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Gender Disparity and Learning Achievements in Higher Education Institutions of Punjab, Pakistan: A Cross-Sectional Analytical Survey

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Abstract

Gender disparity in education remains one of the most persistent and challenging problems of society, especially in less developed nations where policy and practice continue to favour the male gender in access to education. This study investigates gender disparity and its implications for learning achievements in higher education institutions of the Punjab province of Pakistan, with the dual aim of developing empirical evidence and refining theoretical understanding that can inform policy and practice. Adopting a quantitative, cross-sectional analytical survey grounded in a positivist epistemology, the study collected data through a structured questionnaire of fifty items organised into eight sections, administered to a stratified random sample drawn from four major public universities — the University of the Punjab Lahore, Government College University Faisalabad, the University of Gujrat, and Bahauddin Zakariya University Multan. After data cleaning, the final analysis was conducted on 392 respondents, equally divided between male and female students. The findings reveal a fundamental paradox: although female students increasingly match or exceed their male counterparts in academic performance, they continue to encounter systematic barriers in access, campus safety, classroom experience, curricular representation, and the transition to the labour market — barriers that erode the returns to their educational investment. Transportation and safety concerns emerged as the principal access barriers, harassment and biased pedagogies characterised an inequitable learning environment, and anticipated labour-market discrimination undermined female career confidence despite superior academic outcomes. The study concludes that genuine gender equality requires attention not merely to enrolment and achievement metrics but to the quality of educational experiences and the conversion of educational achievement into labour-market outcomes.

Keywords: Gender Disparity, Learning Achievements, Higher Education, Punjab, Pakistan, Gender Equality, Campus Climate, Labour-Market Discrimination.

Introduction

The issue of gender disparity in education remains one of the most persistent and challenging problems of society, found principally in the less developed nations whose policies continue to be biased towards the male gender in matters of education. The problem of gender inequality in higher education is gradually and steadily catching the attention of researchers, policymakers and international organisations, because it constitutes a main barrier to economic development, social progress and the sustainability of development goals. According to the United Nations (2020), while significant progress towards gender equality has been achieved over recent decades,

inequalities in access, participation and outcomes still persist in higher education, especially in South Asia. Traditional male and female roles and economic disadvantage remain the principal factors determining people's educational paths.

The notion of educational gender disparity encompasses various dimensions — enrolment rates, retention, academic performance, choice of study fields and post-graduation outcomes. These disparities are not merely statistical differences but rather reveal underlying structural inequalities associated with cultural, economic and institutional factors that systematically discriminate against one gender over the other (UNESCO, 2021). Higher education, in this regard, reflects disparity not only in terms of simple access but also in respect of qualitative aspects such as learning achievements, the acquisition of skills and overall learning experiences. Research has continually established that gender-based educational inequalities have far-reaching consequences not only for individual students but also for broader societal development, economic growth and the realisation of human rights (World Bank, 2022).

With over 220 million people, Pakistan — like other developing nations — faces enormous challenges at all levels of education in attaining gender parity, with higher education presenting particularly acute concerns. Despite various policy interventions and reform initiatives, the country's educational landscape has continued to evidence marked gender disparities (Ullah & Haque, 2021). Being the most populous province and hosting the greater number of higher education institutions and students, Punjab represents an important case study for exploring gender disparity in higher education. In this context there is a dire need to ascertain the nature, extent and implications of gender disparities in order to articulate effective strategies aimed at promoting educational equity and improving learning outcomes for all students.

The connection between gender difference and academic success in higher education is complex and multi-layered, encompassing the interactions of individual traits, institutional practices, socioeconomic status and cultural contexts. Learning achievements may be understood broadly as the knowledge, skills, competencies and credentials that students acquire through their educational experiences, and these vary according to an extensive array of elements that may be distributed or experienced differently by gender (Alderman et al., 2018). Researchers have established that differences in learning achievements between genders may arise from unequal educational preparation and access to resources, gender bias in curriculum and teaching methods, and unequal institutional support and treatment in academic and social settings (Aikman & Rao, 2021).

The concept and phenomenon of gender disparity denote the pattern of systematic differences in opportunities, resources, outcomes and experiences associated with gender. In the context of education, this may span a broad range of inequalities manifesting at several levels of the educational process, from initial access to completion and post-school outcomes (Subrahmanian, 2005). Contemporary interpretations have moved beyond earlier conceptions preoccupied mainly with sex differences towards a more nuanced understanding that recognises gender as a social construction configuring identities, relationships and institutional structures in complex and multifaceted ways. Gender, on this view, functions not merely as an individual attribute but as one of the main organising principles of social life, ordering opportunities, constraints and experiences across multiple domains.

These dimensions of educational inequality are captured by quantitative indicators traditionally used to measure gender disparity, the most common being the Gender Parity Index (GPI), which expresses the ratio of female to male enrolment, completion or attainment rates. A GPI value of one denotes perfect parity, while values below and above one indicate disparity in favour of males and females respectively (UNESCO, 2020). Although helpful as an overall measure of balance, the GPI has well-noted limitations: it cannot capture qualitative dimensions of inequality, is sensitive to base rates of participation, and fails to reveal inequalities that persist even where

numerical parity has been achieved. A more integrated approach therefore considers a variety of indicators, each reflecting a different dimension of access, participation, progression, attainment and outcome.

The global landscape of gender disparity in higher education has changed dramatically over recent decades. The total number of students enrolled in higher education has more than doubled since 2000, from around 100 million to over 220 million in 2020, with female students accounting for an increasing share of this expansion (UNESCO Institute for Statistics, 2021). Worldwide, women now constitute 52% of all tertiary enrolment. Yet this global average masks considerable regional variation: while female enrolment surpasses male enrolment across North America, Western Europe, Latin America and East Asia, large disparities in favour of males persist in Sub-Saharan Africa, South Asia and parts of the Middle East. The phenomenon of female numerical advantage — the so-called "reverse gender gap" — should not be mistaken for full gender equality, since large inequalities remain along other dimensions including field-of-study segregation, representation in graduate education, faculty composition and post-graduation career outcomes.

The causes of gender disparity are multifactorial, complex and interlinked, operating at several levels ranging from individual characteristics and family background to institutional practices and broader social structures (Stromquist, 2014). Socioeconomic factors are among the most fundamental: poverty and a lack of household resources constrain the educational opportunities of all children, but these constraints often fall disproportionately upon female children because of gendered patterns of resource allocation within households and differential expected returns to education for sons versus daughters (Behrman & Rosenzweig, 2002). Research in Pakistan has consistently shown that the largest gender gap in educational outcomes appears among the poorest households and narrows substantially among higher-income households, illustrating the powerful role of economic constraint in shaping gender disparities (Alderman et al., 1996). Direct costs — tuition, books, transportation — pose formidable barriers, and for female students transportation costs and associated safety concerns may necessitate attendance at nearby institutions, limiting their options.

It is increasingly clear that gender inequality in higher education carries multidimensional and consequential implications for learning achievements, determining not only what students learn but also how they learn, how they engage with educational processes, and the outcomes they ultimately realise (Pascarella & Terenzini, 2005). A direct consequence relates to differential access to educational resources and opportunities: where male and female students enjoy unequal access to quality institutions, well-qualified faculty, learning materials, laboratory and library facilities and technology, their learning achievements are likely to differ (Glewwe et al., 2011). Gender disparities in field-of-study choice carry further implications, since students in different fields acquire different types of knowledge and skills; the concentration of female students in humanities and social sciences and their underrepresentation in STEM fields means that male and female graduates, on average, develop different skill profiles with differential labour-market value (Ma, 2009).

This research holds significance along theoretical, empirical, methodological and policy dimensions for a range of stakeholders — researchers, policy formulators, education administrators and development practitioners (Creswell & Creswell, 2018). Theoretically, while a substantial body of research has examined gender and education within developed contexts and through global comparisons, relatively few studies have focused empirically on the dynamics of gender in higher education within the South Asian context (Durrani & Halai, 2018). The study fills this lacuna by providing detailed empirical evidence on the nature, extent and consequences of gender disparities in Punjab's higher education system, thereby enriching the international literature with insights from an underrepresented context.

The overall aim of this study is to investigate gender disparity and its implications for learning achievements in higher education institutions of the Punjab province, with a view to generating evidence and theoretical insight to inform policy and practice (Maxwell, 2013). Operationally, the study pursues six specific objectives: to identify and measure the major gaps between male and female students in enrolment, field-of-study choice and degree completion across the universities of Punjab; to determine students' daily classroom experiences and whether gender affects participation, relationships with professors and group-work dynamics; to compare male and female students' access to key resources such as libraries, laboratories, technology and mentorship; to identify the role of safety concerns, transportation problems and campus infrastructure in limiting female students' full participation; to assess the effectiveness of current university policies and support systems in advancing gender equality; and to make practical, evidence-based recommendations that university leadership, teachers and policymakers can implement to develop a more equitable and supportive learning environment for all students.

Review of Literature

Although educational participation has improved quantitatively across much of the world, gender disparity in education remains an issue in developing countries such as Pakistan, where traditional cultural and socioeconomic constraints continue to be reflected in both educational opportunity and attainment (Awan & Zia, 2015). Higher education institutions are one site where gender disparities become most pronounced along multiple dimensions, from enrolment rates to academic performance and career outcomes (Malik & Courtney, 2011). Access to education for women was initially restricted by cultural prohibitions, economic constraints and a lack of infrastructure dedicated to female education (Noureen & Awan, 2011). The historical context of education in Pakistan shows that gender disparity has been embedded within the system since independence; although female participation has increased markedly over recent decades, learning outcomes and academic achievements remain an area of concern, since increased access does not necessarily translate into equal learning attainment or equitable educational experience (Saeed & Mahmood, 2020).

Gender disparity in education refers to inequality in the opportunities and learning outcomes of male and female students across the educational system (King & Hill, 1993). Such disparities manifest along many dimensions — disparities in access, in retention, in the quality of education received and in the learning outcomes ultimately achieved. Higher education throughout the Punjab province faces complex challenges that cannot be captured by enrolment data alone but must be considered across the entire educational experience (Shah & Hashmi, 2019). Historical patterns of disparity run deep, with roots in colonial policies and post-independence development approaches that prioritised male education (Qureshi & Rarieya, 2007). While overt barriers have diminished in urban Punjab, their legacy continues to shape patterns of attainment, and subtler forms of gender bias persist within contemporary settings in curriculum design, teaching methodologies and institutional practices (Amin & Chandio, 2013).

Socioeconomic characteristics fundamentally structure the patterns of gender disparity in higher education, interacting in complex ways with family resources, social status and educational opportunity. In Punjab, where economic inequality and social stratification along traditional lines are pronounced, insight into these socioeconomic dimensions is imperative for any explanation of why certain female students succeed while others face seemingly insurmountable barriers (Alderman et al., 1996). The literature consistently indicates that gender disparity cannot be understood outside the broader socioeconomic context within which education takes place — that family income, parental education, urban-rural location and the direct and indirect costs of schooling jointly condition the educational chances of daughters relative to sons.

The determinants of disparity in higher education are complex and multifaceted, involving

individual, family, institutional and societal factors that interact to produce unequal educational opportunities and outcomes (Sathar & Lloyd, 1994). Cultural expectations and long-held gender roles remain fundamental drivers. Traditional views of women's roles place a strong emphasis upon domestic responsibility, child-rearing and service to the family rather than upon individual achievement or career-building (Mumtaz & Salway, 2009). Such cultural schemata influence parental perceptions of daughters' education, which is sometimes regarded as an unnecessary luxury for those expected to assume primarily domestic roles; even supportive families may hold differential goals for women's education — to make their daughters better wives and mothers rather than to prepare them for professional life (Jeffery & Jeffery, 1997).

Higher learning achievements constitute a broad set of outcomes that include academic performance through grades and degree completion, the acquisition of disciplinary knowledge and skills, the development of critical thinking and analytical capabilities, research competencies, practical application skills, and soft skills such as communication and teamwork (Pascarella & Terenzini, 2005). Understanding learning achievements therefore requires moving beyond simplistic metrics such as grade-point averages towards the depth and quality of learning and the development of competencies that support lifelong learning and professional engagement (Aslam & Kingdon, 2011). The measurement of learning achievement faces serious methodological challenges: traditional measures such as examination scores may fail to capture creativity, ethical reasoning and the ability to apply knowledge in novel contexts (Banta et al., 2009), and assessment practices that emphasise recall and reproduction over higher-order thinking may yield misleading indicators that particularly disadvantage students with strong conceptual understanding but weaker rote-memorisation or test-taking skills (Alam et al., 2015).

The relationship between gender disparity and learning achievements is complex and multidirectional. At one level, gender disparity in access to resources and opportunities directly impinges upon learning achievement; at another, patterns of learning achievement reinforce or contest prevailing gender disparities in education and society (Unterhalter, 2007). Selection effects further complicate this relationship. In environments where female access to higher education is limited by social and economic obstacles, those female students who do manage to enrol represent a highly select group who have surmounted significant hurdles (Aziz et al., 2014). Such selection may mean that female students exhibit stronger learning outcomes on average — not because of any inherent female advantage but because only the most motivated and capable female students succeed in accessing higher education — while male students, facing fewer enrolment barriers, represent a more heterogeneous group. Selection effects are thus essential to any sound interpretation of gender patterns in learning achievement.

The literature review reveals that, while gender disparity in education is a major theme of research globally and within Pakistan, substantial gaps persist in understanding the particular relationship of gender disparity to learning achievement at higher levels of education in Punjab. Research in the Pakistani context has focused largely upon primary and secondary education, with limited attention to higher education, and even where higher education has been examined, the focus has typically rested upon enrolment and access rather than upon learning processes and achievements (Shah & Hashmi, 2019). A further gap concerns the measurement and conceptualisation of learning achievement itself, since most existing research relies upon simple metrics such as grades or degree completion without investigating dimensions such as critical thinking, practical competencies and the development of soft skills (Pascarella & Terenzini, 2005). There is a corresponding need for research employing complete measures of learning achievement and for studies that explore value-added learning gains rather than absolute levels of attainment (Astin, 1993).

In sum, the literature demonstrates that gender disparity in education is complex, multifaceted, and shaped by historical, cultural, economic and institutional factors. Although significant

progress has been made in expanding female access to higher education, substantial gender gaps persist in participation rates, field distribution and — most importantly — in learning achievements and educational experiences (Malik & Courtney, 2011). Gender disparity functions at a number of levels, from individual beliefs and behaviours, through family resources and attitudes and institutional practices and cultures, to broader societal norms and structures, and understanding it demands attention to all these levels and their interactions (Bronfenbrenner & Morris, 2006). Gender inequality in education both reflects the broader pattern of gender inequality in society and contributes to reproducing those inequalities across generations, which makes education a critical site for both the understanding and the potential transformation of gender relations (Stromquist, 2007).

Theoretical Framework

Theoretical frameworks provide the conceptual lenses through which the relationship between gender disparity and learning achievements may be conceptualised, analysed and explained. Different perspectives illuminate different aspects of this relationship, and a comprehensive understanding requires drawing upon several theoretical traditions. The thesis accordingly synthesises five frameworks particularly relevant to the Punjab context — human capital theory, social reproduction theory, feminist theory, stereotype threat theory and achievement goal theory.
Human capital theory provides one framework for making sense of decisions about educational investment and their relation to gender disparity. According to this economic theory, individuals and families decide to invest in education on the basis of expected returns, weighing costs against anticipated future benefits (Becker, 1964). From this perspective, gender disparities in education reflect differential calculations of cost and benefit for male versus female education: where female labour-force participation is limited and wage gaps persist, the economic returns to female education may appear lower, leading families to invest less in their daughters' education (Schultz, 2002). The theory has, however, attracted important criticism, for it neglects the non-economic factors influencing educational decisions — overlooking the role of cultural norms that create gender bias even when economic returns are similar, and the discrimination that creates differential returns to equal education (Unterhalter, 2007).
Social reproduction theory offers a critical perspective on how education systems reproduce existing social inequalities, including gender inequalities (Bourdieu & Passeron, 1977). Within this framework, educational institutions are understood to maintain and legitimate larger social hierarchies through hidden curricula, cultural-capital requirements and credentialing processes that favour privileged groups. Gender inequality in educational outcomes, on this view, reflects deeper structural inequalities that schools reproduce through their daily practices (Apple, 2004). Applied to Punjab, social reproduction theory helps explain how higher education institutions, despite official commitments to gender equity, continue to perpetuate inequity through stealthier processes — the gendering of disciplines, differential treatment by sex, and the valorisation of masculine forms of knowledge and behaviour (Reay, 2001).
Feminist theories of education provide particular insight into the critique of gender inequalities within educational settings. Liberal feminist approaches focus upon equal access and opportunity, documenting the barriers that prevent female participation and advocating policy reforms that guarantee equal treatment (Wollstonecraft, 1792). More radical feminist analyses underline the role of patriarchy in the very structures and practices of education that subordinate women, calling for the fundamental transformation of institutions rather than merely women's inclusion within existing ones (hooks, 2000). Socialist feminist frameworks centre upon the interaction of gender and class-based inequalities, stressing how educational inequality both reflects and reproduces gender and economic hierarchies, while post-structural feminist theories challenge fixed categories and binaries, asking how gender itself is constructed and performed in educational

contexts (Butler, 1990).

Stereotype threat theory points to a particular mechanism through which gender stereotypes interact with learning achievements. According to the theory, in situations where negative stereotypes about a group's abilities are salient, individuals experience anxiety about confirming those stereotypes, which in turn undermines their performance (Steele, 1997). Extensive research has shown that stereotype threat can exert significant effects upon academic performance, especially in domains where strong negative stereotypes exist: for female students in STEM fields, awareness of stereotypes about women's mathematical or scientific abilities can undermine both test performance and learning (Spencer et al., 1999). In the Punjab context, stereotype threat is likely to be an important factor in the gender gaps observed in learning achievement, at least within male-dominated fields.

Achievement goal theory offers a means of understanding different kinds of academic motivation and their consequences. The theory distinguishes mastery goals, which concern the development of competence and understanding, from performance goals, which concern the demonstration of ability relative to others; these orientations carry different effects upon learning processes and outcomes (Dweck & Leggett, 1988). There appear to be gender differences in goal orientation with significant ramifications for approaches to, and attainment of, learning, and understanding how educational environments shape students' goal orientations is therefore crucial to creating conditions that foster deep learning for all students (Midgley et al., 2001). Taken together, these five frameworks furnish complementary explanations: human capital theory accounts for investment decisions, social reproduction theory for institutional persistence, feminist theory for structural critique, stereotype threat for performance mechanisms, and achievement goal theory for motivational dynamics.

Research Methodology

This study employs a quantitative research approach, judged the most appropriate for research questions that require the systematic measurement of gender differences, the statistical analysis of relationships between variables and the generalisation of findings to a larger population (Babbie, 2020). The decision is consistent with a positivist epistemological stance, which holds that social reality can be observed and measured objectively and that, through systematic empirical investigation, patterns and regularities in social phenomena may be identified (Neuman, 2014). The research questions — concerned with the magnitude of gender disparity, its impact upon learning achievements and the factors underlying it — lend themselves to quantitative treatment, since these comparisons and measurements are best accomplished through standardised instruments and statistical analysis (Creswell & Creswell, 2018).

The study adopts a cross-sectional research design, in which data are collected once from the sample rather than through the longitudinal tracking of participants (Babbie, 2020). Cross-sectional designs are common in the social sciences because they provide sound insight into the phenomena under study without excessive cost in time and resources, and they fit well where the aim is to portray the current state of affairs, to compare groups, or to examine relationships among variables at a given time (Field, 2018). The design's principal limitation must be acknowledged: causal inference cannot be drawn from cross-sectional data, since such data reveal only correlations at a single point in time and do not establish the temporal sequence required for causal claims (Babbie, 2020). The researcher accordingly fortifies interpretation with theory, incorporates a range of variables that may influence the observed relationships, and exercises appropriate caution. Within this design the study takes up an analytical survey approach — moving beyond mere description to the analysis of variable relationships, group comparisons and the testing of hypotheses through t-tests, ANOVA, correlation analysis and multiple regression (Fowler, 2014).

A multi-stage sampling technique was employed, as the most efficient and cost-effective means of drawing a sample from a large target population (Moser & Kalton, 1979). In the first stage, four universities were selected to represent the regions of Punjab: the University of Gujrat from the north, the University of the Punjab Lahore from the upper region, Government College University Faisalabad from the centre, and Bahauddin Zakariya University Multan from the south. In the second stage, several departments were sampled from each university. In the third stage, population data were collected and a sampling frame constructed using stratified proportionate random sampling, ensuring representation from each stratum. In the fourth stage, the Taro Yamani formula and a sample-size calculation tool were used to select the respondents. A target of 450 students was originally determined — a figure exceeding the minimum requirements for multiple regression with small-to-medium effect sizes, affording adequate power for t-tests and ANOVA, and supporting subgroup analysis within strata defined by university and gender (paras P0672–P0678). During data cleaning, eight questionnaires were found to be incomplete; the final analysis was therefore conducted on 392 respondents.

The research instrument was a structured questionnaire comprising fifty items organised into eight sections covering demographic information; access and enrolment; learning environment and campus culture; teaching methodologies and faculty bias; socio-cultural and familial influences; learning achievements and outcomes; career aspirations and institutional support; and overall perceptions and recommendations. The questionnaire relied principally upon closed-ended items with Likert-scale response formats, facilitating quantitative analysis and ensuring standardisation across respondents; its development drew upon the literature on gender and education, upon validated measurement scales where these existed, and upon adaptation to the specific context of higher education in Pakistan (Fowler, 2014). All statistical analyses were conducted using IBM SPSS Statistics Version 27.0, with significance assessed at $\alpha = 0.05$ using two-tailed tests unless otherwise stated; effect sizes and confidence intervals were also considered, in recognition that statistical significance is not synonymous with practical importance, and corrective measures such as the Bonferroni adjustment were applied where multiple interrelated tests were performed (paras P2032–P2036).

The selection of a quantitative, cross-sectional, analytical survey design is justified on theoretical, practical and empirical grounds. Theoretically, the design aligns closely with research questions concerned with measuring gender disparities, comparing male and female students and identifying factors associated with learning achievement (Creswell & Creswell, 2018). Practically, the design is feasible within the time and resource constraints of doctoral research, since surveys are relatively efficient in data collection while still capable of revealing underlying factors (Bryman, 2016). Empirically, the design permits the gathering of uniform data across institutions and student groups, enabling comparative analysis and generalisation; the use of a structured questionnaire ensures that identical questions are posed to all participants in an identical manner, reducing bias and enhancing the reliability and accuracy of the data (Fowler, 2014).

Results and Discussion

The analysis draws upon data obtained from 392 students across four universities in Punjab. The sample was evenly divided between 196 male respondents (50.0%) and 196 female respondents (50.0%), and the data were examined item by item, across eight thematic sections, to show how gender inequality affects different aspects of higher education. The equal gender distribution itself signals improved female enrolment relative to earlier years; the analysis that follows demonstrates, however, that numerical parity coexists with persistent qualitative disparity.

Access and Enrolment

The research shows that gender inequality in Punjab's higher education operates through distinct patterns. Transportation and safety issues represent the principal obstacles preventing women from accessing higher education, named by 43.4% of participants, and the gender-disaggregated data reveal that females experience these barriers more acutely than males perceive them (46.9% of females versus 39.8% of males citing transportation). The concentration of universities in urban centres (76.5% of respondents being urban) creates particular difficulty for rural female students, who must travel long distances amid insufficient public transport and heightened risk of harassment. This finding supports Malik and Courtney's (2011) account of mobility limitations among Pakistani women. Beyond infrastructure, 34.7% of respondents identified restrictive family attitudes as an access barrier, and 53.6% reported the expectation that female graduates would work only until marriage — confirming Zia's (2015) observation that educational credentials may function as marriage-market assets rather than instruments of professional transformation.

Field segregation is pronounced: males dominate STEM fields (45.4% versus 26.5% of females), while females are concentrated in social sciences and humanities (39.8% versus 20.9% of males). The process of occupational channelling begins at the point of field selection, since only 18.9% of respondents reported full freedom in choosing their field, while 57.7% could choose only from "acceptable" options reflecting socialised gender stereotypes about appropriate female careers. Because STEM fields offer higher salaries and clearer advancement paths, the channelling of women into lower-paid humanities trajectories sustains economic gender disparity. The thesis argues that universities must implement targeted interventions — female STEM scholarships, mentorship programmes and curriculum reform emphasising collaborative learning — to disrupt this segregation.

Learning Environment and Campus Culture

Female students experience less secure and less equitable learning environments than their male peers. Only 14.3% of females found campus social spaces suitable for their needs, against 26.5% of males; only 11.2% felt "very comfortable" using facilities after hours, against 23.0% of males; and 39.8% of females experienced discomfort owing to safety concerns. This differential spatial access carries a direct academic penalty, restricting female students' use of libraries, laboratories and study spaces during the extended hours required for research and examination preparation, and bearing especially upon research students and those living far from campus. Harassment compounds the problem: 56.1% of females reported it as "very" or "somewhat" prevalent, against 35.7% of males, and only 11.7% of respondents judged anti-harassment policies "very effective," while 48.5% cited weak execution and 33.2% treated such policies as effectively non-existent. The thesis links the persistent perception gap to the limited visibility of male-perpetrated harassment within male peer groups and aligns the findings with international evidence on gender-based violence in South Asian universities (Menon et al., 2014).

Teaching Methodologies and Curricular Content

The educational system maintains gender disparity through teaching methods and curricular content that exhibit systematic bias. Some 30.6% of teachers were reported to employ competitive, assertive pedagogies that favour male students socialised towards assertiveness, while disadvantaging female students socialised towards collaboration — a pattern the thesis reads through Belenky et al.'s (1986) account of "connected knowing." Curricular content shows a male-centric bias, with 76.5% of students reporting that course materials predominantly contain male examples, perspectives and authored texts; the resulting "null curriculum" (Eisner, 1985)

deprives female students of role models and implicitly devalues female intellectual contribution. Classroom interaction is similarly unequal: 28.1% of students reported that teachers called upon male students more frequently, echoing Sadker and Sadker's (1994) findings, while the underrepresentation of female faculty (23.0% reporting male-dominated departments) removes mentors whose presence improves female outcomes, particularly in STEM (Carrell et al., 2010). Together, these practices constitute a hidden curriculum that assigns female students a secondary academic status.

Socio-Cultural and Familial Influences

The socio-cultural and familial context exerts a profound influence upon gender disparity in learning achievement. The expectation that female graduates will work only until marriage (53.6%) creates a self-fulfilling prophecy in which families invest less in daughters they believe will not pursue long-term careers, consistent with Kabeer's (2005) account of education as a marriage-market investment. Marriage-timeline pressure, reported by 52.6% of respondents, imposes a compressed schedule that generates stress and shapes field selection towards shorter programmes (Jejeebhoy, 1995). Restrictions on female mobility (51.0%) limit access to distant institutions, fieldwork and evening classes, reflecting family honour concerns documented by Mumtaz and Salway (2009), while constrained field selection (only 18.9% with complete freedom) channels women into "acceptable" fields regardless of ability (Charles & Bradley, 2009). Against these constraints, the presence of family support for education among 53.6% of respondents indicates that families balance cultural restriction with genuine encouragement (Stromquist, 2015) — producing a complex environment within which female students must continually negotiate between aspiration and expectation.

This differential treatment is rooted in gendered patterns of family investment. More than half of respondents (51.5%) reported a perception that girls' education is of lesser value or even a burden, against only 10.2% who regarded it as a superior investment, and this perception translates into reduced financial support, weaker emotional encouragement and higher opportunity costs, since families more readily withdraw daughters from education during financial crises or family emergencies. The thesis locates this logic within Punjab's patriarchal kinship system, in which sons remain lifelong family members and providers while daughters are regarded as "belonging" to their marital families after marriage, so that investment in a daughter's education is seen as benefiting her future in-laws rather than her natal household — a logic that persists despite robust evidence that female education yields substantial social returns in the form of lower fertility, improved child health and nutrition, and higher household income. Restricted aspirations follow directly: only 15.3% of families expected female graduates to attain high-level careers, while 53.6% expected respectable employment only until marriage, encouraging self-selection into flexible, lower-paid fields and discouraging the career-building activities — internships, networking, professional certification — through which competitive advantage is acquired. The thesis reads this self-fulfilling pattern, after Walby (1990), as the reproduction of women's domestic and reproductive labour amid educational expansion, such that the system produces "educated mothers and wives" rather than independent economic agents, and it argues that change requires the visible demonstration of women's professional success, gender-studies curricula that challenge conventional roles, and the active enforcement of anti-discrimination employment law.

Learning Achievements and Academic Outcomes

Despite the documented obstacles, female students perform better across multiple assessment areas: 65.3% of respondents believed females achieve higher GPAs, with female confidence (70.4%) exceeding male confidence (60.2%). The thesis explains this pattern through several mechanisms — the higher entry threshold female students face (so that only highly motivated,

capable women access university), women's higher conscientiousness, which predicts academic success better than intelligence (Poropat, 2009), and the comparatively restricted social activities that, paradoxically, sharpen female academic focus. Yet superior achievement does not convert into opportunity. The achievement-to-opportunity gap is stark: high-performing female students encounter labour-market discrimination (42.3% reporting male preference in recruitment), so that human capital is wasted and inequality persists despite educational success. A parallel research-participation gap (only 23.0% female research capacity) arises from faculty bias in advisor attention and authorship, domestic responsibilities, and female students' tendency to undervalue their abilities — a gap with serious consequences for graduate admission and academic employment.

Career Aspirations and Labour-Market Outcomes

The most extreme gender differences emerge at the transition from education to employment. Only 13.8% of female students expressed strong job-market confidence despite their academic excellence, and 33.2% attributed their lack of confidence to direct experience of gender discrimination. Female students accurately perceive labour-market realities in which credentials do not shield against bias (Moss-Racusin et al., 2012), and 58.7% identified work-life balance as their principal career concern, anticipating the "second shift" of domestic responsibility (Hochschild, 1989). Institutional support is inadequate: only 15.3% reported gender-specific career counselling, while 53.6% received only generic guidance. The thesis observes that gendered career pressures bind both sexes — females prioritising family-compatible work and males facing breadwinner pressure towards high earnings (67.9%) — reproducing the patriarchal division of provider and caregiver even after educational equality is achieved, and it calls for comprehensive female career programming, industry mentorship, alumni networks, negotiation workshops and entrepreneurship support.

Overall Perceptions and Future Outlook

Students' overall perceptions reveal both recognition of progress and demand for further change. A majority (58.7%) believed gender equality in higher education had improved, reflecting rising female enrolment and growing awareness (Inglehart & Norris, 2003), yet 45.9% held that universities needed to do more, and 53.6% supported the implementation of gender-equality policies. Female respondents reported markedly higher personal experience of gender disadvantage (mean 4.00) than male respondents perceived — a perception gap that, the thesis argues, validates a standpoint-theoretic reading in which marginalised groups possess sharper knowledge of the structures that constrain them (Harding, 1991). Encouragingly, 48.5% expressed willingness to act personally to promote gender equality, indicating a readiness for engagement that universities might harness to build momentum for institutional reform.

Asked where responsibility for change lay, stakeholders identified government (42.3%) and families and society (33.2%) as the primary agents, ranking students themselves lowest (4.1%) — an externalising orientation that the thesis warns may retard grassroots activism by deferring to top-down reform. Their preferred solutions were nonetheless concrete and convergent with the study's own analysis. At the governmental level, respondents prioritised safe, dedicated transport (39.8%), awareness campaigns to change societal attitudes (28.1%) and policy implementation or quotas (25.5%), with financial scholarships ranking lower (6.6%); at the university level, they prioritised security improvements (42.3%), gender-sensitivity faculty training (34.2%) and mentoring programmes for female students (18.9%). The prominence of transport and security confirms the centrality of the mobility and safety barriers established earlier in the analysis, while the high ranking of awareness campaigns reflects a recognition that cultural attitudes must be transformed alongside physical infrastructure. Looking ahead, 86.7% of respondents anticipated

improvement over the coming decade — 35.7% expecting major and 51.0% minor advances — an optimism grounded in rising female enrolment, generational change in gender attitudes, and visible female achievement, but tempered by the sober recognition that entrenched inequities will require sustained, coordinated effort across multiple generations to resolve.

Theoretical Implications

The findings require multiple theoretical frameworks for their interpretation. They expose the limitations of human capital theory, whose central premise — that educational investment yields comparable returns across groups — is contradicted by the evidence that male and female students make equivalent investments and achieve comparable or superior female performance, yet encounter divergent career outcomes. Human capital theory fails to register the structural discrimination and cultural barriers that prevent women's educational achievements from translating into labour-market advantage, a failure that gender-stratification scholars address by treating labour markets as gendered institutions in which returns to human capital vary systematically by gender, race and class (Reskin & Roos, 1990).

The consistent perception gaps between male and female respondents support feminist standpoint theory (Harding, 1991), which holds that marginalised groups develop distinctive knowledge grounded in their social position. Females consistently reported higher awareness of harassment prevalence, of the inadequacy of safe spaces, of faculty bias, of career-discrimination concerns and of personal disadvantage. This heightened recognition reflects experiential knowledge unavailable to the privileged, while men's lower awareness reflects the obliviousness that privilege confers. The pattern validates the study's gender-disaggregated methodology, since aggregate data would have concealed precisely these gendered differences in knowledge and experience — and it argues for research designs that centre the perspectives of marginalised groups.

The persistence of segregation amid rising enrolment illustrates social reproduction theory. Although female enrolment and academic performance have risen, universities continue to maintain gender-based academic divides: curricular content concentrated upon male achievement validates male cultural capital while diminishing female contribution; unequal classroom interaction signals which gender holds intellectual authority; field channelling directs students into gendered careers; and a campus climate marked by harassment and unsafe spaces normalises male precedence. The thesis concludes that universities must become counter-hegemonic institutions that actively contest gender norms rather than passively reproduce existing social structures, and that an intersectional lens — attending to the interaction of gender with class, ethnicity, religion, location and disability — is required to capture the compounded disadvantage of, for example, rural female students (Crenshaw, 1989).

The overarching contribution of these findings is the identification of a fundamental paradox: female students achieve superior academic outcomes while facing systematic disadvantage in their educational experiences and career prospects. This paradox exposes the inadequacy of measuring gender equality solely through enrolment and achievement metrics, and it reframes the policy problem as one of securing equitable educational experience and the genuine conversion of achievement into opportunity, rather than merely of expanding access.

Policy Recommendations

The comprehensive findings support a set of evidence-based policy recommendations organised by time horizon. Among the immediate priorities (0–2 years), government and universities should fund dedicated transportation services for female students — university shuttles, subsidised ride-sharing and route-safety improvements — since transportation constitutes their primary access barrier. Universities should simultaneously enhance campus security through improved lighting,

expanded CCTV coverage, security personnel and emergency-response systems, enabling female students to use facilities throughout the day. Anti-harassment policies should be activated through functioning reporting systems that mandate prompt investigation, impose real penalties upon perpetrators, provide support services for survivors, and are reinforced by campus-wide education. Faculty should complete training programmes that develop the capacity to recognise unconscious bias, deliver gender-sensitive instruction, manage equitable classroom discussion and design inclusive curricular materials.

Beyond these immediate measures, the thesis envisages medium-term reform of teaching and curricular content — revising materials to represent female scholars and perspectives, reforming assessment to reward conceptual understanding alongside compliance, and recruiting female faculty to provide mentorship and role models — together with comprehensive female career programming, including industry mentorship, female alumni networks, negotiation workshops, employer partnerships committed to gender equity, and entrepreneurship incubators. In the longer term, breaking the established patterns requires both cultural transformation — the sharing of domestic responsibility and respect for caregiving — and structural reform, including parental leave, affordable childcare, flexible work arrangements, anti-harassment protection and transparent promotion processes. The implementation of these recommendations demands the sustained commitment and collaboration of universities, policymakers, families and students alike.

Limitations and Future Research

Several limitations must be acknowledged. The cross-sectional design limits the ability to draw causal inferences, since the data capture a single point in time and cannot trace how gender disparities develop and change; future research should employ longitudinal designs that track students over time to reveal how disparities accumulate across the educational trajectory and to identify critical points for intervention. The reliance upon self-reported data introduces potential social-desirability and recall biases, which future studies might mitigate by incorporating institutional records, direct observation and objective measures of learning achievement to triangulate findings. The focus upon four public universities in Punjab limits generalisability to private universities, other provinces and other countries, indicating a need for comparative research across diverse institutional contexts. The quantitative approach, finally, captures the magnitude and patterns of disparity but yields limited insight into students' lived experience, so that future qualitative work — interviews and focus groups — would valuably complement the present findings, as would an explicitly intersectional approach examining how gender combines with class, ethnicity, religion and disability to shape outcomes.

Conclusion

This study has examined gender disparity and learning achievements in higher education institutions of Punjab, Pakistan, through a comprehensive analysis of data from 392 students across four public universities. The findings reveal a complex picture of disparities that operate through multiple, interconnected mechanisms and carry profound implications for students' educational experiences and outcomes. Despite increased female enrolment and superior female academic performance, significant gender disparities persist: female students face access barriers related to transportation and safety, experience less equitable learning environments marked by harassment and bias, encounter male-centric teaching methods and curricular content, navigate socio-cultural restrictions upon their mobility and field selection, and confront labour-market discrimination that undermines the very value of their educational achievements.

At the heart of these findings lies a fundamental paradox — that female students achieve superior academic outcomes while facing systematic disadvantage in their educational experiences and

career prospects — which highlights the limitations of measuring gender equality solely through enrolment and achievement metrics. True gender equality requires attention to the quality of educational experience, the equity of learning environments and the conversion of educational achievement into labour-market outcomes. Theoretically, the findings challenge human capital theory while supporting feminist standpoint theory and social reproduction theory, demonstrating that educational investment does not yield equal returns across genders because of structural discrimination and cultural barriers, and that higher education institutions reproduce gender inequality through their practices despite official commitments to equity. The transformation of higher education towards genuine gender equality is therefore essential, not only for realising the full potential of all students but for achieving the broader development goals to which Pakistan is committed.

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