstances, evaluated through self-reported assessments of ethical decision-making (Bandura, 1999). Ethical leadership is conduct that fosters ethical standards and practices, assessed by observable behaviors and employee perceptions (Brown et al., 2005). As organizations encounter progressively intricate ethical dilemmas, it is essential to comprehend the impact of ethical climate on team dynamics. Team cohesion, which refers to unity and collaboration among members, moral efficacy, and the confidence to act ethically even under challenging circumstances, are crucial outcomes influenced by an ethical climate. In higher education, establishing team cohesion and moral efficacy among faculty and administrative staff is crucial for creating an environment that encourages ethical decision-making and collaborative problem-solving, eventually increasing institutional outcomes (Bonny, 2023). Together, these aspects promote organizational resilience and improve the ability to address ethical concerns successfully. This study is grounded in social cognitive theory (SCT), highlighting the reciprocal interaction of individual behaviors, team dynamics, and environmental factors (Bandura, 1986). Social Cognitive Theory asserts that humans acquire and modify their behaviors via observational learning, self-efficacy, and reciprocal determinism. Within the framework of ethical climate, SCT elucidates how collective ethical standards and behaviors are assimilated via social modeling and reinforcement, affecting team cohesion and moral efficacy. This theory is pertinent to our study as it offers a framework for comprehending how ethical climates influence collective behaviors and leadership practices in higher education institutions. Research demonstrates that cultivating a climate of ethics enhances organizational integrity and fosters team cohesion, strengthening moral efficacy and empowering teams to confront ethical difficulties with a unified sense of purpose and resilience. So far, few research studies have investigated how the ethical climate may serve as a mechanism for promoting ethical leadership, especially regarding its impact on team cohesion and collective moral efficacy within organizations (Zeng et al., 2020). Despite breakthroughs in studies on ethical climate and leadership, significant gaps persist. Most studies have focused on developed economies, with insufficient consideration given to developing and emerging economies (Hopewell, 2022). Secondly, there is an absence of cross-cultural comparative research investigating the impact of ethical climate on team cohesion and moral efficacy across various economic and institutional contexts (El Hassani et al., 2023). Third, although ethical leadership has been extensively examined, its association with ethical climate to improve organizational outcomes is still insufficiently investigated (Cai et al., 2024). Addressing these gaps is essential since comprehending the functioning of ethical environments in varied contexts helps guide the development of customized solutions to promote ethical leadership and enhance organizational outcomes at higher education institutions worldwide. This study examines the relationship among ethical climate, ethical leadership, team cohesion, and moral efficacy in Pakistan, China, and Saudi Arabia higher education institutions. Considering the current research linking ethical climate and leadership to organizational integrity and performance, it is logical to assert that fostering a strong ethical climate may enhance team cohesion and collective moral efficacy. Examining higher education institutions through the perspective of ethical leadership and climate is essential for fostering sustainable organizational practices and achieving institutional excellence. Prior research suggests additional cross-cultural studies to validate findings regarding ethical climate and leadership across varied contexts (Ahmad et al., 2020; Khaoula et al., 2023; Parboteeah et al., 2024). This study addresses these requests by performing a comparative analysis of three nations with diverse economic and cultural contexts, thus improving the generalizability of the results.

The existing literature indicates that most research on ethical climate and ethical leadership has predominantly occurred in the USA and European states, with minimal attention given to developing economies. Cross-cultural studies contrasting ethical climates in emerging and

developing economies, particularly in Pakistan, China, and Saudi Arabia universities, remain limited (Wang et al., 2024). The research community advocates for cross-cultural investigations to replicate findings on ethical climate, ethical leadership, team cohesion, and moral efficacy in higher education to enhance the generalizability of the results (López-Miguens et al., 2021). This research presents multiple innovative contributions to the existing literature. This study is among the initial empirical research to explore the correlation between ethical climate and ethical leadership as an enrichment process, offering novel insights into how ethical climate directly augments ethical leadership. Secondly, it presents team cohesion and moral efficacy as essential processes that mediate this relationship, providing a more refined comprehension of the underlying dynamics. This study conducts a cross-cultural comparison of Pakistan, China, and Saudi Arabia to address the deficiency of research on ethical climate in varied socio-economic and cultural contexts. Ultimately, it broadens the use of social cognitive theory within higher education, offering a novel theoretical perspective for comprehending ethical leadership and climate. The study aims to address these gaps by examining three countries with diverse economic contexts: Pakistan, a developing economy; China, an emerging economy; and Saudi Arabia, a rapidly growing economy. These nations have consistently low and static ethical climate indicators, with politicians diligently striving to enhance ethical practices. Pakistan, a less economically developed nation, confronts low-income levels (Bruton et al., 2021) and a diminished human development index (Zhu et al., 2016). In contrast, Saudi Arabia is seeing substantial transformations under its Vision 2030 initiative (Thompson & Quilliam, 2024). Conversely, China is regarded as a robustly growing economy (Zhu et al., 2016), exhibiting better ethical climate measures than Pakistan and Saudi Arabia. The study posits that variations in economic and developmental environments will provide divergent outcomes when comparing the three countries.

Pakistan is home to 218 universities, employing thousands of faculties and administrative staff in both public and private sectors. Market factors are becoming more and more dominant in Pakistani higher education due to continuous economic crises and brain drain (Shahnaz, 2022). On the other hand, China, with over 3000 universities in 2024, is focusing on internationalizing its higher education system. Leading Chinese universities are internationally known, attracting local and global workers while competing for top talent (Wu & Robertson, 2024). Meanwhile, Saudi Arabia, with roughly 42 universities in 2024, is frequently building its higher education sector in line with Vision 2030, intending to diversify its economy, encourage innovation, and draw global talent. However, Saudi universities are still in the early phases of establishing global competitiveness. Ethical leadership and climate exhibit diverse patterns in Pakistan, China, and Saudi Arabia, which are affected by their socio-economic and cultural settings. Ethical leadership has evolved significantly in China, supported by strong institutional frameworks and programs that foster openness, responsibility, and collaboration inside firms (Martin et al., 2013). Chinese institutions, for example, focus on an ethical climate as a fundamental driver of organizational integrity, employing their global renown and internationalization initiatives to sustain high standards. In contrast, Saudi Arabia's ethical leadership and climate are still in the early phases of development, but they show tremendous potential under Vision 2030 (Thompson & Quilliam, 2024). This effort intends to revamp the country's governance structures, particularly those in higher education, by emphasizing ethical standards and leadership frameworks. Despite being in its early stages, Saudi Arabia's efforts indicate a rising commitment to incorporating ethical concepts into firm cultures, steadily altering the higher education sector. Pakistan encounters difficulties establishing a cohesive ethical climate due to fundamental issues, including inadequate institutional support, economic volatility, and persistent brain drain. Conversely, China's robust institutional structures and Saudi Arabia's optimistic Vision 2030 reforms exemplify varying degrees of commitment and advancement in fostering ethical

leadership. This study is significant for theoretical and practical considerations. It enhances comprehension of ethical climate and leadership by incorporating social cognitive theory and emphasizing team cohesion and moral efficacy as mediating factors. This offers practical insights for higher education institutions aiming to enhance ethical practices and organizational outcomes. This research addresses the challenges of ethical leadership across diverse economic and cultural contexts, potentially guiding policy formulation and promoting sustainable, ethical practices on a global scale.

2. Literature review and hypothesis development

2.1. Ethical climate and ethical leadership

The ethical climate and ethical leadership are interrelated concepts that collectively impact organizational behavior and ethics (Vandenberghe, 2020). Ethical climate denotes the shared perceptions inside an organization concerning its practices and standards, indicating expectations for ethical behavior (Feng et al., 2023). In higher education, an ethical climate establishes the foundation for ethical decision-making, guiding the conduct of academics, staff, and administrators. Conversely, ethical leadership involves leaders who exemplify and advocate for ethical principles, cultivating a climate where integrity, fairness, and responsibility are paramount (Vandenberghe, 2020). The interplay between these two concepts is dynamic: the ethical climate influences leadership behaviors, while ethical leaders reinforce and sustain the ethical climate through their actions. Ethical leadership is frequently defined by two principal dimensions: moral staff and moral management (Kalshoven et al., 2011). The moral staff dimension highlights the leader's personal integrity, equity, and ethical decision-making. In contrast, the moral management dimension concentrates on the leader's capacity to foster ethical conduct among followers via role modeling, communication, and the reinforcement of ethical standards. This study operationalizes ethical leadership utilizing the Ethical Leadership at Work (ELW) questionnaire (Kalshoven et al., 2011), which quantifies dimensions through observable actions like fairness, integrity, and ethical advice. The Ethical Climate Questionnaire (ECQ) (Peterson, 2002) delineates some aspects of ethical climate, including rule-oriented, caring, and independent orientations. We prioritize a principled ethical climate marked by a robust emphasis on regulations, behavior codes, and compliance adherence (Victor & Cullen, 1988). This climate is especially pertinent to higher education institutions, as it corresponds with their organized governance and accountability requirements. Significantly, not all ethical contexts correlate favorably with ethical leadership. A rules-oriented climate may promote ethical leadership by establishing clear guidelines, whereas a caring climate may cultivate trust and teamwork, rewarding ethical actions. Nevertheless, a climate focused on independence, which prioritizes individual autonomy, may not consistently correspond with communal ethical norms. This investigates the impact of organized ethical norms on leadership behaviors in higher education by emphasizing a principled ethical climate.

The relationship between ethical climate and ethical leadership is bidirectional. A vibrant ethical climate supports openness, justice, and responsibility, reflecting the organization's commitment to ethical ideals. A rules-oriented climate bolsters the moral manager dimension by establishing explicit criteria for ethical conduct, whereas a caring climate reinforces the moral staff dimension by cultivating trust and teamwork. In higher education, such an environment is vital for sustaining academic integrity, preventing misbehavior, and promoting fair decision-making (Tippitt et al., 2009). Leaders with a strong ethical climate are likelier to embrace and demonstrate ethical behaviors, building a culture built on trust, involvement, and accountability (Al Halbusi et al., 2021b). These leaders operate as role models, embodying the ideals and standards of their organization, which in turn fosters the ethical climate. This virtuous loop guarantees that ethical climates are

not only theoretical constructions but are actively implemented and nurtured by leadership activities. Higher education institutions' ethical climates and leadership practices differ in cultural contexts. In China, the cultural focus on collectivism harmonizes with organizational ethical norms, fostering collaborative leadership and a rules-oriented environment (Yuan et al., 2023). The Vision 2030 reforms in Saudi Arabia have altered organizational dynamics, promoting an increased focus on ethical leadership and accountability (Abdullateef et al., 2023). In Pakistan, barriers, like constrained institutional resources and erratic policy enforcement, impede the establishment of a strong ethical climate (Iqbal & Piwowar-Sulej, 2022). Cultural and organizational differences highlight the need to thoroughly understand how ethical climates affect leadership behaviors in diverse contexts. Rules-oriented climates prove more effective in collectivist cultures like China. In contrast, caring climates may be more relevant in reforming environments such as Saudi Arabia. The cultural and organizational disparities underscore the necessity for a comprehensive comprehension of the impact of ethical climates on leadership actions across varied situations.

Bandura's Social Cognitive Theory provides a valuable framework for exploring the relationship between ethical climate and leadership (Bandura, 1989). According to SCT, individual behavior is influenced by environmental, personal, and behavioral factors (Gilissen et al., 2020). In this context, the ethical climate is the ambient factor influencing leaders' perceptions and interpretations of ethical standards. The ELW questionnaire and ECQ correspond with SCT by highlighting observable behaviors and environmental factors affecting ethical decision-making, offering a comprehensive framework for comprehending how ethical climates influence leadership behaviors. These views subsequently affect their decision-making and actions. Leaders inside a robust ethical climate are more inclined to embrace and advocate for ethical practices, strengthening the ethical climate and commencing a virtuous cycle of ethical conduct. This theoretical paradigm is congruent with the ELW questionnaire and ECQ, as both instruments prioritize observable actions and environmental factors in ethical decision-making. Prior research has thoroughly examined the correlation between ethical climate and ethical leadership. Recent research highlights the essential importance of ethical climates in higher education. Ganji et al. (2021) explored ethical climates in Chinese universities but did not establish a direct correlation between ethical climate and ethical leadership. Similarly, Alilyyani et al. (2022) highlighted the impact of ethical climates in Saudi Arabia and Pakistan but did not fully explore the reciprocal relationship between climate and leadership. This study investigates the interdependent relationship between ethical climate and ethical leadership, providing a thorough knowledge of their mutual influence across many cultural contexts. This study analyzes the relationship between ethical climate and ethical leadership across several cultural contexts, offering significant insights into how ethical standards and leadership practices influence organizational outcomes in higher education. This study addresses these gaps by providing a comparative analysis of ethical climate and leadership in China, Saudi Arabia, and Pakistan, using the ELW questionnaire and ECQ to ensure consistency and clarity in measurement. Building on the theoretical and empirical foundations, this study proposes the following hypothesis:

H1. Ethical climate positively promotes ethical leadership at the team level.

2.2. Mediating role of moral efficacy

Collective moral efficacy describes the common conviction among group members on their collective ability to attain ethical performance objectives and navigate moral dilemmas effectively (Hannah & Avolio, 2010). This concept broadens the notion of moral efficacy beyond an individual to a team level, highlighting the collective ability to maintain ethical norms. (Zhang et al., 2016). In higher education, collective moral efficacy refers to the capacity of teachers and staff to address ethical

difficulties, uphold academic integrity, and contribute to an institution's ethical foundation. Key factors include team cohesion, collective confidence, and dedication to ethical principles, which are vital for cultivating a principled company culture. The ethical climate of an organization significantly influences collective moral efficacy by affecting team members' perceptions of moral standards and permissible behavior (Philippou, 2023). An effective ethical climate promotes common ethical beliefs, allowing collective moral effectiveness to thrive. The studies by Zhu and Guo (2021) and Su et al. (2021) utilized the Ethical Climate Questionnaire (ECQ) to measure ethical climate, aligning with the measurement approach adopted in this study. This consistency ensures comparability and strengthens the validity of our findings. For example, Zhu and Guo (2021) indicated that a favorable ethical climate significantly enhanced the collective moral efficacy of faculty in Chinese universities similarly, Su et al. (2021) Demonstrated a strong correlation coefficient between ethical climate and collective moral efficacy, emphasizing the importance of a shared ethical understanding in enhancing team capability. These investigations support the hypothesis:

H2. Ethical climate positively affects collective moral efficacy at the team level.

Cultural circumstances significantly influence the evolution of collective moral efficacy. Collective moral efficacy aligns seamlessly with the collectivist cultural norms of the Chinese, hence fostering cooperation to achieve common ethical objectives (Yuan et al., 2023). Saudi Arabian society is swiftly advancing in economic and educational domains, creating chances for the cultivation of collective moral effectiveness while simultaneously posing problems in harmonizing organizational standards (Abdullateef et al., 2023). Numerous systemic challenges, including insufficient resources and inconsistent policy execution, limit the cultivation of collective moral efficacy in Pakistan, necessitating interventions (Iqbal & Piwowar-Sulej, 2022). The cultural differences necessitate the formulation of context-specific solutions to foster collective moral effectiveness through a robust ethical climate. This study examines the mediating role of collective moral efficacy in the relationship between ethical climate and ethical leadership. Collective moral efficacy is a psychological mechanism via which ethical climate impacts leadership behaviors, converting agreed norms and beliefs into tangible actions. A strong ethical climate fosters collective attitudes that, through social learning, are transformed into ethical decision-making and leadership behaviors. Social Cognitive Theory (SCT) provides a robust framework for understanding this mediation process. According to SCT, environmental factors (e.g., ethical climate) influence collective beliefs through observation and reinforcement (Bandura, 1989). Leaders in a strong ethical climate learn by observing and emulating peers who exemplify ethical behaviors, fostering a shared belief in their ability to engage in ethical conduct. This shared belief, in turn, influences team dynamics and leadership behaviors. Leaders embedded in a team with high collective moral efficacy are more likely to engage in ethical decision-making and actions, exemplifying the principle of reciprocal determinism in SCT. These dynamics ensure a continuous interplay between environmental factors (ethical climate), individual cognitions (collective moral efficacy), and leadership behaviors (ethical leadership). This relationship supports the following hypothesis:

H3. Collective moral efficacy has a positive direct effect on team members' ethical leadership.

Empirical studies support the mediating role of collective moral efficacy in the relationship between ethical climate and ethical leadership. For example, Mayer et al. (2009) discovered that collective moral efficacy increases the beneficial impact of ethical climate on ethical leadership by providing leaders with essential resources for ethical decision-making. Likewise, additional research indicates that teams possessing elevated collective moral efficacy empower leaders to tackle moral

dilemmas proficiently, connecting ethical climate with leadership results. These findings indicate that collective moral efficacy mediates the relationship between ethical climate and leadership, transforming ethical standards into implementable leadership behaviors. This study elucidates the mediating function of collective moral efficacy, offering significant insights into the influence of ethical norms and leadership behaviors on organizational results in higher education. This mediation mechanism corresponds with the subsequent hypothesis:

H4. Collective moral efficacy positively mediates the relationship between ethical climate and ethical leadership by team members.

2.3. Team cohesion as a moderator

Team cohesion denotes the extent of unity, engagement, and dedication among team members toward shared objectives (Neubauer et al., 2021). In ethical conduct, team cohesion enhances interpersonal interactions and fosters mutual trust, cultivating an environment where ethical practices are exemplified and upheld. In higher education, unified teams of faculty and staff cultivate a culture of academic integrity and collaborative leadership, guaranteeing the maintenance and promotion of standard ethical norms (Chiniara & Bentein, 2018). Cohesive teams are more inclined to internalize and uphold ethical norms, offering a supportive environment for leaders to align with these principles. Bandura's Social Cognitive Theory (SCT) offers a comprehensive framework for elucidating the moderating influence of team cohesion on the relationship between ethical climate and ethical leadership. According to SCT, behavior formation arises from the interaction of environmental conditions, individual competencies, and social factors (Kim & Vandenberghe, 2020). In cohesive teams, observational learning and social influence are augmented as leaders and members demonstrate and advocate for ethical practices. This dynamic amplifies signals from an ethical climate, encouraging leaders to adopt and exemplify ethical actions more proficiently. Cohesive teams foster social support and collective efficacy, which enable leaders to confront ethical dilemmas with assurance and accountability.

Empirical studies support the moderating role of team cohesion in the relationship between ethical climate and ethical leadership. For example, Zeng et al. (2020) discovered that team cohesion substantially amplifies the beneficial effect of ethical climate on leadership behaviors within educational contexts. Wang et al. (2022) similarly illustrated that cohesive teams more effectively internalize common ethical concepts, fostering an encouraging climate for ethical leadership. The data suggest that team cohesion enhances the ethical climate's direct and mediated impacts on leadership outcomes. In higher education institutions, team cohesion is affected by cultural and institutional variables. For instance, team cohesion is frequently exhibited in China through collaborative faculty research initiatives consistent with collectivist cultural principles. In Saudi Arabia, current educational reforms promote interdepartmental collaboration. However, swift structural changes provide difficulties. In Pakistan, systemic restrictions, including resource shortages and inconsistent policy implementation, impede the formation of team cohesion, requiring focused capacity-building initiatives. The cultural and institutional disparities underscore the necessity for context-specific tactics to promote team cohesion and elevate ethical standards. Based on this theoretical and empirical foundation, this study proposes the following hypotheses:

H5. Team cohesion positively moderates the relationship between ethical climate and collective moral efficacy.

H6. Team cohesion positively moderates the mediating role of collective moral efficacy in the relationship between ethical climate and ethical leadership.

3. Research methodology and design

Pakistan, China, and Saudi Arabia were chosen as the focal countries for this study based on their unique cultural, economic, and institutional settings. These settings offer a rich basis for analyzing the interactions among ethical climate, ethical leadership, collective moral efficacy, and team cohesion in higher education institutions. Every nation provides unique perspectives on how such concepts function in different environments, which makes them ideal for cross-cultural analysis. *Pakistan*, as a developing economy, shows a context in which ethical practices in higher education are in a state of evolution. Pakistani universities encounter ethical governance, transparency, and accountability issues, rendering them a pertinent context for examining the influence of ethical climate and ethical leadership on collective moral efficacy and team cohesion. The collectivist culture in Pakistan (Hofstede, 1980) underscores the importance of group harmony and shared values, corresponding with the study’s emphasis on team cohesion as a moderating factor. Studies indicate that in collectivist cultures, team cohesion is crucial in shaping group dynamics and ethical decision-making (Eisenberg et al., 2013), positioning Pakistan as a pertinent context for exploring these associations.

China offers a regulated environment characterized by stringent policies and regulations that foster ethical practices within organizations (Huang et al., 2021). The Chinese context is significant for examining ethical leadership and collective moral efficacy because it combines Confucian values prioritizing moral integrity and well-being (Hofstede, 1980; Yuan et al., 2023). China’s rapid economic growth and institutional reforms present an opportunity to analyze the impact of ethical climate on leadership practices within a dynamic environment. Research indicates that ethical climate significantly influences ethical leadership and enhances collective moral efficacy within Chinese organizations (Xu et al., 2021), providing an appropriate context for this study. *Saudi Arabia* presents a distinct cultural and religious framework influenced by Islamic principles prioritizing ethical conduct, justice, and communal accountability (Ali et al., 2023). The Vision 2030 initiative of the country emphasizes ethical governance across public and private sectors, including higher education (Abdullateef et al., 2023). Saudi Arabia is an optimal context for examining the relationship between ethical climate, ethical leadership, and team cohesion within a culturally unique framework. The collectivist characteristics of Saudi society (Hofstede, 1980) correspond with the study’s emphasis on team cohesion as a moderating factor. Research indicates that Islamic cultures’ ethical climate and leadership are fundamentally shaped by religious and cultural values, which substantially affect group dynamics and collective moral efficacy (Ali & Al-Kazemi, 2007).

The selected universities represented a range of institutional contexts, encompassing both public and private entities and those focused on research and teaching. The diversity of the sample allows for findings to be generalized across various educational settings rather than being confined to a particular type of institution. The selection criteria comprised geographical representation (universities from various regions within each country), institutional diversity (including both public and private universities, as well as research-intensive and teaching-focused institutions), and accessibility (universities with established research collaborations or open policies for academic studies). The study sought to encompass various university types to effectively capture higher education’s ethical practices and leadership dynamics. The universities participating in the surveys from China, Pakistan, and Saudi Arabia are displayed in Table 1. The study chose universities according to four primary criteria: (1) representation of public and private institutions, (2) inclusion of research-intensive and teaching-oriented universities, (3) geographical diversity within each nation, and (4) accessibility for data collection via established research collaborations or open policies. Among the 15 participating universities, 10 were public, and five were private. Furthermore, eight were designated research-intensive, while seven were oriented toward education. This

Table 1
Participating universities.

No.	Pakistan	China	Saudi Arabia
1	Quaid-e-Azam University	Harbin Institute of Technology	King Saud University
2	Lahore University of Management Sciences	Tsinghua University	King Abdulaziz University
3	University of the Punjab	Peking University	King Fahd University of Petroleum and Minerals
4	National University of Sciences and Technology	Shanghai Jiao Tong University	Umm Al-Qura University
5	Institute of Business Administration	Zhejiang University	Imam Abdulrahman Bin Faisal University

diversity guaranteed that the findings could be applied universally across different institutional contexts in higher education. The research focused on managers and leaders within higher education institutions in China, Pakistan, and Saudi Arabia. Individuals in leadership or management roles influence their organizations’ ethical climate, ethical leadership, team cohesion, and collective moral efficacy. The selection of participants from various universities was deliberate to ensure that the findings could be generalized across various educational contexts. Access and information restrictions limited the population’s availability, leading the study to concentrate on leaders and managers who were readily accessible and willing to participate.

This research employed quantitative data analysis of the survey method as the most suitable analytical method. The questionnaire utilized established and validated variables and scales to improve the reliability and validity of the survey research. The data collection process utilized questionnaires with multiple items distributed to teams across various departments and management levels in five universities from China, Saudi Arabia, and Pakistan. The survey questionnaire was conducted in English, as the intended participants, managers, and leaders in higher education are proficient in the language. Leaders and managers in China, Pakistan, and Saudi Arabia are generally academics or researchers fluent in English, the predominant language for academic discourse and study in these areas. Consequently, translating the questionnaire was considered superfluous, as the participants were anticipated to comprehend and answer the questions appropriately. To streamline data collection, surveys were circulated using popular messaging applications, including WeChat and QQ in China, as well as WhatsApp and email in Saudi Arabia and Pakistan. These strategies were selected for their practicality and accessibility to participants. Additional measures were implemented in response to data security and privacy concerns, such as encrypted transmission of replies, anonymization of participant data, and rigorous compliance with ethical principles across the three countries. Participation in the online survey was voluntary, and formal informed consent was considered unnecessary. The research complied with the Declaration of Helsinki and received approval from the Institutional Review Board. The questionnaire adaptation was carefully planned to guarantee cultural and contextual appropriateness for all countries. Expert panels evaluated and enhanced the revisions to confirm their appropriateness, ensuring the instrument adequately represented the study’s variables and adapted to the local circumstances.

3.1. Measurement tools

The study assessed variables using a 5-point Likert scale, where one represented ‘strongly agree’ and five represented ‘strongly disagree.’ In order to ensure the reliability and validity of our investigation, the study utilized known measures that have been validated in previous research. The Ethical Climate Questionnaire (ECQ), created by Peterson (2002), assessed employees’ impressions of the ethical climate within their firm. This scale emphasizes qualities including rules-oriented, caring, and independent climates, with original Cronbach’s alpha values of 0.87,

0.85, and 0.82, respectively, and AVE values of 0.62, 0.59, and 0.57. We modified the ECQ to align with the setting of higher education institutions, ensuring the items were pertinent to academic and administrative personnel. The study utilized the Ethical Leadership at Work (ELW) Scale, created by [Kalshoven et al. \(2011\)](#), to assess ethical leadership. This scale evaluates ethical leadership behaviors such as justice, integrity, ethical guidance, and role modeling. The initial Cronbach's alpha for the ELW Scale is 0.92, accompanied by an AVE of 0.68. No significant modifications were implemented to this scale, as it was utilized in its original format. The study evaluated collective moral efficacy by modifying the Collective Moral Efficacy Scale, drawing on the research of [Rullo et al. \(2022\)](#), which is rooted in [Bandura's \(2006\)](#) notion of moral efficacy. This scale assesses the collective confidence of team members in their capacity to meet ethical performance goals and address moral challenges effectively. The initial Cronbach's alpha for this scale is 0.89, accompanied by an AVE of 0.65. The scale was modified to represent the collaborative aspect of ethical decision-making within academic contexts, enhancing its applicability for faculty and staff in higher education. Finally, the study employed the Team Cohesion Scale created by [Carron et al. \(2016\)](#) to assess team members' unity, participation, and commitment to shared objectives. The initial Cronbach's alpha for this scale is 0.91, accompanied by an AVE of 0.70. This scale was utilized in its original form without significant modifications.

Convenience sampling was selected because it provides an appropriate response in the shortest possible time and has been used in several studies in similar contexts ([Wahlström et al., 2019](#)). In addition, the range of responders from various schools and departments prompted the researchers to use convenience sampling approaches ([Al-Swidi et al., 2021](#)). This study excluded control variables for multiple reasons. The primary objective was to examine the relationships among ethical climate, ethical leadership, collective moral efficacy, and team cohesion. Including control variables may have diminished the emphasis on these fundamental constructs. The theoretical framework, specifically Social Cognitive Theory, highlights these constructs' direct and mediated relationships, rendering control variables less pertinent to the study's objectives. The study was conducted in higher education institutions in China, Saudi Arabia, and Pakistan, with a relatively homogeneous sample regarding organizational context, thereby minimizing the necessity for control variables.

3.2. Data analysis and tools

Pilot testing was performed to evaluate the reliability and validity of the questionnaire in each participating nation (China, Pakistan, and Saudi Arabia). The pilot study utilized IBM SPSS Statistics 25 and had 45 surveys, with 15 completed from each country, all within three days. The findings exhibited substantial reliability, with Cronbach's alpha values of 0.881 for the whole sample, affirming the instrument's consistency and appropriateness for application across various cultural and institutional settings. Additionally, the questionnaire underwent local validation to ensure its relevance and applicability in the specific contexts of each country. Expert panels evaluated and enhanced the revisions to confirm their appropriateness, ensuring the instrument adequately represented the study's variables and adapted to local circumstances. This procedure guaranteed that the questionnaire was linguistically, culturally, and contextually suitable for each country. During data analysis, the study scrutinized response patterns among the three countries to identify systemic disparities. In China, respondents generally eschewed radical replies, indicating a cultural inclination toward moderation. In Saudi Arabia, responses were more uniformly dispersed across the Likert scale, signifying a balanced reading of the issues. Certain respondents in Pakistan demonstrated a marginal propensity for elevated scores, possibly indicating a cultural predisposition toward affirmative responses. These variances were considered during data analysis to interpret the results accurately. Two hundred fifty-three

questionnaires were obtained from higher education institutions in China, Saudi Arabia, and Pakistan. The study attained a response rate of 34 %, with a non-response rate of 66 % across the three nations, consistent with accepted standards in organizational and educational research ([Baruch & Holtom, 2008](#)). The primary reasons for non-response were 31 % citing time constraints, 23 % participating in other research studies, 19 % deeming the poll irrelevant to their roles, and 13 % indicating a lack of interest. Only basic demographic data was accessible for 20 % of non-respondents. A comparison between respondents and non-respondents indicated negligible differences, with a little more excellent representation of senior leadership and individuals in research or managerial positions among respondents. The data indicate that non-response bias is negligible and does not substantially impact the generalizability of the results.

Despite the elevated non-response rate, it is within the standard range identified in comparable organizational and educational research ([Baruch & Holtom, 2008](#)). Common causes for non-response include time constraints and prior commitments to other studies, particularly among busy professionals and academics. In China, 93 responses were collected, comprising 60 % male and 40 % female participants. In Saudi Arabia, 70 replies were gathered, exhibiting a gender distribution of 70 % male and 30 % female, by cultural norms. In Pakistan, 90 replies were collected, exhibiting a gender distribution of 55 % male and 45 % female; this varied sample guaranteed representation across institutions and demographic categories in each nation. The gender distribution of respondents in this study illustrates the demographic and cultural contexts of the participating countries. The gender distribution in China, comprising 60 % male and 40 % female, corresponds with enrollment trends in higher education, where a growing equality of genders has been observed ([Carney, 2022](#)). The higher proportion of male respondents in Saudi Arabia (70 % male and 30 % female) aligns with historical gender disparities in leadership roles within higher education ([Alsubaie & Jones, 2017](#)). However, these disparities are being addressed by implementing Vision 2030, which promotes gender equality in education and employment ([Abdullateef et al., 2023](#); [Alsubaie & Jones, 2017](#)). The gender distribution in higher education in Pakistan stands at 55 % male and 45 % female, indicating progress toward gender equality, as endorsed by national policies. The analysis of participants' tenure in leadership positions and age categories revealed diverse distributions across China, Pakistan, and Saudi Arabia, with most leaders falling within the 6–10 years tenure phase and the 40–49 years age group, reflecting the experienced and mid-career dominance in higher education leadership roles. The distributions reflect the current demographic realities in each country, ensuring that the study's findings are based on the actual composition of leadership and management roles in higher education institutions. The study used the statistical technique of PLS-SEM to examine the hypothesized correlations among variables comprehensively. To ensure the accuracy and reliability of the results, SEM incorporates measurement models and assesses convergent and discriminant validity. The study thoroughly analyzed the structural model by examining path relationships, estimating multicollinearity, and determining statistical significance ([Hair, Hollingsworth, et al., 2017](#)).

3.2.1. Measurement model assessment

Structural equation modeling (SEM) was used to assess measurement and structural models. The analysis commenced with evaluating the factor loadings for each indicator to determine the validity of the measurement model. While a factor loading threshold of 0.70 is generally recommended ([Vinzi et al., 2010](#)), lower loadings (between 0.40 and 0.70) are acceptable in social science research, provided their removal improves Composite Reliability (CR) and Average Variance Extracted (AVE) ([Hair et al., 2019](#)). In this analysis, three variables in the Pakistani sample exhibited loadings below 0.60: ethical climate (0.536), team cohesion (0.524), and collective moral efficacy (0.511). In the Saudi Arabian sample, a single item from team cohesion exhibited a loading of

0.448. Following the guidelines established by Hair et al. (2017), removing these items was conducted only after verifying that their exclusion enhanced the AVE and CR values beyond the suggested thresholds. This method maintained the constructs' theoretical significance and content validity, thereby improving the robustness of the measurement model. The Chinese sample exhibited satisfactory AVE and CR values for all constructs. Thus, no items were excluded from this dataset. The decision to remove low-loading items was influenced by specific cultural and contextual factors in Pakistan and Saudi Arabia, including variations in institutional practices that may have affected respondents' interpretations of particular items. The study refined the measurement model to ensure the constructs were statistically valid and culturally appropriate for each country. Construct reliability was assessed using Cronbach's Alpha and CR, with all constructs exceeding the required threshold of 0.700 for the samples collected from China, Saudi Arabia, and Pakistan. The AVE surpasses the recommended threshold of 0.500 for the constructs in China and the total sample, affirming convergent validity (see Table 2). Overall, the combined dataset demonstrated superior quality characteristics to the individual country datasets, suggesting more robust findings at the aggregate level. Discriminant validity was evaluated by analyzing cross-loadings. The factor loadings of items on their respective constructions exceeded their cross-loadings on alternative constructs in all samples, confirming discriminant validity.

Upon refining the measurement model, we note a substantial enhancement in the Goodness of Fit (GoF) values for China, Saudi Arabia, and Pakistan. All three countries now surpass the global threshold of 0.3, and the model fit is improved, as indicated by the Chi-square values and NFI scores, reflecting a more robust and precise alignment of the model (Hair Jr. et al., 2017). The goodness of fit (GoF) for China is 0.42, indicating a robust model fit. The Chi-square statistic for China is 19.3 (df = 9), accompanied by a p -value of 0.03, indicating a statistically significant fit. The NFI result is 0.91, signifying that the model effectively represents the relationships within the data. The goodness of fit (GoF) for Saudi Arabia is 0.40, indicating a robust alignment with the dataset. The Chi-square score is 21.8 (df = 11), with a p -value of 0.04, showing that the model matches the data. The NFI score is 0.89, indicating that the model is well-aligned with the dataset and represents the essential dynamics well. The goodness of fit (GoF) for Pakistan is 0.34, signifying an adequate fit. The Chi-square statistic is 27.6 (df = 13), with a p -value of 0.07, marginally over the conventional threshold for statistical significance, although still suggesting an acceptable fit. The NFI value is 0.84, indicating that the model is predominantly appropriate for the data.

The finding revealed significant differences in ethical leadership, ethical climate, team cohesion, and collective efficacy among the three countries, reflecting their unique developmental stages. The model from China exhibits the utmost reliability and convergent validity across all constructs. Ethical leadership ($\alpha = 0.912$, CR = 0.935, AVE = 0.712) and ethical climate ($\alpha = 0.899$, CR = 0.921, AVE = 0.673) demonstrate remarkable reliability, signifying a well-established framework for ethical practices within China's higher education system (Hair Jr. et al., 2017; Hu et al., 2025). Team cohesion ($\alpha = 0.876$, CR = 0.910, AVE = 0.602) and collective efficacy ($\alpha = 0.889$, CR = 0.914, AVE = 0.657) demonstrate robust dependability and validity, highlighting China's

formidable organizational dynamics and collaborative capabilities. Saudi Arabia, an emerging economy, exhibits moderate validity and reliability statistics. Ethical leadership ($\alpha = 0.845$, CR = 0.870, AVE = 0.561) and ethical climate ($\alpha = 0.811$, CR = 0.840, AVE = 0.524) indicate a transitional phase toward more systematic ethical frameworks; nonetheless, additional enhancements are required to ensure consistency (Hair Jr. et al., 2017; Mohi Ud Din & Zhang, 2023). Team cohesion ($\alpha = 0.798$, CR = 0.821, AVE = 0.495) and collective efficacy ($\alpha = 0.826$, CR = 0.849, AVE = 0.542) demonstrate acceptable fit, indicating advancements in fostering collaboration while underscoring difficulties in attaining optimal organizational integration. Pakistan presents enormous challenges in building strong ethical leadership and fostering a cohesive corporate climate. Ethical leadership ($\alpha = 0.780$, CR = 0.801, AVE = 0.501) and ethical climate ($\alpha = 0.762$, CR = 0.800, AVE = 0.512) exhibit comparatively poor reliability and validity, suggesting that ethical standards and leadership frameworks are under development (Hair Jr. et al., 2017). Team cohesion ($\alpha = 0.721$, CR = 0.795, AVE = 0.518) and collective efficacy ($\alpha = 0.745$, CR = 0.785, AVE = 0.521) demonstrate modest reliability, indicating systemic difficulties in enhancing collaboration and collective results.

3.2.2. Structural model assessment

The initial step in evaluating the structural model involved examining multicollinearity through the Variance Inflation Factor (VIF). VIF values were calculated for all variables items across Pakistan, China, and Saudi Arabia to assess multicollinearity. VIF values are generally deemed acceptable when below 5.0 in most social science studies, but values beyond 10.0 suggest potential multicollinearity issues (Hair Jr. et al., 2017; Mohi Ud Din & Zhang, 2025). The VIF values for each item in this investigation fell within acceptable limits, typically between 1.2 and 3.5 across all nations, indicating no substantial multicollinearity issues. For Pakistan, the VIF values varied from 1.3 to 3.2; for China, they varied from 1.1 to 3.0; and for Saudi Arabia, they ranged from 1.4 to 3.3. The normality of the data was assessed to ensure the robustness of the analysis. Skewness and kurtosis values for all variables across China, Pakistan, and Saudi Arabia were examined and found to be within the acceptable ranges of -2 to $+2$, supporting the normality assumption (Hair Jr. et al., 2017). Specifically, for China, skewness values ranged from -0.85 to 0.72 , and kurtosis values ranged from -1.12 to 1.45 . For Pakistan, skewness values ranged from -0.91 to 0.68 , and kurtosis values ranged from -1.08 to 1.38 . For Saudi Arabia, skewness values ranged from -0.88 to 0.75 , and kurtosis values ranged from -1.15 to 1.42 . These results, combined with the robustness of Partial Least Squares Structural Equation Modeling (PLS-SEM) for handling non-normal data distributions and minor to moderate sample sizes, further validate the methodological approach and the reliability of the findings. Further, in all datasets, all variables, whether the comprehensive sample or the particular datasets for China, Saudi Arabia, and Pakistan, the VIF values remained well below the suggested threshold of 5.0 (Hair Jr et al., 2021) (see Table 3). This confirms that the relationships among the variables are valid and not compromised by multicollinearity issues. In the China sample, VIF values consistently remained low, reflecting China's innovative and advanced practices in ethical leadership and organizational ethics. These results indicate China's prominence in cultivating a robust ethical environment and improving collective

Table 2
Reliability and convergent validity.

Constructs	Pakistan			China			Saudi Arabia		
	α	CR	AVE	α	CR	AVE	α	CR	AVE
Ethical leadership	0.780	0.801	0.501	0.912	0.935	0.712	0.845	0.870	0.561
Ethical climate	0.762	0.800	0.512	0.899	0.921	0.673	0.811	0.840	0.524
Team cohesion	0.721	0.795	0.518	0.876	0.910	0.602	0.798	0.821	0.520
Collective efficacy	0.745	0.785	0.521	0.889	0.914	0.657	0.826	0.849	0.542

Note: α : Cronbach's Alpha, CR: Composite Reliability, AVE: Average Variance Extracted.

Table 3
Multicollinearity statistics.

	Pakistan	China	Saudia Arabia	
Constructs	VIF			CMV (%)
Ethical climate	3.10	2.85	2.73	25.40
Ethical leadership	3.12	2.76	3.01	26.10
Team cohesion	3.35	3.05	3.08	27.00
Moral collective efficacy	2.89	3.02	3.12	–
CMV (Overall)	–	–	–	27.00

Note: Variance Inflation Factor (VIF).

efficacy in higher education. In Saudi Arabia, the VIF values consistently fell within the acceptable range, underscoring the country's ongoing advancement in establishing ethical frameworks and leadership norms. These findings demonstrate Saudi Arabia's continuous endeavors to synchronize its advancing higher education system with global standards. Pakistan exhibited VIF values within the acceptable range but marginally elevated compared to China and Saudi Arabia. This may signify particular systemic challenges and resource limitations Pakistan encounters in enhancing ethical leadership and team unity.

Next, construct validation by examining outer weights, T-statistics, outer loadings, and *p*-values uncovers diverse patterns among China, Saudi Arabia, and Pakistan, indicating their differing levels of growth in ethical leadership, climate, team cohesion, and collective efficacy. China has the most robust metrics in all categories, with outer weights between 0.812 and 0.790, loadings ranging from 0.902 to 0.879, and T-statistics from 13.6 to 15.3 (Table 4). The persistent *p*-values of 0.000 underscore the strong, robust correlations between the indicators and constructs within the Chinese setting. Saudi Arabia has moderate advancement in these domains, with outer weights varying from 0.761 to 0.742, loadings between 0.851 and 0.828, and T-statistics ranging from 11.9 to 13.1. These results indicate the nation's increasing dedication to ethical leadership and practices, especially in higher education and organizational sectors. Conversely, Pakistan's outcomes are relatively below them, with outer weights between 0.732 and 0.701, loadings from 0.802 to 0.754, and T-statistics varying from 9.3 to 12.5. These statistics highlight Pakistan's persistent difficulties in enhancing its ethical leadership and organizational structures, indicating the necessity for targeted initiatives and changes to rectify these deficiencies.

The proposed hypotheses were evaluated, and the findings, presented in Table 5, indicated that all hypotheses have been supported when analyzing the entire sample. This signifies that when data from every country are aggregated, the correlations between the constructs remain robust and consistent universally. Nonetheless, specific hypotheses demonstrated divergence in the analyses unique to each country, indicating the varying developmental phases of organizational and leadership dynamics between countries. The results for H1 (EC → EL) and H2 (EC → CME) consistently affirmed across all samples, demonstrating that the associations between ethical climate and ethical leadership, as well as between ethical climate and collective moral effectiveness, are both significant and broad. For H3 (CME → EL), the hypothesis was validated in the overall sample but rejected in the Pakistan sample. This indicates that collective moral effectiveness exerts

a weaker impact on ethical leadership in Pakistan, likely due to institutional challenges in developing robust collective efficacy. The hypothesis was supported in both China and Saudi Arabia, highlighting the broader focus on collaborative organizational dynamics in these two countries. The hypothesis for H4 (EC → CME → EL) was confirmed across all samples, underscoring a consistent mediating function of collective moral effectiveness between ethical climate and ethical leadership. This indicates that uniformly establishing a robust ethical climate enhances leadership outcomes via the mediating influence of collective moral efficacy. The hypothesis H5 (TC × EC → CME) was rejected in Pakistan but accepted in China, Saudi Arabia, and the overall sample. This indicates that, in China and Saudi Arabia, team cohesion interacts with the ethical climate to augment collective moral efficacy, a relationship that seems less pronounced or underdeveloped in Pakistan. Finally, for H6 (TC × EC → CME → EL), the hypothesis received support in both the overall sample and the Pakistan sample but was refuted in Saudi Arabia. This suggests that although team cohesion and an ethical climate jointly improve moral efficacy and ethical leadership in Pakistan and China, the effect of interaction in Saudi Arabia may necessitate additional reinforcement or adaptation to its unique setting.

Next, the model's explanatory power, evaluated using R^2 and Q^2 statistics, demonstrates evident variations among the countries. China exhibits the greatest explanatory and predictive capacity, with R^2 values between 0.62 and 0.58 and Q^2 values ranging from 0.45 to 0.41. Saudi Arabia exhibits moderate explanatory capability, with R^2 values ranging from 0.55 to 0.54, and robust predictive relevance, with Q^2 values between 0.38 and 0.37. Conversely, Pakistan exhibits lower R^2 values (0.49–0.52) and Q^2 values (0.32–0.34), indicating diminished predictive capability. The comprehensive sample reveals that the model exhibits the highest explanatory power, with R^2 values between 0.64 and 0.61 and Q^2 values between 0.47 and 0.44. These findings validate the model's robustness in various circumstances and emphasize its extensive applicability.

3.2.3. Multi-group analysis

The study's final analysis examined the differential effects of ethical climate on organizational outcomes in China, Pakistan, and Saudi Arabia. The results indicated statistically significant differences in all cases, with partial significance observed in specific routes. The influence of ethical climate on outcomes was consistently more pronounced in China than in Pakistan and Saudi Arabia. The comprehensive multi-group research underscores China's preeminent status, revealing positive and statistically significant disparities of (+0.12 to +0.18) compared to Pakistan and (+0.08 to +0.11) about Saudi Arabia. This signifies China's superior organizational techniques and leadership development. Simultaneously, Saudi Arabia demonstrates moderate advancement, surpassing Pakistan in most metrics, with variances ranging from (−0.04 to −0.07). This indicates its continuous economic and educational changes. Pakistan exhibits the least impact across several dimensions, trailing the two countries and underscoring the necessity for systemic measures to enhance ethical leadership and organizational efficacy. Table 6 presents a summary of the results from the multi-group analysis.

Table 4
Construct validation.

Construct	Pakistan				China				Saudi Arabia			
	Outer weights	T statistic	Outer loadings	P value	Outer weights	T statistic	Outer loadings	P value	Outer weights	T statistic	Outer loadings	P value
Ethical leadership	0.732	12.5	0.802	0.001	0.812	15.3	0.902	0.001	0.761	13.1	0.851	0.001
Ethical climate	0.691	10.8	0.769	0.002	0.781	14.1	0.869	0.001	0.733	11.9	0.813	0.001
Team cohesion	0.620	9.30	0.713	0.004	0.752	13.6	0.832	0.001	0.701	11.2	0.778	0.002
Collective efficacy	0.701	11.1	0.754	0.003	0.790	14.9	0.879	0.001	0.742	12.7	0.828	0.001

Table 5
Path analysis.

Hypothesis	Pakistan			China			Saudi Arabia			Complete		
	β	T	P	Result	β	T	P	Result	β	T	P	Result
<i>H1</i> : EC \rightarrow EL	0.700	11.900	0.001	Accepted	0.840	15.200	0.000	Accepted	0.860	16.000	0.000	Accepted
<i>H2</i> : EC \rightarrow CME	0.690	10.700	0.002	Accepted	0.790	14.000	0.000	Accepted	0.820	15.000	0.000	Accepted
<i>H3</i> : CME \rightarrow EL	0.600	8.800	0.153	Rejected	0.800	13.400	0.000	Accepted	0.810	14.200	0.000	Accepted
<i>H4</i> : EC \rightarrow CME \rightarrow EL	0.640	10.000	0.003	Accepted	0.780	13.800	0.000	Accepted	0.800	14.500	0.000	Accepted
<i>H5</i> : TC \times EC \rightarrow CME	0.590	8.500	0.009	Accepted	0.730	12.900	0.000	Accepted	0.760	13.600	0.000	Accepted
<i>H6</i> : TC \times EC \rightarrow CME \rightarrow EL	0.620	9.300	0.005	Accepted	0.750	13.000	0.000	Accepted	0.780	13.800	0.000	Accepted

Note: β : Beta value, T: t-Statistics, P: p-Values.

4. Discussion

This study examines the relationships among ethical climate, collective moral efficacy, team cohesion, and ethical leadership across various cultural and institutional contexts in China, Saudi Arabia, and Pakistan. The results confirmed that ethical climate significantly impacts ethical leadership, mediated via collective moral efficacy and moderated by team cohesion. However, the extent and alignment of these relationships have diverged across the three contexts, revealing cultural and structural differences. Indeed, *H1* (ethical climate positively influences ethical leadership) was corroborated across all samples, indicating that establishing an ethical climate within higher education institutions is crucial. Furthermore, in the context of China, this relationship emerged as the most robust, indicating that ethical climates are well-suited to collectivist cultural environments that emphasize collaboration and deference to authority. These findings align with university governance methods integrating ethical standards into leadership development via mentorship and collaborative projects. The findings are consistent with research conducted in collectivist cultures such as Japan (Hofstede, 1980). However, they diverge from observations in individualist cultures like the United States, where the influence of ethical climate on leadership may be diminished due to varying cultural values. Saudi Arabia's collectivist tendencies, influenced by Islamic principles and tribal traditions, create a distinctive ethical climate. Islamic values, including justice, accountability, and communal responsibility, correspond with collectivist practices, strengthening ethical leadership. In Pakistan, cultural norms such as biraderi (kinship networks) emphasize group harmony and loyalty, which can enhance team cohesion but may also result in challenges like favoritism, impacting the ethical climate and leadership practices (Alavi, 1972). In Saudi Arabia, tribal traditions promote strong in-group loyalty and hierarchical structures, which can strengthen team cohesion but may also challenge advancing inclusive leadership practices. In Pakistan, biraderi networks frequently emphasize group harmony and loyalty, enhancing team cohesion while potentially fostering favoritism, which can compromise ethical decision-making and leadership practices (Alavi, 1972; Javidan et al., 2006). Conversely, Pakistan demonstrated a comparatively weaker association, probably attributable to issues like inconsistent policy implementation and constrained resources in higher education institutions. Prior research similarly underscores the necessity for governance reforms to enhance ethical climates (Feng et al., 2023). Saudi Arabia demonstrated a significant impact, consistent with its recent Vision 2030 changes to promote ethical governance in universities, including ethics training and rules of conduct at institutions (Thompson & Quilliam, 2024). However, implementing Vision 2030 encounters challenges, including resistance to change from traditional structures and bureaucratic inefficiencies, which may hinder the realization of ethical governance practices in institutional contexts (Abdulateef et al., 2023; Al-Asfour & Khan, 2014). Future research should investigate the effects of these challenges on the alignment of policy and practice.

H2: The collective moral efficacy is positively influenced by ethical climate and has received support in every case. As expected from China's collectivist mindset, the most significant variation in collective moral efficacy attributable to ethical climate was observed here. A great example is the collaborative research conducted by Chinese University faculty, founded on mutual trust in each other's capacity to address ethical dilemmas. Saudi Arabia's performance demonstrates advancement in instilling ethical practices due to governance reforms associated with Vision 2030. The enhancements emphasize the importance of teamwork and accountability in improving collective moral efficacy at universities. Pakistan's endorsement of this hypothesis indicates that ethical climates can enhance collective moral efficacy even in resource-limited contexts, thereby corroborating findings that favor the cultivation of collective confidence through ethical climates under challenging circumstances (Vandenberghe, 2020). While China's high-trust culture

Table 6
Multigroup analysis.

Relationship	Difference (China – Pakistan)	P*	Difference (China - Saudi Arabia)	P*	Difference (Pakistan - Saudi Arabia)	P*
H1.EC → EL	0.140	0.011	0.090	0.020	–0.050	0.035
H2.EC → CME	0.120	0.014	0.080	0.018	–0.040	0.040
H3.CME → EL	0.180	0.009	0.110	0.022	–0.070	0.032
H4.EC → CME → EL	0.160	0.013	0.100	0.021	–0.060	0.037
H5.TC × EC → CME	0.150	0.012	0.090	0.019	–0.050	0.039
H6.TC × EC → CME → EL	0.140	0.015	0.080	0.025	–0.060	0.042

Note.

* The Differences are significant in the relationships between the three countries ($P < 0.05$).

amplifies the influence of ethical climate on collective moral efficacy, conversely, research in low-trust cultures such as Pakistan indicates that systemic challenges may constrain this relationship (Javidan et al., 2006). Systemic issues, including insufficient institutional support and resource limitations in Pakistan, hinder the full realization of collective moral efficacy. The identified challenges underscore the need for specific interventions, such as capacity-building initiatives and policy reforms, to improve ethical practices and leadership development (Abbas et al., 2022). Inconsistent policy implementation and limited funding in Pakistani universities frequently lead to insufficient ethical training programs and constrained leadership development opportunities.

The hypothesis that collective moral efficacy affects ethical leadership (H3) was affirmed in China and Saudi Arabia but rejected in Pakistan. Collective moral efficacy alignment with collectivist cultural values in China enhances its impact on leadership practices. The focus on common objectives and collaboration, along with organized assistance initiatives and cooperative governance structures at Chinese universities, promotes the incorporation of collective moral efficacy into ethical leadership practices. The outcome in Saudi Arabia highlights the influence of governance reforms and institutional restructuring under Vision 2030, which positions collective moral efficacy as a catalyst for effective leadership. The reforms prioritize ethical training and team cohesion, thereby strengthening the influence of collective moral efficacy on leadership behaviors. In resource-rich contexts such as Saudi Arabia, collective moral efficacy significantly impacts leadership outcomes. Conversely, in resource-constrained contexts like Pakistan, systemic issues obstruct this relationship (Abbas et al., 2022; Al-Asfour & Khan, 2014). The rejection of H3 in Pakistan underscores systemic constraints, including inadequate institutional support, inconsistent ethical training programs, and restricted leadership development opportunities. The identified issues diminish CME's ability to affect leadership outcomes. This finding indicates the necessity for specific interventions to enhance the institutional framework and foster collective moral efficacy via capacity-building initiatives and policy reforms designed for the higher education sector in Pakistan. External factors, including economic instability and political uncertainty in Pakistan, exacerbate these challenges, impeding the development of intense ethical climates and leadership practices (Lee et al., 2012). Inconsistent policy implementation and limited funding in Pakistani universities frequently lead to insufficient ethical training programs and constrained leadership development opportunities. Addressing these challenges requires targeted interventions, including capacity-building programs, policy reforms, and enhanced funding for ethical training (Abbas et al., 2022).

The mediating role of collective moral efficacy between ethical climate and ethical leadership (H4) was confirmed across all samples, underscoring collective moral efficacy's crucial role in linking ethical climate to ethical leadership. The cultural and institutional support for ethical practices in China enhances the mediating role of collective moral efficacy. Universities with robust collaborative structures and ethical governance frameworks effectively convert ethical climates into leadership outcomes via collective moral efficacy. Analysis from Saudi Arabia indicates a gradual incorporation of collective moral efficacy into leadership pathways, influenced by the continuous reforms associated

with Vision 2030. The reforms highlight the importance of ethical governance, positioning collective moral efficacy as a crucial mediating factor. In Pakistan, while H4 was accepted, the reduced mediation effect indicates systemic challenges that limit the collective moral efficacy ability to improve leadership outcomes significantly. This highlights the necessity of aligning policies and allocating resources to enhance ethical practices and leadership development within Pakistani institutions. For example, research conducted in resource-limited settings such as Pakistan indicates that targeted capacity-building initiatives can improve the mediating role of collective moral efficacy, thereby connecting ethical climate with leadership outcomes (Javidan et al., 2006; Zeng et al., 2020).

Hypothesis 5, concerning team cohesion's moderating role in the relationship between ethical climate and collective moral efficacy, was accepted in China and Saudi Arabia, while it was rejected in Pakistan. Cohesive teams in China enhance the impact of ethical climate on collective moral efficacy, highlighting the significance of collaboration and shared objectives in improving group efficacy. This dynamic is extensively documented in collaborative research and governance practices. The findings indicate that Saudi Arabia's support reinforces the moderating role of team cohesion, furthering the nation's focus on teamwork and interdepartmental collaboration as outlined in Vision 2030. The nonsignificant result in Pakistan indicates an absence of institutional mechanisms that foster team cohesion, thereby reducing its moderating effect. Interventions designed to enhance collaboration and trust within academic teams are essential to bridge this gap. For instance, research indicates that promoting team cohesion via structured collaboration and trust-building initiatives can strengthen the moderating effect of team cohesion (Smith, 2005).

The moderated mediation hypothesis, H6, which evaluates the role of team cohesion in the relationship between ethical climate, collective moral efficacy, and ethical climate, has been accepted in China and Pakistan but rejected in Saudi Arabia. The alignment of collectivist cultural values with cohesive teamwork enhances the mediating role of collective moral efficacy, effectively translating ethical climates into leadership practices in China. This illustrates the incorporation of strong ethical governance frameworks and collective dynamics that prioritize collaboration, as observed in institutions employing shared governance practices and mentorship initiatives. The low rate in Pakistan may indicate that H6 supports the notion that team cohesion is essential for addressing deficiencies in leadership development despite potential errors. The evidence underscores the significant role of team cohesion in enhancing the effectiveness of collective moral efficacy in mediating ethical leadership. This highlights the importance of targeted initiatives, such as capacity enhancement programs and organizational reforms, to address leadership gaps and improve team cohesion. The rejection of H6 in Saudi Arabia indicates that the swift advancement of educational reforms under Vision 2030 has not incorporated team cohesion into the ethical and leadership frameworks. The transitional nature of these reforms may have contributed to the misalignment in structure and team dynamics necessary for facilitating ethical climate, collective moral efficacy, and ethical leadership. The findings suggest enhancing strategies integrating team cohesion within Saudi universities, focusing on governance and leadership to develop cohesive and adaptive ethical

climates. For example, research on transitional reforms indicates that incorporating team cohesion within leadership frameworks can improve the congruence between ethical climate and leadership outcomes (Neubauer et al., 2021; Zheng et al., 2015).

The multigroup analysis indicated that the proposed relationships rely upon cultural and institutional contexts. China's collective culture and structured governance facilitate enhanced relations among ethical climate, collective moral efficacy, and ethical leadership by creating a suitable synergy between cultural norms and organizational practices. The findings in Saudi Arabia suggest a transitional phase. The governance reforms progressively established ethical climates and team dynamics within leadership development. Multiple hypotheses indicating suboptimal outcomes for Pakistan propose that systemic enhancements are required in policy alignment, resource distribution, and capacity-building initiatives to improve ethical climates, collective efficacy, and team cohesion. External influences, including economic and political contexts, significantly influence ethical climate and leadership. In China, swift economic expansion and rigorous government rules have enabled the incorporation of ethical principles, evidenced by the focus on collaborative governance and mentorship initiatives. In Saudi Arabia, the economic diversification initiatives of Vision 2030 have facilitated governance improvements; nonetheless, obstacles such as opposition to change and bureaucratic inefficiencies persist. Economic volatility and political uncertainty in Pakistan have obstructed the establishment of intense ethical climates and leadership practices, underscoring the necessity for focused interventions to tackle these systemic challenges (Lee et al., 2012; Zeng et al., 2020).

4.1. Implications

4.1.1. Theoretical implications

This research contributes to the literature in several ways: This study enhances the comprehension of ethical climate and leadership by investigating the impact of ethical climate on ethical leadership, mediated by collective moral efficacy and moderated by team cohesion. This study offers an advanced perspective on the connection between ethical climate and leadership, which have been previously examined individually, notably within higher education institutions. The findings correspond with Social Cognitive Theory by illustrating how ethical climate influences leadership behaviors via collective moral efficacy, thus filling a gap in the literature regarding the mechanisms connecting ethical climate to leadership outcomes (Bandura & Cervone, 1986; Mayer et al., 2012). This study enhances cross-cultural literature on ethical leadership by comparing China, Saudi Arabia, and Pakistan. It emphasizes the impact of cultural and institutional circumstances on the interrelations between ethical climate, collective moral efficacy, team cohesion, and ethical leadership. The robust correlation between ethical climate and leadership in China differs from the lesser correlation observed in Pakistan, highlighting the influence of cultural and institutional elements. These findings fill the gap in the research by offering a cross-cultural view on ethical leadership in higher education (Hofstede, 1980; Javidan et al., 2006). This study validates Social Cognitive Theory in higher education by illustrating the interconnection between ethical climate and leadership behaviors through collective moral efficacy and team cohesion. This fills the gap in the literature by offering empirical information about the interaction of these variables in higher education contexts, especially within collectivist cultures. The results indicate that an ethical climate promotes leadership effectiveness by improving collective moral efficacy, which is additionally reinforced by team cohesion (Bandura, 1986; Peterson, 2002).

4.1.2. Practical implications

This study's conclusions possess multiple practical implications for higher education institutions: Advancing Ethical Climate as a Strategic Instrument: The research underscores the significance of cultivating an ethical environment as a strategic mechanism for influencing

stakeholder perceptions and promoting institutional goals. Higher education institutions can conduct ethics training programs, develop explicit ethical rules, and foster collaborative governance structures to improve the ethical climate. These measures can enhance leadership efficacy and organizational results, as evidenced by the robust correlation between ethical climate and leadership in China and Saudi Arabia. Improving Collective Moral Efficacy: The results indicate that collective moral efficacy is essential for converting ethical climate into leadership results. Institutions can improve collective moral efficacy by cultivating a culture of trust, collaboration, and mutual accountability. Universities can facilitate team-building activities, promote collaborative research initiatives, and offer mentorship programs to enhance collective confidence in confronting ethical challenges. The research emphasizes the significance of team cohesion in amplifying the influence of ethical climate on collective moral efficacy and leadership. Institutions can enhance team cohesion by facilitating interdepartmental collaboration, promoting transparent communication, and enacting policies that support teamwork. Universities in Pakistan can tackle systemic difficulties by implementing organized cooperation and trust-building efforts to improve team cohesion. Addressing Systemic Challenges in Resource-Constrained Contexts: The findings underscore the necessity for focused interventions in resource-limited environments such as Pakistan. Institutions can tackle systemic difficulties by harmonizing regulations, distributing resources, and executing capacity-building initiatives to improve ethical behaviors and leadership development. Universities can obtain financing for ethical training programs, create leadership development institutes, and advocate for policy reforms to enhance governance and accountability. Utilizing Vision 2030 in Saudi Arabia: The research elucidates how Saudi Arabia's Vision 2030 changes might improve ethical governance in higher education. Institutions can utilize these reforms by including ethical training and team cohesion into leadership frameworks, assuring alignment of ethical climate initiatives with national development objectives. Universities can partner with government agencies to provide ethics training programs and enhance interdepartmental collaboration as specified in Vision 2030.

4.1.3. Contribution to the literature

This study significantly contributes to the literature by addressing specific gaps and offering actionable insights for theory and practice. For instance, Connecting Ethical Climate and Leadership: Previous studies have predominantly concentrated on the direct correlation between ethical climate and leadership, resulting in a deficiency in comprehending the intervening and moderating mechanisms that elucidate this link (Mayer et al., 2012). This study examines the gap by presenting collective moral efficacy and team cohesion as critical variables that mediate and regulate the relationship between ethical climate and leadership. The results indicate that an ethical climate promotes leadership effectiveness by improving collective moral efficacy, which is additionally reinforced by team cohesion. Augmenting Cross-Cultural Perspectives: Although cross-cultural research on ethical leadership is available, few comparisons have been made among collectivist civilizations such as China, Saudi Arabia, and Pakistan. This research addresses this deficiency by offering a detailed comprehension of how cultural and institutional settings affect ethical leadership (Hofstede, 1980; Javidan et al., 2006). The robust correlation between ethical climate and leadership in China contrasts with the lesser correlation observed in Pakistan, highlighting the influence of cultural and structural elements. The research expands Social Cognitive Theory by illustrating the interrelation between ethical climate and leadership behaviors via collective moral efficacy and team cohesion. This fills a vacuum in the literature by offering empirical information about the interaction of these variables in higher education contexts, especially within collectivist societies (Bandura, 1986; Peterson, 2002). These contributions increase the theoretical comprehension of ethical leadership and offer pragmatic recommendations for higher education institutions to improve ethical practices and leadership results.

4.2. Limitations and future research

This study presents several limitations that require acknowledgment. The dependence on self-report questionnaires may lead to common method bias and social desirability effects, even with procedural precautions like respondent anonymity and validated scales. The sample demonstrated an uneven distribution of responses among universities and a higher proportion of male respondents, especially in Saudi Arabia and China, potentially constraining the generalizability of the findings. Third, the study did not investigate other mediators, such as organizational justice, or moderators, such as cultural diversity, that could further clarify the intricate relationships between ethical climate, collective moral efficacy, and ethical leadership.

Future research must address these limitations by Integrating control variables, including institutional size, financing sources, regional disparities (e.g., in China), resource availability, governance structures (e.g., in Pakistan), and Vision 2030 initiatives in conjunction with gender equity policies (e.g., in Saudi Arabia) and utilizing longitudinal designs and mixed-method approaches, such as qualitative interviews, to acquire profound insights into the dynamics of ethical leadership. Facilitating balanced sampling among institutions and enhancing gender representation, especially in predominantly male environments. Performing cross-cultural analyses to investigate the impact of cultural factors (e.g., individualism versus collectivism, power distance) on moral leadership across various contexts and examining supplementary mediators (e.g., trust, employee engagement) and moderators (e.g., leadership styles, cultural diversity) to enhance the knowledge of ethical leadership within higher education settings.

5. Conclusions

This study examines the influence of ethical climate on ethical leadership, focusing on the roles of collective moral efficacy and team cohesion within higher education institutions in Pakistan, China, and Saudi Arabia. The findings indicate that the ethical climate significantly boosts leadership effectiveness in China, attributed to its collectivist culture and strong institutional frameworks. In contrast, Pakistan's resource limitations and systemic challenges diminish this relationship. Saudi Arabia's Vision 2030 reforms indicate advancement yet encounter challenges in execution. This study theoretically enhances Social Cognitive Theory by revealing the mediating influence of collective moral efficacy and the moderating influence of team cohesion. It provides practical strategies: promoting ethical environments, enhancing trust via team unity, and tackling systemic obstacles in resource-limited settings. These insights provide a roadmap for higher education institutions to cultivate ethical leadership and resilience in diverse cultural and economic settings.

CRediT authorship contribution statement

Kaiser Mohi Ud Din: Writing – review & editing, Writing – original draft, Validation, Software, Methodology, Formal analysis, Data curation, Conceptualization. **Aqsa Tahir:** Writing – review & editing, Conceptualization. **Yang Xiaojuan:** Writing – review & editing, Supervision, Funding acquisition. **Sultan Alqahtani:** Writing – review & editing, Software, Resources, Investigation, Formal analysis. **Nagina Gul:** Writing – review & editing, Validation, Data curation.

Informed consent statement

Informed consent was obtained from all participants involved in this study. Data were collected online, and participants were allowed to voluntarily contribute their information anonymously. We assure participants that the data collected will not be shared with anyone and will be kept strictly confidential throughout this study and subsequent analysis.

Institutional review board statement

All of the experimental procedures performed in this study involving human participants were according to the Declaration of Helsinki and approved by the Institutional Review Board (IRB) in the School of Management at Harbin Institute of Technology Approval Number 2023-15 Dated 2023-09-19.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author utilized ChatGPT to enhance the quality of the manuscript by refining grammar, improving the clarity of the English language, and assisting in expressing ideas more effectively, as English is not the author's first language. Following this tool, the author thoroughly reviewed and edited the content as necessary, taking full responsibility for the final version of the published article.

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Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Data availability

The data supporting this study's findings are available from the corresponding author upon reasonable request.

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