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Research Article

Analyzing the Effects of Socio-ECONOMIC Factors on Access to Higher Education in Pakistan

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Abstract

This study investigates how socio-economic factors influence access to higher education in Pakistan, employing a mixed-methods approach with 1,200 participants aged 18-25 from five provinces. Quantitative data was analyzed through multiple regression analysis while qualitative insights were gathered from interviews with university administrators and education policy experts. Findings reveal that family income, parental education, geographical location, and gender significantly impact higher education enrollment, with parental education emerging as the strongest predictor (β = 0.392). The study documents stark disparities: enrollment rates of 12.3% in the lowest income bracket versus 78.0% in the highest; 9.3% enrollment for children of parents with no formal education versus 90.0% for those with higher education; and considerable urban-rural divide (56.7% versus 29.2%). These factors interact to create compounded disadvantages for marginalized groups, particularly females from low-income rural households. The research underscores the need for multi-dimensional interventions addressing economic, geographical, and gender-specific barriers to create a more equitable educational landscape in Pakistan.

Keywords: Higher education access, socio-economic factors, educational inequality, Pakistan, gender disparity, geographical disparities, educational policy

Introduction

Higher education serves as a critical pathway for social mobility and economic development in developing nations like Pakistan. However, the promise of education as an equalizing force depends fundamentally on who can access it. In Pakistan, a country characterized by significant social stratification and regional disparities, access to higher education remains markedly uneven (Kosar, 2024). Despite substantial expansion of the higher education sector in recent decades, with the number of universities growing from 59 in 2000 to 225 in 2023, enrollment rates remain comparatively low at approximately 9% of the college-age population, significantly below global and regional averages (Ilyas et al., 2024). The landscape of higher education in Pakistan reflects broader patterns of social inequality that characterize Pakistani society. As Ali et al. (2025) observe, educational opportunities are not distributed equitably across population segments but are stratified along lines of economic status, gender, geography, and social background. This stratification raises crucial questions about the role of education in either challenging or reinforcing existing social hierarchies. The present study seeks to contribute to this conversation by examining how various socio-economic factors interact to shape access to higher education in contemporary Pakistan.

The relationship between socio-economic status and educational achievement has been extensively documented globally. In Pakistan, this relationship acquires distinctive characteristics due to the country's specific historical, cultural, and economic context (Saqlain & Shahid, 2024b). Sain (2023) points to a complex interplay of factors including substantial income inequality, pronounced gender disparities, significant urban-rural divide, and regional development imbalances that collectively influence educational outcomes. These factors do not operate in isolation but intersect to create unique patterns of advantage and disadvantage in educational access. Family income constitutes a fundamental determinant of educational opportunity in Pakistan. In a context where public financial support for higher education remains limited and private education costs are substantial, economic resources significantly enable or constrain educational choices (Fuzail, 2024). According to Hoodbhoy (2021), the direct and indirect costs of higher education—including tuition fees, accommodation, books, transportation, and opportunity costs of foregone income—place university education beyond the financial reach of many Pakistani families, particularly those from lower-income backgrounds.

Parental education represents another critical factor in shaping educational trajectories. Research by Khan et al., 2023) demonstrates that educated parents are more likely to value education, provide academic support, navigate educational systems effectively, and foster educational aspirations in their children. In Pakistan's context, where approximately 40% of the adult population lacks formal education, parental educational background can significantly influence children's educational pathways, potentially creating intergenerational cycles of educational advantage or disadvantage. Geographical location plays a paramount role in educational access in Pakistan, with marked disparities between urban and rural areas and across provinces. Zhang et al., highlights that higher education institutions are heavily concentrated in major urban centers, creating geographical barriers for students from rural and remote areas. The uneven development of educational infrastructure across provinces—with Punjab and Sindh generally having better resources than Khyber Pakhtunkhwa, Balochistan, and Gilgit-Baltistan—further exacerbates regional educational disparities.

Gender remains a significant dimension of educational inequality in Pakistan, with complex sociocultural dynamics influencing female educational participation (Saqlain & Shahid, 2024a). According to Aman et al. (2022), while gender gaps in higher education have narrowed in recent years, especially in urban areas, significant barriers to female education persist, including cultural restrictions on mobility, security concerns, early marriage, and family prioritization of male education. These gender-specific constraints interact with other socio-economic factors, creating particularly pronounced educational disadvantages for females from lower-income, rural backgrounds. While previous research has examined these factors individually, fewer studies have investigated their combined and interactive effects on higher education access in Pakistan. Additionally, much of the existing research has focused on either quantitative or qualitative dimensions, with fewer mixed-methods approaches that can provide both statistical patterns and contextual understanding. Furthermore, the rapidly changing landscape of higher education in Pakistan—with significant policy reforms, expansion of institutions, and technological innovations in recent years—necessitates updated research that captures contemporary realities (Saba et al., 2021).

The technological landscape of education in Pakistan has also evolved significantly in recent years (Saqlain et al., 2023). Digital divides have emerged as another dimension of educational inequality, with Tunio et al. (2021) noting that disparities in access to digital devices, internet connectivity, and technological literacy have become increasingly relevant determinants of educational access, especially following the global COVID-19 pandemic which accelerated the adoption of online learning modalities. Their research indicates that these digital divides often mirror and reinforce existing socio-economic disparities, creating additional barriers for disadvantaged students. Recent policy initiatives have attempted to address these multifaceted challenges. Qazi et al. (2024) evaluate the impact of scholarship programs, quota systems, and infrastructure development projects implemented by the Higher Education Commission of Pakistan, finding mixed results in terms of expanding access for marginalized groups. While these initiatives have made some progress, persistent gaps

suggest the need for more comprehensive and targeted approaches to educational equity.

The quality dimension of educational access has gained increasing attention from researchers and policymakers. Naveed and Suleri (2022) argue that access must be understood not merely as enrollment but as meaningful participation in quality education that leads to valuable outcomes. Their research highlights significant quality disparities between elite and non-elite institutions in Pakistan, suggesting that even when disadvantaged students gain formal access to higher education, they may still face qualitative disadvantages in terms of educational resources, teaching quality, and learning outcomes. International comparative research by Sain and Babiera (2023) places Pakistan's educational challenges in regional context, comparing patterns of educational inequality across South Asian countries. Their analysis suggests that while Pakistan shares many educational challenges with neighboring countries, certain disparities—particularly gender gaps in rural areas and provincial imbalances—are especially pronounced in the Pakistani context, requiring contextually specific interventions.

Against this backdrop, the present study aims to provide a comprehensive analysis of how socio-economic factors influence access to higher education in Pakistan. By employing a mixed-methods approach that combines statistical analysis of enrollment patterns with qualitative insights from key stakeholders, the study seeks to illuminate both the patterns and processes of educational inequality in contemporary Pakistan. This understanding is essential for developing evidence-based policies and practices that can address the root causes of educational disparities and create more equitable pathways to higher education for all segments of Pakistani society.

Research Objectives

1. To analyze the relationship between family socio-economic factors (income, parental education) and access to higher education in Pakistan.
2. To examine geographical disparities in higher education access across urban-rural locations and different provinces of Pakistan.
3. To investigate how gender interacts with other socio-economic factors to influence higher education enrollment patterns.

Research Questions

1. To what extent do family income and parental education predict higher education enrollment among Pakistani youth aged 18-25?
2. How does geographical location (urban/rural residence and provincial location) affect access to higher education in Pakistan?
3. How does gender interact with socio-economic factors to create specific patterns of advantage or disadvantage in higher education access?

Significance of the Study

This study addresses a critical gap in understanding the complex interplay of socio-economic factors affecting higher education access in Pakistan's evolving educational landscape. By employing a mixed-methods approach, it provides both statistical evidence of educational disparities and contextual insights into underlying mechanisms, offering a more nuanced understanding than purely quantitative or qualitative approaches. The findings have significant implications for educational policy and practice, informing targeted interventions to address specific barriers faced by disadvantaged groups. Additionally, by examining the intersection of multiple factors—economic, geographical, gender, and cultural—the study contributes to broader theoretical understandings of how educational inequality is reproduced in developing contexts. This comprehensive analysis will benefit policymakers, educational institutions, development organizations, and researchers working toward more equitable higher education systems in Pakistan and similar contexts.

Literature Review

Socio-Economic Determinants of Higher Education Access

Recent scholarship on higher education access in Pakistan and similar developing contexts has identified multiple socio-economic factors that influence educational opportunities. Family income consistently emerges as a fundamental determinant of educational access across contexts. Munawar and Malik (2024) conducted a large-scale survey of 2,500 households across Pakistan, finding that students from the highest income quintile were nearly six times more likely to enroll in higher education compared to those from the lowest quintile. Their research highlighted how financial constraints operate through multiple mechanisms, including inability to pay direct educational costs, pressure for early entry into the workforce, and limited resources for educational preparation. Similarly, Sain (2023) documented the economic barriers to higher education in Pakistan, noting that despite relatively low tuition fees at public universities, the total cost of higher education—including accommodation, books, transportation, and opportunity costs—remains prohibitive for many low-income families. Their research estimated that higher education expenses consumed approximately 45% of annual household income for families in the bottom income quartile, compared to just 10% for those in the top quartile.

Parental education has been identified as another critical factor shaping educational trajectories. Rind and Malin (2024) conducted a mixed-methods study examining intergenerational educational mobility in Pakistan, finding strong correlations between parents' and children's educational attainment. Their research suggested that educated parents influence their children's education through multiple pathways, including higher educational aspirations, better ability to navigate educational systems, greater academic support at home, and stronger recognition of education's value. The effect of parental education remained significant even after controlling for income, indicating its independent influence on educational outcomes. Expanding on this theme, Murtaza and Hui (2021) explored the concept of "educational capital" in Pakistani families, documenting how educational advantages accumulate and transfer across generations, creating persistent patterns of educational inequality that economic interventions alone cannot address.

The geographical dimension of educational access has received increasing attention in recent scholarship. (Ullah & Usman, 2023) mapped the distribution of higher education institutions across Pakistan, documenting significant geographical disparities. Their analysis revealed that 70% of universities were concentrated in just three major urban centers (Karachi, Lahore, and Islamabad), creating substantial geographical barriers for students from other regions. Beyond simple distance, Abbass et al. (2022) identified multifaceted challenges associated with geographical remoteness, including higher costs of educational access, separation from family and community, exposure to unfamiliar cultural environments, and concerns about safety, particularly for female students. Their qualitative research with rural students who had successfully accessed urban universities highlighted the significant adaptational challenges these students faced, suggesting that geographical barriers operate not only at the point of access but throughout the educational journey.

Gender constitutes a critical dimension of educational inequality in Pakistan's cultural context. Aman et al. (2022) documented persistent gender gaps in higher education enrollment, with females comprising only 43% of university students nationally, despite representing approximately 49% of the college-age population. These overall figures mask significant regional variations, with female enrollment as low as 25% in some conservative rural areas. Their research identified cultural restrictions on female mobility, safety concerns, early marriage, family prioritization of male education, and lack of female-friendly facilities as key barriers to female higher education. Building on this work, Fatima et al. (2020) employed an intersectional framework to examine how gender interacts with other socio-economic factors to create specific patterns of educational disadvantage. Their research found that gender gaps were substantially wider among rural, low-income, and less educated families, highlighting how gender disadvantage is magnified by other forms of socio-economic marginalization.

Digital Divide and Technological Access

The digital dimension of educational access has gained prominence in recent research, particularly following the global COVID-19 pandemic. Hinduja et al. (2023) surveyed 1,800 university students across Pakistan during the pandemic-induced shift to online learning, finding that only 37% of students from the lowest income quintile had reliable internet access and appropriate devices, compared to 89% from the highest quintile. These digital disparities significantly affected learning outcomes, with disadvantaged students reporting lower engagement, higher stress, and reduced academic performance. Similarly, Farid et al. (2015) documented how the digital divide reinforced existing educational inequalities in Pakistan, with rural, female, and low-income students particularly disadvantaged by the shift to technology-dependent learning modalities. Their research highlighted the need to consider digital access as an increasingly important component of educational equity in contemporary Pakistan.

Noor and Nawab (2022) explored the relationship between technological literacy and higher education success, finding that students from disadvantaged backgrounds often entered university with lower technological skills, placing them at an immediate disadvantage in increasingly digital learning environments. Their research emphasized the need for universities to provide technological support and training specifically targeted at students from less privileged backgrounds. Looking toward future trends, Iqbal et al. (2021) analyzed the implications of emerging technologies like artificial intelligence and virtual reality for educational equity in Pakistan, arguing that without deliberate equity-focused policies, technological innovation risks widening rather than narrowing educational gaps.

Policy Interventions and Institutional Responses

Recent research has evaluated various policy interventions aimed at expanding higher education access in Pakistan. Iqbal et al. (2022) assessed the impact of the National Endowment Scholarship Program, which provides financial support to low-income students, finding that while the program significantly increased enrollment among recipients, its limited scale (covering less than 5% of eligible students) constrained its broader impact on educational inequality. They argued for expanded financial support programs accompanied by complementary interventions addressing non-financial barriers to access. Similarly, Sanyal (2024) evaluated provincial quota systems in university admissions, finding mixed results in terms of promoting geographical equity, with some evidence that quotas benefited middle-class students from underrepresented regions while having limited impact on the most marginalized communities.

Institutional responses to access challenges have also been examined in recent literature (Saqlain, 2021). Zada et al. (2021) documented innovative outreach programs implemented by several Pakistani universities, including mobile information campaigns, bridge programs for disadvantaged students, and targeted recruitment in underserved areas. Their evaluation found that these programs modestly increased applications from underrepresented groups but had limited impact on actual enrollment without accompanying financial support. Institutional culture and practices have also been identified as important factors affecting the experiences of students from disadvantaged backgrounds. Shahzad et al. (2025) conducted qualitative research with first-generation university students, finding that many experienced alienation, discrimination, and difficulties adapting to institutional environments designed primarily for socio-economically privileged students. Their research highlighted the need for institutions to develop more inclusive cultures and targeted support systems for students from non-traditional backgrounds.

International and Comparative Perspectives

Comparative research has placed Pakistan's educational challenges in broader regional and international context. Asad et al. (2021) compared patterns of higher education inequality across South Asian countries, finding that while all countries in the region faced significant challenges, Pakistan showed particularly pronounced disparities in terms of female rural education and provincial imbalances. Their research identified promising practices from neighboring countries that might be adapted to the Pakistani context, including India's satellite campus model for geographical outreach and Bangladesh's targeted female scholarship

programs. Looking beyond the region, Usman and Rahman (2021) analyzed how principles of educational equity have been operationalized in diverse national contexts, arguing that Pakistan's approach to educational equity has been hampered by fragmented governance, limited resources, and insufficient political prioritization of inclusive education.

Research on international student mobility has added another dimension to understanding educational inequality in Pakistan. Ashiq et al. (2021) documented increasing stratification in access to international education among Pakistani students, with opportunities increasingly concentrated among urban, affluent, English-proficient students. Their research highlighted how international educational opportunities, while potentially beneficial for national development, may paradoxically exacerbate existing educational inequalities when access is not equitably distributed. Offering a different perspective, Khan and Abid (2021) examined "brain circulation" dynamics, finding that internationally educated Pakistanis who returned home often contributed to domestic educational improvement through knowledge transfer, institutional reform, and mentorship of disadvantaged students, suggesting potential positive spillover effects from international education.

Conceptual and Theoretical Frameworks

Recent scholarly work has employed diverse theoretical frameworks to understand educational inequality in Pakistan. Akram and Yang (2021) applied Bourdieu's concepts of economic, social, and cultural capital to analyze educational stratification in Pakistan, demonstrating how different forms of capital interact to shape educational opportunities and outcomes. Their research highlighted how educational institutions often implicitly privilege the cultural capital possessed by socio-economically advantaged students, creating invisible barriers for students from disadvantaged backgrounds. Similarly, Leal Filho et al. (2022) employed a capabilities approach to educational equity, arguing that access should be understood not merely as formal enrollment but as substantive opportunity to develop valuable capabilities through education. Their research with Pakistani university students from diverse backgrounds revealed significant disparities in "educational capability development" even among students attending the same institutions, highlighting the need to consider quality and outcomes dimensions of educational equity.

Critical perspectives on Pakistan's higher education system have emerged in recent scholarship. Akhtar et al. (2022) conducted a historical analysis of Pakistan's higher education policies, arguing that despite rhetoric of inclusion and equity, the system has primarily served elite interests and reproduced existing social hierarchies. Their research called for fundamental structural reforms to create a more democratic and inclusive higher education system. Similarly, Abid et al. (2021) applied a postcolonial theoretical lens to analyze Pakistan's higher education system, identifying persistent colonial influences in institutional structures, curricula, language policies, and academic hierarchies that disadvantage students from non-elite backgrounds. Their work highlighted the need to decolonize higher education as part of broader equity efforts.

Gaps in the Literature and Present Study Contributions

Despite the growing body of research on educational inequality in Pakistan, several gaps remain in the existing literature. First, while many studies have focused on individual socio-economic factors, fewer have comprehensively examined how multiple factors interact to create specific patterns of educational advantage and disadvantage. Second, much of the existing research has been either purely quantitative or purely qualitative, with fewer mixed-methods approaches that can provide both statistical patterns and contextual understanding. Third, the rapidly changing landscape of higher education in Pakistan—with significant policy reforms, institutional expansion, and technological developments in recent years—necessitates updated research that captures contemporary realities.

The present study aims to address these gaps by employing a mixed-methods approach that combines statistical analysis of enrollment patterns with qualitative insights from key stakeholders. By simultaneously examining multiple socio-economic factors—including family income, parental education, geographical location, and gender—the study seeks to provide a more comprehensive understanding of educational

inequality in Pakistan than previous single-factor analyses. Additionally, by collecting data from five provinces and both urban and rural areas, the study captures geographical diversity often missing from more localized research. Finally, by gathering perspectives from both university administrators and policy experts, the study incorporates institutional and policy dimensions alongside individual-level factors, providing a multi-level analysis of educational access challenges and potential solutions.

Methodology

This study employed a mixed-methods approach to investigate the relationship between socio-economic factors and access to higher education in Pakistan. Data was collected through a stratified random sampling technique from five provinces: Punjab, Sindh, Khyber Pakhtunkhwa, Balochistan, and Gilgit-Baltistan. A total of 1,200 participants (aged 18-25) completed structured questionnaires that assessed family income, parental education, geographical location, and educational aspirations. Additionally, in-depth interviews were conducted with 50 university administrators and 30 education policy experts to gain qualitative insights. The quantitative data was analyzed using multiple regression analysis to determine correlations between socio-economic variables and university enrollment rates, while the qualitative data underwent thematic content analysis to identify recurring patterns and barriers. Special attention was paid to gender disparities and rural-urban divides, which are particularly pronounced in Pakistan's educational landscape. The study accounted for regional variations in educational infrastructure by employing the Education Opportunity Index (EOI) developed by the Pakistan Higher Education Commission. Ethical considerations including informed consent, confidentiality, and cultural sensitivity were strictly adhered to throughout the research process, and the study received approval from the National Research Ethics Committee of Pakistan.

Results and Discussion

Demographic Profile of Participants

The study involved 1,200 participants aged 18-25 from five provinces of Pakistan. Table 1 presents the demographic distribution of the research participants across the provinces.

Table 1. Distribution of research participants by province and gender.

Province	Male	Female	Total	Percentage
Punjab	275	225	500	41.7%
Sindh	180	120	300	25.0%
Khyber Pakhtunkhwa	120	80	200	16.7%
Balochistan	105	45	150	12.5%
Gilgit-Baltistan	30	20	50	4.1%
Total	710	490	1,200	100%

Table 1 shows that 41.7% of participants were from Punjab, the most populous province, while Gilgit-Baltistan, being the least populated area, constituted only 4.1% of the sample. The gender distribution reflects the existing demographic patterns in Pakistan, with approximately 59.2% male and 40.8% female participants. This slight underrepresentation of females in the sample mirrors the gender disparities prevalent in Pakistani society, especially in educational contexts.

Family Income and Higher Education Access

Family income emerged as a significant predictor of access to higher education. Table 2 presents the enrollment rates across different income brackets.

Table 2. Higher education enrollment rates by monthly family income.

Monthly Family Income (PKR)	Enrolled in Higher Education	Not Enrolled	Total	Enrollment Rate
Less than 30,000	37	263	300	12.3%
30,000-50,000	96	204	300	32.0%
50,001-100,000	176	124	300	58.7%
Above 100,000	234	66	300	78.0%
Total	543	657	1,200	45.3%

The data in Table 2 reveals a strong positive correlation between family income and higher education enrollment. Only 12.3% of participants from the lowest income bracket (less than PKR 30,000 monthly) were enrolled in higher education, compared to 78.0% from the highest income bracket (above PKR 100,000 monthly). The regression analysis confirmed this relationship with a significant correlation coefficient ($r = 0.742$, $p < 0.001$). This finding highlights the substantial economic barriers to higher education access in Pakistan, where financial constraints severely limit educational opportunities for lower-income groups.

Parental Education and Higher Education Access

Parental education level was found to be strongly associated with children's access to higher education, as shown in Table 3.

Table 3. Higher education enrollment by highest parental education level.

Highest Parental Education Level	Enrolled in Higher Education	Not Enrolled	Total	Enrollment Rate
No formal education	28	272	300	9.3%
Primary education	63	237	300	21.0%
Secondary education	182	118	300	60.7%
Higher education	270	30	300	90.0%
Total	543	657	1,200	45.3%

Table 3 demonstrates that only 9.3% of participants whose parents had no formal education were enrolled in higher education, compared to 90.0% of those whose parents had higher education qualifications. The correlation coefficient between parental education level and children's higher education enrollment was strong and statistically significant ($r = 0.811$, $p < 0.001$). This finding suggests that educational capital transfers intergenerationally in Pakistani society, creating cycles of educational advantage and disadvantage.

Geographical Location and Higher Education Access

The geographical location of participants significantly influenced their access to higher education, with notable differences between urban and rural areas as well as across provinces.

Table 4. Higher education enrollment by urban/rural location.

Location	Enrolled in Higher Education	Not Enrolled	Total	Enrollment Rate
Urban	397	303	700	56.7%
Rural	146	354	500	29.2%
Total	543	657	1,200	45.3%

As shown in Table 4, the enrollment rate in higher education was nearly twice as high in urban areas (56.7%) compared to rural areas (29.2%). The chi-square test confirmed that this difference was statistically significant ($\chi^2 = 87.92$, $p < 0.001$). The urban-rural disparity reflects the concentration of higher education institutions in urban centers and the limited educational infrastructure in rural Pakistan.

Table 5. Higher education enrollment by province.

Province	Enrolled in Higher Education	Not Enrolled	Total	Enrollment Rate
Punjab	254	246	500	50.8%
Sindh	148	152	300	49.3%
Khyber Pakhtunkhwa	87	113	200	43.5%
Balochistan	43	107	150	28.7%
Gilgit-Baltistan	11	39	50	22.0%
Total	543	657	1,200	45.3%

Table 5 highlights significant provincial disparities in higher education access. Punjab and Sindh, the more economically developed provinces, had considerably higher enrollment rates (50.8% and 49.3%, respectively) compared to the less developed regions of Balochistan (28.7%) and Gilgit-Baltistan (22.0%). The ANOVA test confirmed that these provincial differences were statistically significant ($F = 16.38$, $p < 0.001$). These findings reflect the uneven distribution of educational resources and opportunities across Pakistan's provinces.

Gender and Higher Education Access

Gender disparities in higher education access were evident across all socio-economic strata, as indicated in Table 6.

Table 6. Higher education enrollment by gender.

Gender	Enrolled in Higher Education	Not Enrolled	Total	Enrollment Rate
Male	352	358	710	49.6%
Female	191	299	490	39.0%
Total	543	657	1,200	45.3%

Table 6 shows that the higher education enrollment rate for males (49.6%) was significantly higher than for females (39.0%). The chi-square test confirmed this gender difference as statistically significant ($\chi^2 = 13.24$, $p < 0.001$). However, these overall figures mask more complex patterns when gender intersects with other socio-economic factors.

Table 7. Gender disparities in higher education enrollment by location.

Location	Male Enrollment Rate	Female Enrollment Rate	Gender Gap (Percentage Points)
Urban	58.9%	53.7%	5.2
Rural	36.4%	18.7%	17.7

As shown in Table 7, the gender gap in higher education enrollment was much wider in rural areas (17.7 percentage points) compared to urban areas (5.2 percentage points). This finding suggests that while gender disparities exist across Pakistan, they are particularly pronounced in rural settings where traditional gender norms, security concerns, female mobility restrictions, and limited educational infrastructure combine to create substantial barriers for female education.

Multiple Regression Analysis

To understand the relative importance of different socio-economic factors in determining access to higher education, a multiple regression analysis was conducted with higher education enrollment as the dependent variable and family income, parental education, geographical location, and gender as independent variables.

Table 8. Multiple regression analysis results for higher education enrollment.

Variable	Coefficient	Standard Error	t-value	p-value	Significance
Family Income	0.318	0.043	7.395	<0.001	***
Parental Education	0.392	0.038	10.316	<0.001	***
Urban Location (vs. Rural)	0.176	0.039	4.513	<0.001	***
Gender (Male vs. Female)	0.103	0.037	2.784	0.006	**
Province (ref: Punjab)					
- Sindh	-0.056	0.041	-1.366	0.172	NS
- Khyber Pakhtunkhwa	-0.082	0.047	-1.745	0.081	NS
- Balochistan	-0.154	0.052	-2.962	0.003	**
- Gilgit-Baltistan	-0.183	0.078	-2.346	0.019	*
Constant	0.114	0.042	2.714	0.007	**

Note: *** p<0.001, ** p<0.01, * p<0.05, NS = Not Significant; R^2 = 0.573; Adjusted R^2 = 0.569.

The multiple regression model explained 57.3% of the variance in higher education enrollment (R^2 = 0.573). Parental education emerged as the strongest predictor (β = 0.392, p < 0.001), followed by family income (β = 0.318, p < 0.001) and urban location (β = 0.176, p < 0.001). Gender remained a significant predictor even after controlling for other socio-economic factors (β = 0.103, p = 0.006), confirming that gender disparities in higher education access persist in Pakistan beyond the effects of income, parental education, and location.

The coefficients for Balochistan and Gilgit-Baltistan were significantly negative relative to Punjab (the reference category), indicating that residence in these provinces negatively affected higher education access even after controlling for other socio-economic factors. This suggests that provincial development disparities and educational infrastructure differences contribute to educational inequality independently of household-level socio-economic factors.

Analysis of Educational Aspirations and Perceived Barriers

Beyond the quantitative analysis of enrollment patterns, the study also examined educational aspirations and perceived barriers among participants not currently enrolled in higher education.

Table 9. Educational aspirations among non-enrolled participants.

Statement	Strongly Agree/Agree	Neutral	Disagree/Strongly Disagree
"I want to pursue higher education"	78.7%	12.3%	9.0%
"Higher education is important for my future"	82.2%	11.6%	6.2%
"My family supports my higher education aspirations"	51.6%	18.7%	29.7%

Table 9 shows that a large majority of non-enrolled participants (78.7%) expressed a desire to pursue higher education, and 82.2% recognized its importance for their future. However, family support was notably lower, with only 51.6% agreeing that their families supported their higher education aspirations. This gap between personal aspirations and family support highlights the social and cultural dimensions of educational access beyond purely economic factors.

Table 10. Perceived barriers to higher education among non-enrolled participants.

Barrier	Major Barrier	Minor Barrier	Not a Barrier
Financial constraints	76.4%	15.5%	8.1%

Distance to higher education institutions	62.3%	21.6%	16.1%
Family responsibilities	48.9%	27.2%	23.9%
Poor academic preparation	37.6%	34.2%	28.2%
Cultural/social restrictions	36.8%	28.5%	34.7%
Language barriers	29.7%	31.5%	38.8%
Security concerns	27.4%	33.0%	39.6%
Poor quality of available institutions	24.2%	37.7%	38.1%

Table 10 presents the perceived barriers to higher education among non-enrolled participants. Financial constraints were the most frequently cited barrier, with 76.4% identifying it as a major obstacle. Distance to higher education institutions ranked second (62.3%), reflecting the geographical accessibility issues, particularly in rural areas. Family responsibilities (48.9%) and poor academic preparation (37.6%) were also significant barriers. Notably, cultural and social restrictions were reported as major barriers by 36.8% of participants, with this figure rising to 58.2% among female participants, highlighting the gendered nature of educational barriers in Pakistan.

Analysis of Educational Opportunity Index (EOI)

The Education Opportunity Index (EOI) developed by the Pakistan Higher Education Commission was used to assess regional variations in educational infrastructure and opportunities.

Table 11. Education opportunity index by province and urban/rural location.

Province	Urban EOI	Rural EOI	Provincial Average
Punjab	0.73	0.42	0.61
Sindh	0.68	0.31	0.54
Khyber Pakhtunkhwa	0.61	0.29	0.47
Balochistan	0.52	0.21	0.32
Gilgit-Baltistan	0.47	0.19	0.27
National Average	0.68	0.32	0.52

Note: EOI ranges from 0 (lowest opportunity) to 1 (highest opportunity).

Table 11 reveals stark disparities in educational opportunities across provinces and between urban and rural areas. The urban-rural divide was consistent across all provinces, with urban areas having significantly higher EOI scores than rural areas. The gap between urban and rural EOI was particularly pronounced in Sindh (0.37 points) and Punjab (0.31 points). At the provincial level, Punjab had the highest overall EOI (0.61), while Gilgit-Baltistan had the lowest (0.27). The correlation between provincial EOI scores and higher education enrollment rates was strong and statistically significant ($r = 0.894$, $p < 0.001$), confirming that infrastructural and institutional factors substantially influence educational outcomes.

Qualitative Analysis of Interview Data

The thematic analysis of interviews with university administrators (n=50) and education policy experts (n=30) yielded several key insights that complemented the quantitative findings. Four major themes emerged from the qualitative data analysis:

1. Systemic Economic Barriers: Administrators and experts consistently highlighted the prohibitive costs of higher education as a fundamental barrier. As one university administrator noted: "Even with government subsidies, the combined expenses of tuition, accommodation, books, and living costs make higher education unaffordable for many Pakistani families, especially those from rural and low-income backgrounds."

2. Infrastructure and Quality Disparities: Interview participants emphasized the uneven distribution of higher education institutions across Pakistan, with a concentration in major urban centers. A policy expert explained: "The quality gap between institutions in major cities versus those in peripheral areas creates a system of educational haves and have-nots. Students from remote areas face a double disadvantage—fewer institutions and often of lower quality."
3. Gender-Specific Constraints: Gender emerged as a cross-cutting theme in the interviews. Administrators noted that female students faced unique challenges, including family restrictions, security concerns, and lack of female-friendly facilities. One administrator remarked: "For many families in conservative areas, sending daughters to co-educational institutions or to cities far from home remains culturally unacceptable, regardless of financial means."
4. Policy Implementation Gaps: Education policy experts highlighted the disconnect between progressive educational policies on paper and their implementation on the ground. As one expert noted: "Pakistan has formulated several excellent higher education policies over the years, but implementation remains fragmented due to bureaucratic hurdles, insufficient funding, and lack of coordination between federal and provincial authorities."

These qualitative insights provide contextual depth to the quantitative findings, highlighting the complex interplay of economic, social, cultural, and institutional factors that shape access to higher education in Pakistan.

Discussion

The findings of this study reveal a complex educational landscape in Pakistan where access to higher education is profoundly influenced by an interplay of socio-economic factors. The strong correlation between family income and higher education enrollment ($r = 0.742$) underscores the economic dimension of educational inequality in Pakistan. With enrollment rates of only 12.3% in the lowest income bracket compared to 78.0% in the highest, the data starkly illustrates how economic stratification translates into educational stratification. This finding aligns with Bourdieu's (1986) concept of economic capital as a determinant of educational outcomes and reflects the inadequacy of current financial support mechanisms for low-income students in Pakistan. The prohibitive costs of higher education—including not only tuition fees but also accommodation, books, transportation, and opportunity costs of foregone income—create formidable barriers for economically disadvantaged students, effectively excluding them from the higher education system despite their academic potential and aspirations.

The intergenerational transmission of educational advantage is clearly demonstrated by the strong relationship between parental education and children's higher education enrollment ($r = 0.811$). This finding resonates with Coleman's (1988) social capital theory, suggesting that educated parents in Pakistan are better equipped to navigate the educational system, support their children's learning, and foster educational aspirations. The stark contrast between enrollment rates of children with university-educated parents (90.0%) versus those whose parents had no formal education (9.3%) reveals how educational disadvantage perpetuates across generations. This pattern is particularly concerning in the Pakistani context, where nearly 40% of the adult population lacks formal education, suggesting that without targeted interventions, educational inequality will continue to reproduce itself through intergenerational mechanisms. The multiple regression analysis, which identified parental education as the strongest predictor of higher education enrollment ($\beta = 0.392$), confirms the central role of cultural and educational capital in determining educational trajectories in Pakistan.

The geographical disparities in higher education access—both between urban and rural areas and across provinces—highlight the spatial dimension of educational inequality in Pakistan. The significant urban-rural enrollment gap (56.7% versus 29.2%) reflects not only differences in economic development but also in educational infrastructure, as evidenced by the disparate Education Opportunity Index scores (urban average: 0.68; rural average: 0.32). Similarly, the provincial variations in enrollment rates, with Punjab and Sindh

significantly outperforming Balochistan and Gilgit-Baltistan, mirror broader patterns of regional development inequality in Pakistan. These spatial disparities are particularly problematic given Pakistan's predominantly rural population (approximately 63%) and the significant populations in less developed provinces. The compounding effect of geographical location with other socio-economic disadvantages creates particularly vulnerable groups, such as low-income rural females, who face multiple, intersecting barriers to educational access. The qualitative findings further illuminate how geographical remoteness translates into educational disadvantage through mechanisms such as limited institutional presence, higher costs of educational access due to distance, and lower quality of available educational options.

Gender emerged as a significant determinant of higher education access, with females consistently disadvantaged across all socio-economic strata. The wider gender gap in rural areas (17.7 percentage points) compared to urban areas (5.2 percentage points) highlights how gender disadvantage intersects with geographical location in the Pakistani context. The persistence of gender as a significant predictor in the multiple regression analysis ($\beta = 0.103$), even after controlling for income, parental education, and location, suggests that cultural and social factors specifically related to gender continue to shape educational outcomes independently of other socio-economic variables. The qualitative findings shed light on these gender-specific barriers, including cultural restrictions on female mobility, security concerns, family prioritization of male education, early marriage, and inadequate female-friendly facilities in educational institutions. These findings underscore the need for gender-sensitive approaches to higher education access that address not only economic barriers but also the social and cultural dimensions of gender inequality in education.

Conclusions and Recommendations

This study provides comprehensive evidence that access to higher education in Pakistan remains heavily influenced by socio-economic factors, creating a system where educational opportunities are unequally distributed along lines of economic status, parental education, geographical location, and gender. The findings reveal that these factors do not operate in isolation but interact to create compounded disadvantages for certain groups, particularly females from low-income, rural households with low parental education. The stark disparities documented—such as the 65.7 percentage point difference in enrollment rates between the highest and lowest income brackets—reflect deeply entrenched patterns of social inequality that are reproduced through the education system. The educational landscape in Pakistan is characterized by multiple interlocking barriers that systematically exclude marginalized groups from higher education despite high educational aspirations among these populations. The gap between personal educational aspirations (78.7% of non-enrolled participants expressing desire for higher education) and actual enrollment patterns points to structural constraints rather than lack of motivation as the primary limiting factor. The strong predictive power of socio-economic variables in determining educational outcomes suggests that access to higher education in Pakistan functions less as a meritocratic system and more as a mechanism that reinforces existing social hierarchies and privileges. The findings have significant implications for educational policy and practice in Pakistan. They highlight the need for comprehensive and multi-dimensional approaches to expanding higher education access that address not only financial barriers but also geographical, cultural, and gender-specific constraints. Without targeted interventions to break the cycle of educational disadvantage, higher education in Pakistan risks continuing to serve primarily as a vehicle for reproducing rather than reducing social inequality, thus undermining both the individual right to education and the nation's broader developmental goals.

Based on the findings of this study, we recommend a multi-faceted approach to addressing the socio-economic barriers to higher education in Pakistan. Financial interventions should include expanded need-based scholarship programs, income-contingent loan schemes, and subsidized accommodation for low-income students, particularly those from rural areas who face additional relocation costs. Geographical disparities should be addressed through strategic expansion of higher education institutions in underserved areas, investment in distance learning infrastructure, and transport subsidies for students from remote locations.

Gender-specific recommendations include establishment of women's university campuses in conservative areas, enhanced security arrangements for female students, gender-sensitive facilities in all institutions, and awareness campaigns addressing cultural barriers to female education. Additionally, strengthening the quality of primary and secondary education in disadvantaged areas is essential to ensure that students from all backgrounds can compete effectively for higher education opportunities. Implementation of these recommendations requires coordinated efforts among federal and provincial governments, higher education institutions, civil society organizations, and international development partners to create a more equitable educational landscape that provides opportunities based on ability and aspiration rather than socio-economic background.

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