

STRUGGLING FOR SUSTAINABILITY: A QUADRUPLE BOTTOM LINE VIEW OF HEIS IN PAKISTAN

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ABSTRACT

This research highlights the sustainability challenges related to higher education institutions in Pakistan using the quadruple bottom line approach which focuses on economic, social, environmental and corporate spirituality. Higher education institutions are globally emphasizing on sustainability and aligning with sustainable development goals, but developing countries are facing numerous issues in achieving sustainable organizational performance. Analysing the latest literature (2020-2025) this study highlights key challenges affecting higher education institutions in achieving sustainable organizational performance in Pakistan based on systematic literature review. The findings of the study highlight the challenges in all four aspects of quadruple bottom line: Profit as economic sustainability, People as social sustainability, Planet as environmental sustainability and Purpose as corporate spirituality. Addressing the profit, economic challenges, including funding constraints, rising operational costs, and weak revenue diversification, significantly affects the financial sustainability. Directing the people, social challenges such as inequality in access, gender disparities, low sustainability awareness, and low stakeholder engagement further affects the social and institutional impact. Referring the planet, due to limited green infrastructure, inadequate waste management systems, and weak policy implementation environmental sustainability remains affected. Concentrating the purpose, ethical leadership, organizational values, and employee well-being emerges as an underexplored yet critical dimension corporate spirituality influences sustainable organizational performance in higher education institutions of Pakistan. The study highlights challenges related to sustainability are interconnected and structural, leading to fragmented implementation across quadruple bottom line in higher education institutions of Pakistan. This study contributes to the literature by providing a holistic, context-specific framework for understanding sustainability barriers in higher education institutions of Pakistan. The findings of the study provide the pathway for policymakers, higher education institutions and institutional leaders, emphasizing the need for integrated strategies, digital transformation, leadership development, and value-driven governance to enhance sustainable organizational performance in higher education institutions.

Keywords: Sustainable Organizational Performance, Sustainability Challenges, Higher Education Institutions, Quadruple Bottom Line, Triple Bottom Line, Developing Countries, Pakistan



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INTRODUCTION

Role of higher education institutions (HEIs hereafter) is prominent in shaping the societies by contributing to economic development, social progress, environmental concern and ethical transformation (Bui et al., 2024). Over the past few years the notion of sustainability in HEIs has transitioned into more comprehensive quadruple bottom line (QBL hereafter) from the traditional triple bottom line (TBL hereafter) that integrates environmental, economic, corporate spirituality and economic dimensions (Bello et al., 2025). This broadened viewpoint acknowledges the significance of values, ethics, and purpose-oriented leadership in attaining SOP.

Globally, HEIs are aligning their regulations with sustainable development goals (SDGs hereafter), focusing on equal education opportunities, administrative responsibility, and sustainable environmental practices (Gharzeddine & Davies, 2025). However, there are several barriers and hurdles faced by HEIs in developing countries, specifically Pakistan, which hinders their ability to achieve SOP (Shaheen et al., 2024a). These obstacles are holistic, comprehensively interconnected into approaches of institutes, and closely associated among social, economic, environmental, and fields of ethical concern.

Significant growth has been noticed in the student enrolment in HEIs of Pakistan over the past decade, but this development doesn't match with the acceptable financial resources, development of infrastructure, and reforms by the government (Sain et al., 2025). Financial instability, limited fundings, and rising operational costs have applied substantial pressure on HEIs, influencing their long term financial stability (King'ola, 2024). Concurrently, challenges include inequitable access to education, gender inequalities, inadequate stakeholder involvement, and limited understanding of sustainability persist in undermining social sustainability (Zickafoose et al., 2024).

Environmental sustainability is predominantly overlooked, as the majority of HEIs lack green infrastructure, waste management systems, and energy-efficient activities (Ankareddy et al., 2025). The aspect of corporate spirituality, which prioritizes ethical leadership, institutional values, and employee welfare, remains nascent in Pakistani HEIs (Aziz et al., 2025). The lack of value-oriented governance and leadership development frameworks leads to diminished morale, elevated faculty turnover, and a frail organizational culture (Bavardi, 2025).

Although large body of literature is growing related to sustainability in HEIs, most of the studies addresses the isolated dimensions of sustainability rather than focusing a holistic QBL approach (M. Hassan & A. R. Ahmad, 2025). Furthermore, there is limited research that systematically classifies the obstacles faced by HEIs in developing countries particularly Pakistan by addressing the challenges and issues (Zia et al., 2023).

This study seeks to fill this gap by offering a thorough analysis of sustainability concerns in HEIs using the framework of the QBL. Highlighting the challenges and obstacles to achieve SOP this study categorises issues into economic, social, environmental and corporate spirituality dimensions. The results enhance both theoretical understanding and practical application by identifying essential domains for policy intervention and institutional reform. HEIs are progressively anticipated to contribute to sustainable development (SD hereafter) not solely through teaching and research, but also by responsible governance, social inclusiveness, environmental protection and values and purpose driven institutional culture (Cembranel et al., 2024). In this context sustainability in HEIs is more effectively recognized

from a QBL approach. Recent discussion in academia regarding sustainability in HEIs has moved towards more institution wide interpretations rather than confining it to solely environmental or reporting concern (Sahin, 2025).

LITERATURE REVIEW

The sustainability strategy of HEIs in Pakistan is hindered by structural and institutional deficiencies (Rehman & Huma, 2024). According to the HEC-Pakistan (2023), HEIs are still in process of upgrading the digital infrastructure by expanding the scale, reach, and networking expansion through digitization efforts, but still faces the challenges of financial constraints, governance issues and implementation pressures. World-Bank (2024) highlights the spending of approximately below 2% GDP per year by Pakistan despite its 5th rank in world population which indicates the funding issues.

Recent studies further show that sustainability challenges in Pakistani HEIs are not isolated problems; instead, they represent interrelated obstacles encompassing funding, digital capabilities, leadership challenges, innovation, ethics and stakeholder coordination (de Waal et al., 2024). This brings attention to Pakistan as a good case to study how HEIs are trying to maintain performance in all four QBL parameters at the same time. Therefore, this paper argues that the sustainability of HEIs in Pakistan should be viewed as a complex institutional challenge rather than as a set of discrete governance challenges.

Economic Sustainability Challenges

Still economic feasibility is one of the major obstacles for Pakistani HEIs. Limited public funding, inflationary pressure, rising operating costs, and constrained institutional revenue generation collectively weaken universities' ability to invest in infrastructure, faculty development, student support, research, and sustainability initiatives (Hinduja et al., 2023). According to the most recent publication of world bank, the spending of Pakistan's education is less than 2 percent of GDP, Although the report of government for the year 2025 show decrease in expenditure related to education during the financial year, amplifying worries throughout the fiscal health of the sector(World-Bank, 2024). The pressures are particularly pronounced in HEIs, as the implementation of sustainability typically necessitates initial expenditures in digital infrastructure, campus operations, and institutional transformation (Mabotha & Ngcamu, 2026).

The pressure of economy also seems in the shape of poor industry application, a narrow range of revenue channels, and irregular automated operational systems (Dinka & Asfaw, 2026). Recent higher education commission (HEC hereafter) reporting indicates continuing efforts to expand digital connectivity and services across HEIs in Pakistan, However, the enduring existence of digital enablement disparities indicates that numerous institutions remain inequitably poised to capitalize on these advances (HEC-Pakistan, 2023). A current study on digital technology in the perspective of Pakistan HEIs also associates a direct link between student satisfaction, quality of education, and digital condition, highlights that capacity of limited technological infrastructure is not an issue of management it is the issue of institutional sustainability(Ikram et al., 2023).

Social Sustainability Challenges

Social sustainability in Pakistani HEIs is undermined by unequal access, inconsistent quality, less stakeholder engagement, and weak sustainability awareness (Ahmed Mehmood & Muhammad Kamran, 2025). Although HEIs are expected to promote to advancement of life

opportunities, mobility across social strata, career readiness and equity, the existing empirical findings demonstrate that alignment and sustainability consciousness are still fragmented among HEIs (Ogbolu et al., 2026). Recent research on sustainability integration in HEIs emphasizes that embedding sustainability into curricula, student development, and institutional culture is central to long-term social performance, yet this remains challenging in environments with limited resources and fragmented implementation (Lee, 2025).

The disparities between men and women is also a critical concern of human well-being in Pakistan's teaching and learning environment (Shoaib et al., 2025). According to World Economic Forum's Report 2025 ranked Pakistan at 148th among 148 nations, highlighting the pervasive structural obstacles hindering women's educational and professional progress (World-Economic-Forum, 2026). This more extensive national landscape is important for HEIs in light of the fact that it affects future leadership convention, institutional diversity and inclusion, career growth, and student civic engagement. Recent conversations in Pakistan also continue to emphasize that social sustainability in HEIs cannot be separated from gender, access, and social protection concerns (Shaheen et al., 2024b).

Moreover, sustainability-oriented HEIs demands improved institutional outreach with employers, graduates and public sphere (Abo-Khalil, 2024). Recent studies on Pakistani HEIs have argued that alumni involvement and extensive ecosystem collaboration can enhance both educational quality and institutional sustainability. Likewise, contemporary studies on partnership of universities and institutes in Pakistan argues that engagement continues to play a vital role even though still impacted by inter-organizational coordination issues and range of institutes (Ashraf & Javaid, 2024).

Environmental Sustainability Challenges

Environmental sustainability remains one of the weakest areas in most Pakistani HEIs. Current scholarly literature on institutes of higher education sustainability emphasizes reduction of waste generation, optimal resources use, ecological education, eco-friendly infrastructure systems and practices of green university management as essential responsibilities of organization (Shange et al., 2025). Pakistani HEIs continue to demonstrate uneven progress in translating sustainability discourse into campus-level frameworks and quantifiable environmental practices. This includes long lasting issues related to insufficient provision of environmentally sustainable facility, and poor embedding of climate and environmental objectives resource recovery system and weak integration of environmental goals toward strategic planning (Alazaiza et al., 2025).

HEIs inconsistency related to sustainability reporting and green campus recognition highlights the area of improvement related to environmental sustainability in Pakistan (Hinduja et al., 2023). In simple terms, higher education in Pakistan demonstrates the presence of environmental sustainability. However, it is context specific, scattered, and continues to be distinct from institution wide stabilization. That makes environmental performance a challenge of scale, diffusion, and governance rather than merely one of awareness (Syed et al., 2024).

Corporate Spirituality Challenges

The incorporation of corporate spirituality renders the QBL perspective especially pertinent for HEIs in Pakistan (Yousaf & Dogar, 2025). In this study, corporate spirituality encompasses ethical leadership, institutional purpose, value alignment, workplace dignity, and a culture of compassion and accountability (Dissanayake et al., 2025). These qualities are

particularly significant in educational institutions not only produce graduates but also inculcate the norms, social trust and public responsibility (Kruja et al., 2024). However, recent evidence indicates that ethical environment and leadership in HEIs are inconsistent, and that Pakistan's resource constraints and systemic challenges weaken the link between ethical environment and improved organizational outcomes.(Mohi Ud Din et al., 2025)

Recent studies in Pakistan about ethical environment and ethical leadership indicate that quality of leadership, team cohesion, and moral efficacy significantly influence institutional performance, but Pakistan's institutional pressures can reduce the strength of these positive relationships (Mohi Ud Din et al., 2025; Tavanti, 2023). This is very pertinent to sustainability because without trust, fairness, and values-driven leadership, universities struggle to retain talent, support staff well-being, and establish a cohesive long-term objective (Tavanti, 2023). Corporate spirituality should therefore not be treated as a soft add on; it is a strategic institutional condition for SOP in HEIs (Numan et al., 2025).

METHDOLOGY

To examine the sustainability issues in HEIs comprehensively from the perspective of QBL this study uses the SLR approach. The SLR method is particularly suitable for synthesizing existing knowledge, identifying patterns, and providing a structured understanding of complex and multidimensional issues such as sustainability in higher education (M. M. Hassan & A. R. Ahmad, 2025). This study follows the guidelines of PRISMA to assure consistency of results, clarity, and scientific precision. The framework of PRISMA promotes a step-by-step procedure of eligibility, screening, identifying, assessing, and analysing the existing studies (Boaye Belle & Zhao, 2023; Leal Filho et al., 2026).

A comprehensive literature search was conducted across three major academic databases Scopus, Web of Science (WoS), and Google Scholar. the reason for selecting these databases was because of their broader scope of referred literature, research related to higher education, management, and sustainability. The search process was carried out using a combination of keywords and Boolean operators to capture relevant studies. The main query of the database implemented was (Sustainability or SOP) AND (Universities OR Higher Education OR HEIs) AND (Issue OR Barriers OR Obstacles) AND (Developing nations OR Pakistan) Additional searches were conducted using dimension-specific keywords aligned with the QBL framework (economic, social, environmental, and corporate spirituality).

For the validation of standards and significance, the consequent eligibility and ineligibility were deployed, peer-reviewed journal article between the year 2021 and 2025 were involved in eligible criteria. The focus of this study was on sustainability in the context of HEIs, studies responding to issues, barriers, and challenges, and the research was conducted in Pakistan, which is a developing country. Exclusion Criteria followed conference papers, book chapters, and reports, studies published before 2021, articles not related to HEIs, and studies lacking relevance to sustainability challenges.

The selection procedure was followed according to the rules of PRISMA. In the beginning, 320 articles were found from the chosen database, once the copied data were removed, only 260 records were left for review. A two-stage screening process was applied title and abstract screening, resulting in the exclusion of irrelevant studies and full-text review, ensuring

alignment with the inclusion criteria. After completing this process, a final linkage of 55 studies was brought into the review as showed in figure 1. These studies were then systematically categorized based on their theoretical orientation into TBL and QBL frameworks.

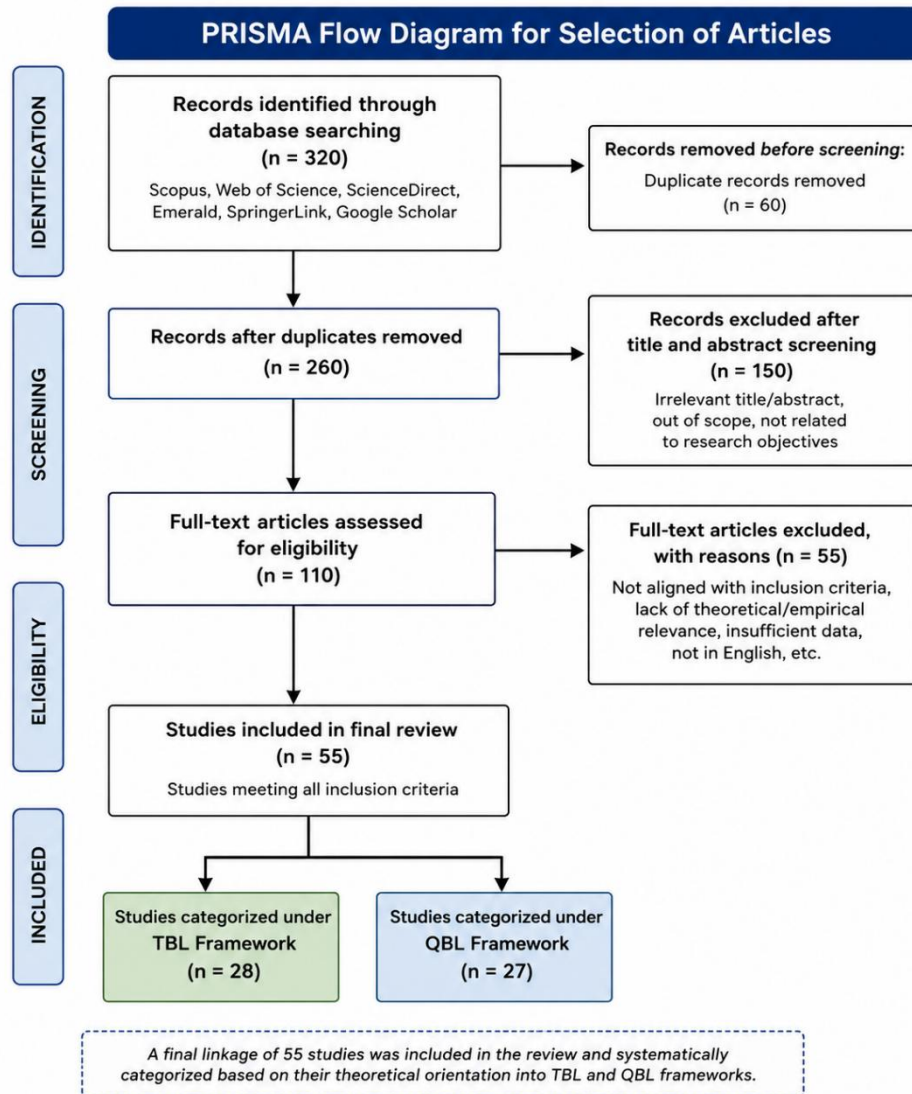


Figure 1: Selection of Studies based on PRISMA

Source: Author

The information of chosen studies was taken out by employing a systematic SLR matrix, which included comprising details on authors, dimensions of sustainability, major results year, background, and methodology. The analysis was conducted using a thematic synthesis approach, where findings were categorized according to the four dimensions of the QBL framework economic sustainability, social sustainability, environmental sustainability, and corporate spirituality. Similarly, the classification of the studies was based on whether they used a point of view, a TBL or QBL, advancing the awareness of regularities and enhancement in sustainability

DISCUSSION

The findings of this study reveal that sustainability challenges in HEIs are multidimensional and interdependent, spanning across economic, social, environmental, and corporate spirituality domains (Kottara et al., 2025). The examination of the studies based on TBL approach is shown in Table 1, showing that the main concern of past researcher is on social disparities, resource inefficiencies, and funding shortage, indicating problems like weak practices of environment, limitation of financial resources, and absence of awareness regarding sustainability (Khan et al., 2025).

Table 1: TBL Based Studies

Author (Year)	Country	Context	Dimension(s)	Method	Key Finding
Habib et al. (2021)	Pakistan	HEIs	Economic Social Environmental	Survey	Weak sustainability integration
Zahid et al. (2020)	Pakistan	HEIs	Economic Environmental	Quantitative	Cost barriers to sustainability
Hossin et al. (2021)	Developing	HEIs	Economic Social Environmental	Survey	SOP linked to resources
Iqbal and Piwowar-Sulej (2021)	Global	HEIs	Social Environmental	Empirical	Leadership influences sustainability
Kohl et al. (2021)	Global	HEIs	Environmental	Review	Green campus critical
Wells et al. (2023)	Global	HEIs	Social	Empirical	Urban-rural inequality
Song (2023)	Global	HEIs	Social	Conceptual	Access disparity
Shah (2023)	Pakistan	HEIs	Social	Analytical	Gender gap issues
Angelaki et al. (2024)	Global	HEIs	Social Environmental	Empirical	SDGs integration gap
Ikram et al. (2023)	Pakistan	HEIs	Economic Social	Empirical	Tech affects quality
Stoop et al. (2021)	Global	HEIs	Social	Empirical	Weak collaboration
Al Aina & Atan (2021)	Developing	HEIs	Economic Social	Empirical	Talent affects SOP
Mazlan & Jambulingam (2023)	Global	HEIs	Economic Social	Empirical	Retention challenges
Hossin et al. (2021b)	Global	HEIs	Environmental	Empirical	Weak environmental adoption
Zahid et al. (2021b)	Pakistan	HEIs	Economic Environmental	Empirical	Funding gaps

However, these studies often treated sustainability dimensions in isolation, resulting in fragmented understanding. In contrast, more recent QBL approach studies, presented in table

2, depicts a movement towards a holistic view including corporate spirituality as a critical dimension (Numan et al., 2025). The studies reveal the importance of ethical leadership, corporate values and employee well-being for sustainable organizational performance (Syahir et al., 2025).

Table 2: QBL Based Studies

Author (Year)	Country	Context	Dimension(s)	Method	Key Finding
Mohd Zawawi and Abd Wahab (2019)	Global	Organizations	Spiritual	Conceptual	Introduces corporate spirituality
Iqbal et al. (2018)	HEIs	SOP	Social Spiritual	Empirical	Spirituality improves SOP
Ahmad et al. (2024)	Developing	HEIs	Social Spiritual	Empirical	Ethical leadership critical
Rizki et al. (2023)	Developing	HEIs	Economic Social Environmental Spiritual	Empirical	Multidimensional sustainability
Panneels (2023)	Global	Sustainability	Economic Social Environmental Spiritual	Conceptual	Evolution of QBL
Ankareddy et al. (2025)	Global	HEIs	Economic Social Environmental Spiritual	Review	SDGs integration
Carmo et al. (2025)	Global	HEIs	Economic Social Spiritual	Empirical	Digital + leadership
Dhar et al. (2022)	Global	Organizations	Economic Social Environmental Spiritual	Empirical	Mediating role
Talaja et al. (2023)	Global	HEIs	Economic Social	Empirical	Strategic flexibility
Agostini et al. (2025)	Global	Firms	Economic Environmental Spiritual	Empirical	Dynamic capabilities

This review posits that economic constraints act as foundational barrier influencing all the other dimensions. As these limitations affects the technology advancement, organizational innovation, and human resource development (Raihan, 2024). Social challenges including gender inequality, lack of awareness and limited stakeholder engagement, while environmental challenges highlight the gap between policy and implementation (Grana et al., 2025). Importantly, corporate spirituality emerges as a missing link in many HEIs, affecting leadership effectiveness, organizational culture, and long-term sustainability outcomes (Syahir et al., 2025). In short findings of the study highlights that sustainability in HEIs can't be achieved through isolated interventions, whereas a collaborative and integrated

approach aligning resources, leadership, innovation and ethical values across all QBL dimensions are required to achieve SOP in HEIs of Pakistan (Numan et al., 2025).

THEORETICAL CONTRIBUTIONS

Firstly, it promotes the framework of sustainability by incorporating corporate spirituality to TBL framework which makes it QBL approach. While recent studies have begun to acknowledge ethical leadership and values-based governance, this study integrates these elements into a coherent QBL lens, demonstrating that ethical climate, purpose, and well-being are not peripheral but foundational to SOP in HEIs (Ankareddy et al., 2025; Numan et al., 2025; Panneels, 2023).

Secondly, the paper provides an extensive and multidimensional aggregation related to the issues of sustainability. Prior work often treats economic, social, or environmental issues in isolation; in contrast, this review shows that challenges are interdependent and reinforcing. For example, investments in green projects and digital infrastructure are restricted by financial factor, effectiveness of leadership practices consists of an integrity-deficient environment, participation of stakeholders is weakened by social discrimination, all of which play a role in inconsistent results of sustainability (Angelaki et al., 2024; Ikram et al., 2023).

Third, the study provides context-specific theorization for developing countries, with Pakistan as a critical case. By combining the current evidence from year 2021 to 2025, it illustrates how, in contrast to advanced contexts, digital access gaps, systematic issues such as low resources and socio-cultural factors affecting directions of sustainability. This contributes to the literature by situating QBL within resource-constrained institutional environments.

Lastly, by dividing scholarly work regarding the orientation of TBL versus QBL, the study demonstrates a progressive change in research of sustainability, from driven by compliance-based emphasis of environment to incorporate, value-oriented organizational sustainability. This distinction strengthens the conceptual argument for adopting QBL in higher education research.

POLICY IMPLICATIONS

The result of the present study provides major implications for institutional leadership in universities, decision makers, and concerned parties of universities. At the policy level, there is a need for increased and more consistent investment in higher education to support long-term sustainability initiatives, particularly in developing countries such as Pakistan where financial constraints significantly hinder institutional performance. Administrative authorities are also expected to initiate well defined sustainability mechanism and performance evaluation metrics was consistent with the QBL to direct pursuit of HEIs toward verifiable and merged consequences. At the institutional level, university leadership must move beyond fragmented efforts and embed sustainability into core strategies, governance structures, and operational processes. This includes providing resources for digital infrastructure, improving access to inclusive education, mainstreaming sustainability into curricula and leveraging responsibility of environmental practices. Moreover, reinforcing ethical leadership and building a culture of corporate spirituality that appreciates ethics, well-being, and purpose can boost company cohesion and SOP.

CONCLUSION

In this study QBL framework is used to comprehensively assimilate the barriers of sustainability in Pakistani HEIs. The data indicate that the HEIs are facing challenges to accomplish SOP because of the interdependent barrier in economic, social, environmental and corporate spirituality aspects. Fiscal instability blocks innovation and investment, social stratification limits engagement and equal participation, ecological practices remain unequal and weakly institutionalized, and poor ethical settings restrict leadership performance and institutional unity. Importantly, these difficulties do not stand on their own, but interact and reinforce each other, leading to fragmented and sub-optimal sustainability outcomes.

The study emphasizes that attaining sustainability in HEIs demands a broad-based, comprehensive transformation, embedding financial capacity, digital capability readiness, equity-focused practices, environmental commitment, and integrity-based management as depicted in figure 1.2. By advancing a QBL based understanding, this research contributes a comprehensive framework for analysing and addressing sustainability in higher education, particularly within developing country contexts.

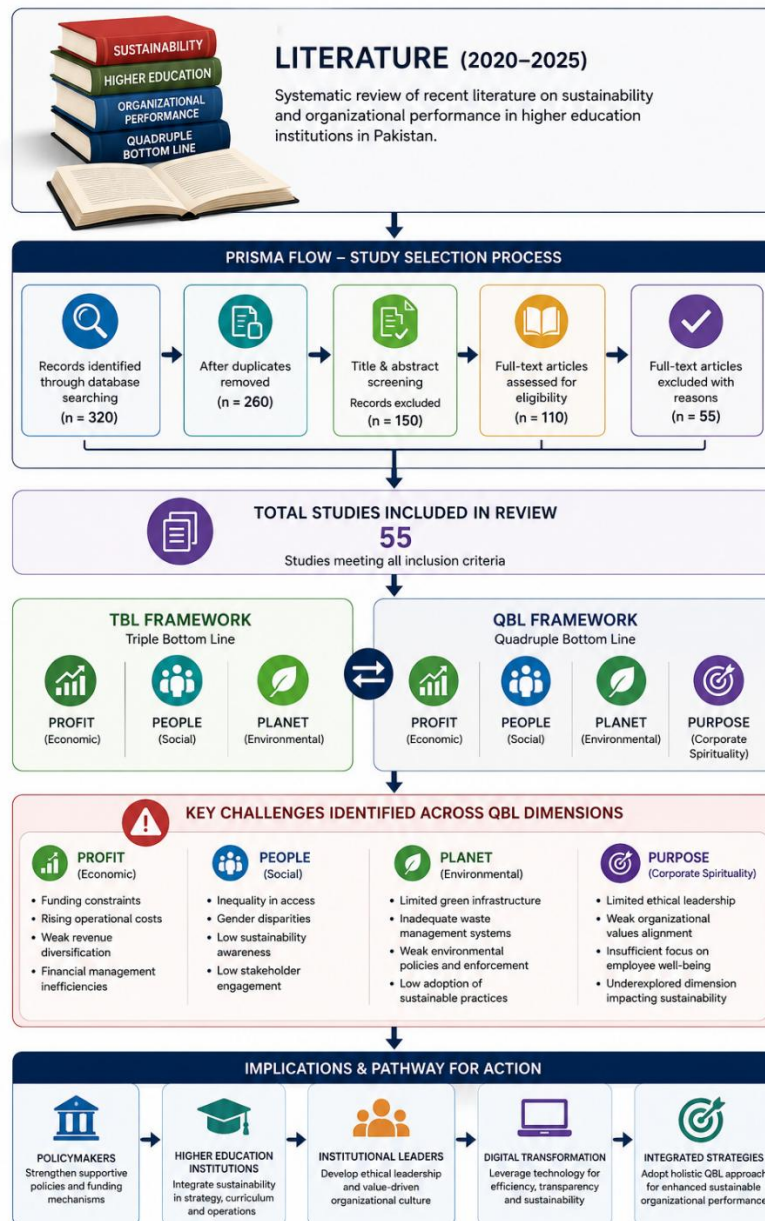


Figure 2: Conclusion of the Study

Source: Author

LIMITATIONS

First, the study relies on a SLR approach, which is inherently dependent on the availability and quality of existing literature. As a result, the outcomes are limited by the intensity and breadth of the reviewed studies. Second, the review is limited to publications from 2021 to 2025 to ensure the use of recent data; however, this may have excluded earlier foundational studies that could provide additional theoretical depth. Third, whereas the research examined on Pakistan, it also comprises observations from broader context of developing countries, which may constraint the representativeness of results to extremely particular environments of institutions. Additionally, the exclusion of grey literature, such as policy reports and institutional documents, may result in the omission of practical insights that are not captured in peer-reviewed publications. lastly, the classification of studies into the perspectives of TBL

and QBL, while beneficial for analysis, is likely to overgeneralize the intersecting and elaborate nature of sustainability elements

FUTURE RESEARCH DIRECTIONS

Future research can build on this study in several meaningful ways. First, there is a need for empirical studies that test the QBL framework in higher education contexts, particularly through quantitative or mixed method approaches that examine its impact on SOP. Second, comparative studies among developing countries may provide deeper insights into the impact of contextual factors on sustainable practices at HEIs. Longitudinal studies are also recommended to study the development of sustainability initiatives over time and to assess the success of policy interventions. In addition, micro-level studies on faculty, students, and leadership perceptions could offer a more nuanced view on the concerns of ethical atmosphere, well-being, and corporate spirituality. Finally, with the rapid development of digital technology, future study should explore the nexus of digital transformation and sustainability, especially in the context of Education 4.0 and its impact on HEIs.

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