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Effects of Socioeconomic Factors on Demand for Female Higher Education in Rural Khyber Pakhtunkhwa Pakistan

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Keywords:

Female Higher Education, Rural KP, Social and Economic Factors, Perception of Gender Inequality, Access to Higher Education

ABSTRACT

The study's main objective is to analyze the effects of socio-economic factors on demand for female higher education in rural Khyber Pakhtunkhwa (KP) of Pakistan. In this regard, primary data sources have been collected using a quantitative design. Primary data from 400 heads of households in rural KP was collected using a multifactor questionnaire. Social and economic factors were measured via the environment of higher educational institutions, access to higher educational institutions, parental education, distance, perception regarding gender inequality, and economic factors. Data collected from primary sources were analyzed using regression analysis initially via ordinary least square (OLS), but since the problem of heteroscedasticity was detected in the dataset, the OLS estimates became redundant; therefore, weighted least square (WLS) regression estimates were observed and comprehended. The outcomes of the primary data analysis (descriptive and regression analysis) revealed that the environment of higher educational institutions, parental education, and distance from the higher educational institutions had a significant direct effect on demand for female higher education.

In comparison, access to higher educational institutions, gender inequality, and economic factors had an insignificant relationship with the demand for female higher education. Several policies, such as establishing higher educational institutions and boarding facilities in rural areas, were suggested based on the results. Additionally, awareness campaigns either through direct government programs initiation or via Non-Government Organizations (NGOs) were advised to be organized and conducted to increase awareness of both parents and the females themselves regarding the importance and benefits of female higher education.

INTRODUCTION

In the second half of the 20th century, the upsurge in tertiary education stood phenomenal. The ratio of students pursuing tertiary education rose in developing and developed economies, thereby drastically expanding the accommodation of demand growth (OECD, 1978a). Expanding and improved concern in exploring attributes influencing students' involvement in tertiary education is observed. One of the foremost endeavors to differentiate and investigate the acute effects on the need for tertiary education was made by the committee of Robbins in the UK. Among the committee's notable factors were the demographic, social, institutional, and economic factors (Robbins, 1963).

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Subsequent research of the elements affecting tertiary education's demand usually deemed such attributes classified in five major categories: social or familial, individual or psychological, occupational or economic, institutional or structural, and cultural factors (OECD, 1978b). Among several social attributes that can affect demand for tertiary education is the familial factor. Familial factors can further fall into four major categories, namely parental education (Perna, 2005), the environment of the higher educational institute (Poole, Levin & Elam, 2018), access to higher educational institute (Sathar, Lloyd & Haque, 2000; Bülbül, 2017), and personal interest (Perna, 2005; Rasheed, Hussain, Shahzad, Khan, 2021). Families who have better social and educational prominence, for example, are perceived as developing an encouraging environment at home for their children to pursue and continue higher education. The environment of the higher educational institutes also matters when a student pursues higher education. The education environment can be the foremost and essential factor affecting demand for higher education. Unlike other market participants, higher educational institutes also work closely with the external environment comprising three key extents, namely micro, macro, and mega environment (Beketova, 2016). The mega environment is the global economic space that dynamically changes with integration and globalization. The mega environment in higher educational institutes can be the information environment, technological advancements, and drastic transformations.

On the other hand, the macro-environment is associated with the procedures of informatization such as conventional learning, distance learning, and e-learning, while the microenvironment is the commercialization of education or, in other words, the quality enhancement education (Beketova, 2016). Accessibility of the higher educational institutes also plays a vital role in the demand for higher education. The students prefer a nearby and accessible institute to the institutes situated in far-flung regions alongside quality education (Sá, Florax & Rietveld, 2004). Likewise, students' personal interest to pursue higher education also depends upon the faculty member's desire to engage the students in academic activities and the structure and locality of the higher educational institute (Rasheed et al., 2021; Ghali, Miklius & Wada, 1977).

Studies of the impact of familial factors on demand for higher education performed in different economies have consistently recounted a significant association between familial factors and the participation of students in tertiary education (Poole et al., 2018). Colleagues' impact on scholastic desires has commonly been reported to have a negligible impact (Bülbül, 2017). In the same manner as individuals like career counselors and teachers (Poole et al., 2018). For example, Poole et al. (2018) noticed that among higher secondary school students, the career counselors were the least often observed consultation source on tertiary education than compared to the faculty and family members. Besides familial and social factors, individual and psychological factors are also significant since they also affect the demand for tertiary education. A common psychological factor is the student's ability (Menon, 1998).

Other factors considered by the scholars towards higher education aspects are students' attitudes and perceptions (Gölpek & Çiftçioglu, 2014).

During the 1960s, with the theory of human capital advent, economic attributes have broadly understood as affecting the demand for tertiary education. This theory suggests that students are economic individuals since they demand tertiary education when the expected benefits derived from education are more significant than the students' cost on pursuance of education. Several studies supported this theory and its interpretation of the demand for tertiary education (Savoca, 1990; Mattila, 1982). Both government and international agencies have made several efforts to improve the higher education systems in developing nations; however, despite all the efforts, the literacy rate of Pakistan in comparison to the rest of the developing world still stands low and precisely for females. It is mainly due to adverse attitudes of parents towards females, inhabiting a culture, early marriages, and gender inequality.

To date, there are several studies conducted in the field to report about the factors affecting demand for higher education (Atinaf & Petros, 2016; Parvazian et al., 2017; Oliveira et al., 2015; Gölpek & Çiftçioglu, 2014; Canton & De Jong, 2005; Ayalon, 2003; Jacob, 2002; Menon, 1998; Cotter et al., 1998; Verdú, 1998 and Jacobs, 1996). To describe, Parvazian et al. (2017) investigated the increased participation of women in higher education due to sociocultural change; Menon (1998) reported the factors impacting the youth to select tertiary education over direct employment. The study attempted to figure out the significance of examining the student’s motivational characteristics and behaviors to comprehend and possibly its influence on the higher education demand of youth. The study of Gölpek & Çiftçioglu (2014) argued against the individual’s social and economic status about higher education. The authors reported that individuals with higher social and economic status are expected to receive higher education than those with lower social and economic status (Parvazian, Gill & Chiera, 2017). Oliveira et al. (2015) performed a macro study in which the author identified and examined the relevant factors of aggregate demand for higher education in Portugal. The factors identified were social, cultural, economic, and personal factors.

Similarly, several authors reported different factors affecting the demand for higher education, such as Canton & De Jong (2005) financial support, (Jacob, 2002) gender inequality, (Verdú, 1998) family characteristics, (Jacob, 1996) gender inequality, and access to higher education (Cotter, 1998) family characteristics, political and gender inequality (Ayalon, 2003) gender inequality. These studies tried to investigate the attributes affecting the demand for tertiary education that have been restricted to one set of factors, resultantly providing a partial and prejudiced perspective on the decision makings of students regarding pursuance of higher education. Also, Pakistan is a developing nation, and consistently experiencing such problems is repeatedly ignored by academicians precisely when it comes to the

pursuance of female's higher education. Thus, the study aims to address these issues by examining the effects of socioeconomic factors on demand for female higher education in rural KP of Pakistan.

Higher Education in Pakistan

Initially, Pakistan had a shallow profile in education. The state of Pakistan put efforts in this sector to improve it; however, making it the foremost priority failed. Consistent effects on private sectors and government, particularly in the 1990s, added a link of educational institutions all around the country. The progress improved the education sectors to a considerable extent, both in elementary schools and higher education institutions within the country after the establishment of HEC. Nowadays, 228 HEIs are there in providing higher education in Pakistan. These HEIs included 140 public & 88 private sector institutions. Around 1.4 million students are currently enrolled in HEIs, including 900 abroad students studying in several HEIs in 2020. The study focused on the female's higher education in public sector universities and colleges of rural KP, namely Dir Lower and Malakand Agency. This enrollment is 20th percentile of 2002, which later reached 60th percentile in 2009. It reveals the HEC efforts in the improvement of the education system. Besides the efforts of public sector institutions, there is also a significant contribution of private sector institutions in improving the higher education system.

In order to set an economy at the pace of development, women's education is critical. Because of the female literacy rate in Pakistan, it is placed in the lowest in the world. Perhaps one of the prominent reasons may be the ignorance towards education. Females are more deprived than males, and at times it is extreme while looking towards a sum-up comparison between rural and urban territories in Pakistan (Sandhu, 2012). This gap is alarming in women's education terms as the literacy rate is five times timeless in rural than urban. This gap is not solely because of the government but also the cultural norms, customs, and traditions that did not allow women to acquire higher education. Such types of prospects declined the education of women in rural territories. Educating women in such aspects is very challenging. Over the past few years, these concepts diminished to a certain extent as the dominant male society is prevailing in rural areas. Another reason for resisting women to getting a higher education is mainly appealed to be a conventional Muslim society. However, studies revealed that it is the cultural constraints that restrict females from getting higher education. Traditionally, women were not allowed to go out of their homes in Asia, and it is a common tradition in most of the territories in Pakistan to date (Sandhu, 2012).

Women's education has not been a priority since politics has intertwined with personal benefits and power efforts. This gloomy culture is continued for the past 74 years in Pakistan. Politicians spend lavishly on their electoral campaigns, strive for votes with the hope of bringing development in every sector, including women's education, and nevertheless, nothing happens. Generally, the-political

manifestos promise to transform education by several measures like establishing schools in both urban and rural areas and enhancing the education standards. Although, actions on these promises are meagerly done. Consistently successive governments failed to achieve their manifestos either in terms of resource allocation or social and economic reforms (World Bank, 1993). One of the significant hurdles to the nation's transformation into a dynamic shift is the underinvestment of its middle class in developmental and human resource activities (Sandhu, 2012).

Female Education in Pakistan

According to UNSECO (2014) report, Pakistan is in the rank of the bottom ten economies of the world based on females who did not have access to educational institutions. Only six (06) African countries are far worse than Pakistan in this regard. According to this report, 60 % of girls' age range between 7 and 15, have not been to classrooms comparatively 30 percent in India and only 9 percent in Bangladesh. Additionally, the report revealed that Pakistan lies in the bottom ten economies as young females spend in educational institutions over their lifetime. The reports stated that girls between seventeen (17) and twenty-two (22) on average spend only one year of their lives in an educational institution. Comparatively, in Bangladesh and India, girls spend an average of 4.4 and 2.9 years in educational institutions. It counts for 66% of females who have not spent time in educational institutions in Pakistan (UNESCO, 2014).

Pakistan is generally a society where males are comparatively more dominant than females, which shaped the societal males to adopt aggressive behavior towards women. This gender discrimination is not confined according to resources and opportunities but also to rewards. While entering higher education, one of the significant constraints faced by the females of developing countries is their less equality in experience (Jacobs, 1996). During their education, families force and pressurize them about many uncertain activities that cause distraction from the education (Komuhangiro, Urassa & Makauki, 2003). After getting higher education, females are restricted to household activities only, leading to low parity. Pakistan is generally a society where males are comparatively more dominant than females, which shaped the societal males to adopt aggressive behavior towards women. This gender discrimination is not confined according to resources and opportunities but also to rewards. While entering higher education, one of the significant constraints faced by the females of developing countries is their less equality in experience (Jacobs, 1996).

According to Naeem and Khan (2012), unlikely Pakistan is also enthralled into severe social and economic issues of inflation, poverty, unemployment, and poor health conditions similar to other developing economies. Education is one of the significant, influential factors that leave a cross declining impact on all human life aspects to tackle such problems. In endogenous growth theories, education is a

significant factor in economic growth. Keeping in mind the importance of education, developing economies are giving preferences to the development of policies for education and are making up their education sector to the utmost demand of markets. According to Jackson & Waethersby (1975), “Access to higher education has increasingly become a major priority for state and federal policy-makers all over the world.”

According to the Economic Survey of Pakistan (2009-10), irrespective of the utmost significance of education, literacy was only 58 percent on aggregate (65% and 45% literacy rate for male and female respectively). The Human Developmental Index (HDI) of Pakistan is now making it to the rank of 136th in all countries in the world. Perhaps, this is because Pakistan is spending just 8.4% of its GDP on education. This percentage remained at 2% for eight whole years (2000 to 2008) in Pakistan. The number of universities for higher education (HE) in Pakistan remained stagnant for more than a decade in Pakistan. However, in recent years the growth of higher education revealed a significant expansion. Recognizing the critical role of HE in quality research for ongoing education and economic development, in 2002, Pakistan dissolved University-Grant-Commission and built Higher Education Commission (HEC). The key objective of this board is to strengthen HE with particular emphasis on researches in applied areas of technology and science within Pakistan (Higher-education Commission).

Female Education in Khyber Pakhtunkhwa (KP)

Higher education is not as acceptable in conservative societies like Pakistan, especially for females (Mehmood, Mehmood & Chong, 2018). A conservative mindset hinders female participation in the education sector (Shaukat & Pell, 2015). Women's education is highly significant for the development of the whole society. Measuring the outcome by attainment and enrollment the Pakistani female education is among the lowest the education in other countries globally. Pakistan has the lowest gender-equality-education-index in south Asia, which is 0.20. This low rate indicates the low participation of females in the education sector, their low attendance, enrollment, and interest. The gender development index also shows the females' low health conditions, income, and education compared to males in Pakistan. However, this is worth mentioning to note that there is a regional variation of development in most places across Pakistan.

Regarding education and development, females in rural areas are given less even no attention than those in urban areas. Those females who live in FATA (now merged in KP) are neglected from giving education. Only those who belong to FATA but migrated to any other developed cities have the full advantage of getting an education. The tribal areas of Pakistan, according to 2014 statistics, are the highly highlighted areas due to low education enrollments. It was reported by the World Bank EFA (education

for all), 2000 assessment, only 11% of the Pashtun-dominated tribal area's girls were educated (UNESCO, 2014).

According to Thomas (1991) and Parvazian et al. (2017), females are less educated than males in Pakistan, which means the female education ratio to men is very much less. The enrollment rate is double compared to females at the primary level, and in most of the areas of Pakistan, even less than half of the females are enrolled compared to 80 percent of the boys. In Pakistan society, the gender gap is also one of the main problems reflected for decades, which creates hurdles in females' education. Despite many commitments and struggles, the Pakistani government failed to make girls' education a priority, and these efforts can be better judged by the allocation of government resources provided to the females in the education sector. According to United Nations, resources for education should be 4% of the overall GNP of the developing country, whereas, in Pakistan, it is only approximately 1% from 1959 to 1989. In 2013, the budget allocation had been doubled, but it was still only 2%, which is still not enough (UNESCO, 2014).

Another significant and severe problem of Pakistani society is corruption, a significant hurdle in improving the education sector. The various organizations have allocated many funds and government budgets, but the corrupt officials frittered that away. In 2003 Pakistan participatory assessment surveyed 51 districts of Pakistan and found that many schools exist only in papers, and there is no such existence. According to the Pakistan National Education survey, in 164,597 government schools, 7.7% are nonfunctional.

Review of Empirical Literature

In recent years, the education sector is expanding rapidly due to digital revolution and globalization. As the disciplines in education fields are increasing, in likewise manner the demand is also on a pace of increase. For the development of any economy the high literacy rate is considered as a precondition. Moreover, all the economies give priority to access to higher education as it helps to understand the societal norms, beliefs, religion and social class. It also enhances the quality of life. Several studies attempted to examine the effects of socio-economic factors on demand for higher education in developing and developed part of the world however the results of different studies vary from place to place depending upon their economic conditions (Rasheed et al., 2021).

The division and distinction of education on the lines of gender persist in most developing and underdeveloped countries. Females are mostly deprived of this right due to various social, cultural, financial, and ideological factors. Education is key to success, and it is the right of every human being to get educated irrespective of the difference in their gender. If men play a role in the development, women play the role of a pulse in a society. "The Prophet Muhammad (Peace be Upon Him)" also said: "The

seeking of knowledge is obligatory for every Muslim" (Tirmidhi, Hadith 74). Any distinction between men and women is not specified in this hadith. The statement "Give the women what is women's and to men what is men's and there you have a community which is bound to make progress" (Fatima, 2011) also shows equal importance for men and women in the economy. Education also plays the role of leadership and human capital formation in society. The efficiency and productivity of individuals increase due to education, and it also improves the workforce to lead the economy towards growth (Memon, 2007). There are some new challenges that each economy has to face, such as increasing importance to knowledge, economic globalization, and the information and communication revolution as a driver of growth. As time passes, each economy has to develop all the sectors to cope with the world's new challenges. The education sector is the main sector that can help the economy proceed (Salmi, 2001). Educating people is just like an investment (Ayuk, 2012). Highly educated workers can generate new ideas and increase the rate of innovations, which is considered a main source of development. (Sianesi & Reenen, 2000).

Socio-Economic Factors and Demand for Female Higher Education in Pakistan

Economic motivation has been widely cited as a critical incentive to enter higher education. Individuals are assumed to base their decision to enter higher education predominantly on the expected future private benefits. As discussed above, however, costs are incurred in entering higher education. The costs and benefits form an implied, immeasurable investment's return rate in education, and thus it is anticipated the individual will allocate financial values to non-financial advantages and expenditures to make a rational decision (Volchik, Oganesyan & Olejarz, 2018; Campbell & Siegel, 1967). Campbell and Siegel (1967) noted that, like other investments, the investment in higher education might not generate the future benefits that are expected. It occurs for many reasons, such as the student not completing the university or because opportunities may not exist in the labor market. A pertinent question in the economics of education concerns who should pay higher education costs. Scholars have long debated this question and are conflicted about whether they believe the personal benefits outweigh the public benefits or vice-versa. For those who believe the private benefits are more significant than the social benefits, high tuition fees are recommended, given that students are believed to receive more significant benefits than society would receive from their higher education (Khattak et al., 2007). Those who believe the social benefits are more excellent argue that low or no tuition fees be imposed on individuals. Advocates of low/no tuition believe society should bear the burden of a sizeable proportion of the fees generated through taxes.

Khattak et al. (2007) reveal the area which impacts the need for higher education in Khyber Pakhtunkhwa. They used the data collected from almost a hundred students and the primary data of various institutes of KP. The outcomes reflect that ages of students' marital status, guardian education awareness, higher education outcomes were the critical points for the requirement of higher education in

KP. Only 7% were against that social-economic issues can be tackled with the rise in higher education 80% of correspondents suggested that poverty can be decreased with higher education. Furthermore, they also stated that a country-wide campaign should be launched for awareness, and the budget over higher education must also be increased. The related higher education with the market requirement will raise job opportunities, motivating students towards higher education.

Naeem and Khan (2012) and Volchik et al. (2018) researched and reported different elements that affect the different types of Higher Education demand in KP. For this purpose, primary data has been gathered from the students who were enrolled in various Universities of KP; the data set consists of 100 University students. The outcome from this study indicated that students' marital status, literacy of parents, student's age, student's access to higher education, knowledge about the advantage of higher education, and family income are the key elements of demand for higher education in KP. Most interestingly the 93 percent of participants recommended that society's problems related to socio-economic can be resolved with growing higher education. In contrast, 80 percent of students who participated in this survey recommended that it alleviate poverty with higher education. Thus, it is recommended in the study based on participants' outcomes that government should increase the public spending on higher education and initiate a vast awareness campaign about higher education. The connection of market demand with higher education will raise employment, encouraging students to come towards higher education (Naeem & Khan, 2012; Qadir, Tariq & Jehangir, 2018).

According to Paulsen and John (2002), literature relating to the decision to participate in higher education has been predominantly focused on individuals at the age of secondary school completion. It has not reflected the age diversity associated with higher education participants, particularly over the last few decades. Traditionally, studies have also omitted ethnicity and socio-economic background. Thus, traditional models in deciding to participate in higher education have limitations, particularly financial restrictions. The growing diversity in age among the higher education population has created a gap in traditional models relating to participating (Gölpek & Çiftçioglu, 2014; Paulsen & John, 2002). According to Paulsen and John, financial nexus theory is believed to encapsulate higher education choice and persistence. This theory points to the fact that potential students consider their options when deciding to join higher education in the form of costs and aid, and this is believed to continue during their studies and thus affect their persistent decision to continue within the higher education institution. Students thus reconsider financial costs several times throughout their academic studies. The financial nexus model enables the diverse nature of the higher education population to be studied by categorizing choice contexts from traditional and non-traditional higher education participants. While traditional participants choose their higher education establishment based on subsidies, studentships, or lower tuition fees, non-traditional students, such as those who are over twenty-five years old, are more inclined to base their

decision on a higher education institution that capitalizes on their cost of living or that enables them to continue working. Thus, the financial nexus model predominantly focuses on an individual's circumstances by grouping traditional and non-traditional students. The demand for higher education has rapidly increased over the last few decades. The demand has come from individuals wishing to pursue further study and society and governments due to the expected future benefits to both parties. The product markets in China and southeast Asia have priced Western manufacturing out of many markets. Therefore, a knowledge-based economy is perceived as the most valuable alternative for the UK.

Research Methods

Employing descriptive and regression analysis of the data collected via a survey instrument, this study investigates the effect of socioeconomic factors on demand for female higher education in rural KP of Pakistan. Overall, the study attempts to address two major study questions:

1. What are the effects of socio-economic factors on demand for higher education of females in rural Khyber Pakhtunkhwa (KP)?
2. Is there any demand for female higher education in rural Khyber Pakhtunkhwa?

Data and Sample

Because this study focuses on the effect of socio-economic factors on demand for female higher education in rural KP, the analytic sample is restricted to the households of two central regions of rural KP, namely Malakand Agency and Dir Lower. The total number of rural households of Malakand district was 82892, and the Lower Dir district was 150723 (Pakistan Bureau of Statistics, 2017). The total number of rural households in the study area was 233,615. The sample size has been calculated with Yamane formula (Yamane, 1967) of sample size with 5% chance of error and 95% confidence as follows:

$n_{Yamane} = N / (1+Ne^2)$

Where:

"n" illustrates the sample size, "N" is the population size, and "e" is the margin of error (5%)

The calculations are as follows:

$n_{Yamane} = 233,615/ 1 + 233,615 (0.05)^2$

$= 233,615 / 1 + 233,615 (0.0025)$

$= 233,615 / 1 + 584.0375$

$= 233,615/ 585.0375$

$= 400$ (households)

According to the estimate through the Yamane formula, a total of 400 samples was selected from the targeted population. As the size of the population of both the districts was not the same, the selection of respondents (i.e., head of households) was proportionally allocated. Based on population proportion, 65%

sample (260 respondents) were randomly selected from Lower Dir, and 35% (140 respondents) were selected from Malakand (Pakistan Bureau of Statistics, 2017). Due to the limitation of the non-availability of data regarding the exact number of villages and their population in the study area, seven villages were randomly selected from lower Dir, and four villages were randomly selected from Malakand. 37 respondents from each village of Lower Dir and 35 respondents each village of Malakand were randomly selected

Reliability analysis was performed to test the internal consistency of the survey instrument, while validity analysis was performed via theoretical ground and supervisors' judgment to assure the validity of the survey instrument (questionnaire).

After that, descriptive analysis was performed using frequency tables and descriptive statistics. Moreover, to examine the relationship between socio-economic factors and demand for female higher education. Before performing the regression analysis, a few preliminary tests were performed: skewness and kurtosis test, multicollinearity, and heteroskedasticity test to check for normality, multicollinearity, and heterogeneity issues. The multicollinearity problem was tested by a variance inflation factor (VIF) and heteroskedasticity by Breusch-Pagan's test. Since there was the problem of multicollinearity and heteroskedasticity in the dataset, the weighted least square (WLS) model was performed to examine the relationship among the study variables. Additionally, the environment of higher educational institutions, access to higher educational institutions, parental education, distance, perception regarding gender inequality, and economic factors were considered predictors, while demand for female higher education was considered the dependent variable.

Variables

Factors affecting the demand for female higher education may be classified into social and economic factors. Social factors were measured via the environment of the higher educational institutes, access to higher educational institutes, parental education, distance from higher educational institutions, and gender inequality. The environment of the higher educational institutes was measured using three statements, access to higher educational institutes was measured via three statements, parental education via four constructs, the distance by one construct, perception of gender inequality via six constructs, and economic factor was measured via four constructs. After that, constructs for each factor were categorized on ten (10) Point Likert Scale (PLS). The 10 PLS ranged from Entirely Disagree (rated 1), Very Strongly Disagree (rated 2), Strongly Disagree (rated 3), Somewhat Disagree (rated 4), Disagree (rated 5), Agree (rated 6), Somewhat Agree (rated 7), Strongly Agree (rated 8), Very Strongly Agree (rated 9), Entirely Agree (rated 10).

Results and Discussion

The primary purpose of this study was to examine the effects of socioeconomic factors on demand for female higher education in rural KP. In this regard, the study has figured out and tested several factors. It preceded the knowledge of the research technique performed in this study. A self-administered questionnaire technique was adopted to gather data from the respondents related to their social and economic factors. All those observations were then analyzed to address the fundamental objectives of this research and validate the forecasted technique of this study. While following all the required procedures, some prudent practices such as reliability analysis of the instrument were also considered. After the analysis, the implications of the results have also been advised, and the research limitations are also discussed. The below portion of this research presents the discussion and results of findings while considering the research questions.

In order to have constant variances and resolve the problem of heteroskedasticity, there are two widely applicable methods, namely robust regression and weighted least square regression. The study opted weighted least square regression model. The analog method has been applied since the SPSS V23 cannot estimate weighted least squares by functions and codes. The results areas:

Table 4.1.Model Summary of Weighted Least Square Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933[a]	.871	.866	1.38816

a. Predictors: (Constant), Education, Gender Inequality, Monthly Income, Employment Status, District, Gender, Family Size, Distance, Marital Status, Access to Higher Education Institutions, Environment of Higher Educational Institutions, Economic Factor, Parental Education, Age

Table 4.1 above illustrates the model summary. The R-squared value of 0.866 shows that the predictor variables describe around 86.6% of the variation in the dependent variable. Based on the value of R-squared, it can be stated that this study considered most of the factors related to affecting the female higher education demand in rural KP.

Table 4.2. ANOVA table for weighted least square regression

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	5010.015	14	357.858	185.708	.000[b]
	Residual	741.895	385	1.927		
	Total	5751.910	399			

a. Dependent Variable: Demand for Female Higher Education

b. Predictors: (Constant), Education, Gender Inequality, Monthly Income, Employment Status, District, Gender, Family Size, Distance, Marital Status, Access to Higher Education Institutions, Environment of Higher Educational Institutions, Economic Factor, Parental Education, Age

Table. 4.3 table of Coefficients for weighted least square regression

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.480	1.211		.396	.692		
	Environment of Higher Educational Institutions	.310	.014	.831	22.233	.000*	.240	4.174
	Access to Higher Education Institutions	.017	.013	.038	1.308	.192	.406	2.463
	Parental Education	.070	.011	.215	6.295	.000*	.287	3.478
	Distance	.068	.023	.072	2.945	.003*	.561	1.784
	Gender Inequality	-.009	.008	-.035	-1.107	.269	.339	2.952
	Economic Factor	-.012	.011	-.034	-1.045	.297	.323	3.095
	Gender	.112	.296	.008	.379	.705	.709	1.411
	Marital Status	1.218	.211	.159	5.766	.000*	.440	2.275
	Age	-.063	.010	-.236	-6.063	.000*	.221	4.531
	District	-.038	.156	-.005	-.243	.808	.872	1.147
	Employment Status	.015	.052	.006	.282	.778	.728	1.374
	Family Size	.083	.029	.063	2.868	.004*	.691	1.448
	Monthly Income	-.112	.105	-.024	-1.066	.287	.682	1.466
	Education	.022	.013	.035	1.685	.093	.770	1.299

a. Dependent Variable: Demand for Female Higher Education

Table 4.2 estimated the ANOVA. The F-value of 185.708 at a p-value less than 5% indicates that our ultimate model is significant. Hence, the results are valid and acceptable.

Finally, a weighted least square model has been performed to analyze the effects of socioeconomic factors on demand for female higher education. Table 4.3 indicates the individual effects of predictors on the dependent variable. The predictors considered in this model were the environment of higher educational institutions, access to higher educational institutions, parental education, distance, perception regarding gender inequality and economic factors along with eight (08) demographic factors such as gender, marital status, age, districts, employment status, family size, monthly income, and education. The model's outcomes reveal that the environment of higher educational institutions, parental education, and distance from the higher educational institutions have a significant positive impact on demand for female higher education. In contrast, access to higher educational institutions, perception regarding gender inequality, and economic factors have an insignificant impact on demand for female higher education.

The environment of higher educational institutions has a significant positive relationship with the demand for female higher education. The reason may be that the females of rural areas are too much shy and reserved; they cannot survive in an environment where males are dominant and do not give them respect, so in order to attract more females for getting higher education, the environment of the institution should be favorable for them. Additionally, parental education is also a determinant of higher demand for female

higher education as parents know the benefits of pursuing higher education. Hence, if parents are educated, they demand more education for their children irrespective of gender differences. Distance from the higher educational institution is another critical factor for increased demand for female higher education. If the educational institutions are established in far-flung areas, usually females by themself do not opt for higher education.

Moreover, access to higher educational institutions, perception regarding gender inequality, and economic factors have an insignificant relationship with the demand for female higher education because most of the people in the study area were financially strong and not gender discriminated families.

In addition to that, among all eight (08) demographic factors, marital status and family size have a significant positive impact, while age has a significant negative impact on demand for female higher education. At the same time, the other demographic variables such as gender, district, employment status, monthly income, and education have an insignificant impact on the dependent variable, i.e., demand for female higher education.

The results that marital status positively affects are in line with the results Rogers (1958), Bailey (1957), Lantagne (1959), and Khattak et al. (2012). Since the descriptive demographics revealed that the majority of the respondents were married, it can be suggested that married families are satisfied and well aware of the education, thus participating more in pursuance of a higher educational career than those who are single.

Furthermore, it has been observed that age negatively affects the demand for female higher education. From the descriptive statistics, it has been observed that the majority of the family heads were from the X generation who were not primarily aware of the importance of education which is why it negatively affects the demand for female higher education. The results are consistent with the results of Mutluer, 2008 who reported that females and males follow different schooling patterns.

It has been observed that family size positively affects the demand for female higher education. Family size positively affects the demand for female higher education because it may be due to when in a joint family some individuals give priority to their children's education irrespective of any gender differences the other also practice the same. In Rural areas, a joint family system is usually observed, and they practice the same as the others are doing (Aslan, 2003; Mutluer, 2008 & Golpek, 2011).

Socio-Economic Factors and Demand for Female Higher Education

The study's second objective was to investigate the relationship between socioeconomic factors and demand for female higher education in rural KP. The hypothesis projected the relationship between socioeconomic factors (i-e. gender inequality, access to higher educational institutions, distance, parental education, the environment of the higher educational institutions, and economic factors) and demand for female higher education in rural KP (Choudhary, 2014). The hypotheses were accepted except for gender

inequality, economic factors, and access to higher education institutions, insignificant impact. The parental education, environment of higher educational institutions, and distance from the higher educational institution have a significant positive impact on demand for female higher education.

The study results are consistent with previous studies that illustrated that the female parental role is a substantial factor in the success of females' lives by focusing on the education value (Shah, Dwyer, & Modood, 2010). The parents thought that females' professional qualifications and higher education greatly honor the family. The family values and the education of both parents, such as father and mother, are vital for pursuing the higher education of their female children. The father's education affects the academic grades, which are indirectly affected by several other factors (i-e. personal interest and enthusiasm), each of whom has interrelated and dynamic effects. The mother's education also influences the female's higher education demand (Garg, Melanson, & Levin, 2007). The active involvement of parents in pursuance of higher education of their female children is only possible via direct communication and interaction (Perna, 2005). Parental involvement is an inquisitorial procedure across several factors. From the outcomes, it can be assumed that parental education (both father and mother) significantly impacts their female's tertiary level education than boys since it is related to peculiar cultural settings (Ani-Asamoah Marbuah, 2016). It can be stated that the higher the education level of parents, the higher will be their female higher education ratio and vice versa additionally since it has been observed that in the majority of the families in district Dir Lower and Malakand Agency, the females seek the decision of their parents regarding pursuance of higher education. When the parents are educated, they may not refuse their females to pursue tertiary education because they will be aware of the value of education.

Furthermore, the support of parents and the importance of their decision in the lives of rural KP parents is evident via their response; however, it extends with the condition which needs parental education and approval. The approval and support for a daughter's tertiary education have improved via social changes, which figured out a female's identity in Pakistan (Shah et al., 2010). The demographics of the sample have shown that the majority of the families are educated, which is why supporting their daughter's higher education. The key reasons for supporting are the solid socioeconomic status, income status, improved assistance for social variation that helps in empowering females. Those socioeconomic statuses are the affluent and low-income family categorization. Wealthy families may be more supportive, while poor may not be due to their livelihood in poverty (Choudhary, 2014). However, the results show that income status may not significantly affect the demand for female higher education in rural KP.

Additionally, this research also highlighted the personal and social hurdles in the way of the female's higher education and evaluation of the social dimension of rural KP to improve the empowerment of females (Yasmeen, 2005) since educated females have a vital role in the growth of societies (Usha & Sharma, 2001). Initially, it was observed that social impact is less demonstrating that families can defy

cultural pressure, conservative when education is pursued females in modern, technological discipline and high value which promises economic, societal and reputational improvement. Another statement could be that females in rural KP dedicate most of their time to their homes as they are not social and are primarily involved in domestic chores (Halai, Rizvi, & Rodrigues, 2007). One probable reason towards the education of female's less social test might be because of their family's requirement to learn the domestic activities for preparing for their future life as their families presume that running a house and leading a family is the prime responsibility of a male (Shaukat & Siddiquah, 2014).

Regardless of the female student's enrollment in higher education, the gender inequality in enrollment is the same both between the districts and within the districts. It may be presumed that in both the districts, higher education is less discriminatory since in both the districts, the enrollment ratio is significantly less. There are only two HEIs and 30 postgraduate colleges in both districts. The equality of variance for enrollment is higher as there appear to be numerous other problems, such as the distance. The location of either HEI or postgraduate colleges in Dir lower is not at nearby locations, which is why parents are also concerned regarding if they allow their daughters to go to either postgraduate college or HEI, there are chances that they might get harassed (Sathar, Lloyd & Haque, 2000).

In this study, the social contest is moderate in rural KP districts, namely Malakand Agency and Dir Lower, advising that the cultural stress might be lower. Although, the data collected from the respondents shows that there are fewer social reasons. The rating of personal security is higher in rural KP districts, probably due to inadequate transportation and the lodging facilities offered in this rural community. In rural KP specifically, Malakand Agency and Dir Lower are still less advanced and less developed, and its locals are now encouraging their females towards higher education (Bajwa, Ahmad, & Khan, 2007).

Conventionally, it was presumed that females are restricted to their houses and men are the sole bread earners of families. Conventional and social norms limit the efforts of women outside their private bubble hence not permitting them the liberty to edify themselves. Prior studies provided confirmatory proof that education plays a substantial role in women's life and educational years, directly affecting the lives of women (Noureen & Awan, 2011). The social values, attitudes, and social beliefs and norms prevent females from the advantages of educational chances and opportunities in rural KP. Nevertheless, some women favor the conventional patriarchal cultural belief and norms even now. It can be stated that the economic and social factors are the hindering factors for females both in pursuing higher education and experiencing the equal variety of educational suitability presented to the men.

Conclusion

Female education is a substantial causative attribute to economic development and fundamental to sustainable development. In this globalized world, female education is considered a premeditated investment in intellectual and human capital. Although, the circumstantial certainties for female higher

education and the extent of education in rural KP are formidable. In rural KP, namely Malakand Agency and Dir Lower, the enrollment ratio is relatively small due to social, cultural, and economic constraints. This study carried out an empirical study to check whether social, cultural, and economic factors affect the demand for female higher education in rural KP, this study carried out an empirical study. The objective of this study is threefold. Initially, this study attempted to examine the effect of socioeconomic factors on demand for female higher education in rural KP. Secondly, the study analyzed the effect of gender inequality (in terms of female enrollment in higher educational institutes) across Pakistan and districts of rural KP. Finally, the study examined the effect of budgetary allocation on female higher education enrollment.

In this regard, the primary research technique was adopted. The primary approach included administering a self-developed multifactor questionnaire from 400 households in rural KP, particularly Dir lower and Malakand agency. The survey instrument was designed based on existing evidence of the literature.

Primary data collected via survey instrument was examined performing descriptive statistics and multiple linear regression. The data was collected from the participant's heads of household. From the descriptive statistics, it was observed that most of the household's heads were female, having an age of 35 years and above. Additionally, most of the household heads were unemployed. Their average family size was from 5 to 14 members. Their average monthly household income was estimated to be 3.5 lacs. Now, to examine the effect of the socioeconomic factors on demand for female higher education, ordinary least square (OLS) was initially performed, followed by the weighted least square regression model. The weighted most miniature square model was performed because the results of OLS were redundant due to multicollinearity and heteroskedasticity problems. The data analysis revealed that all the socio-cultural and economic factors except distance impede the demand for female higher education. Overall, the social factors such as the environment of the higher educational institutes (EHEI) are the dominant factors that directly affect female higher education demand. Additionally, it was observed that access to higher education, distance, and perception of gender inequality have a weak direct effect on demand for female higher education.

Policy Recommendations

To compensate for gender, socio-cultural and economic disparities, favorable action programs should be developed. The government needs to substantially increase the number of scholarship awards and quota systems to females in rural KP to bridge the gap.

Contrastingly, to redress regional inequalities, the government needs to build higher educational institutes in strategic places and rural KP, particularly in Dir Lower and Malakand Agency, as positive discrimination to enroll females knowingly. Alongside, the government needs to develop the capability of

boarding facilities in all higher educational institutions as a means to promote female higher education in rural areas of KP.

Additionally, the government needs to organize and conduct comprehensive awareness campaigns either directly or with the help of NGOs for both parents and the females themselves pursuing higher education in order to build the parent's focus on female higher education and to build the female interest in education systems by briefing them with the importance of education and the benefits of education such as empowerment. The government should also focus on formulating policies like anti-harassment and bullying policies to encourage females to pursue higher education in rural KP. Efforts need to be taken both on provincial and state levels to increase the extent of male awareness of community and the family's economic advantages from improved female participation in education and income-generating programs. Aid is to be offered to increase the extent of implementation of educational policy locally via the training of a substantial number of employees in the systems of delivery and implementation. Their protagonist would be a practical one of support, animation, and advice instead of meager administration.

Government support is required to streamline education provision in rural cities such as Dargai and Timergara, where a mix of swift urbanization, historic locational bequests, severe transport issues, and improving intricacy in demand patterns are unfavorably influencing effectual conveyance of education and ease of physical access for the females.

Finally, it is believed that the only restriction to females' higher education is coeducation. Therefore, it is suggested that government efforts should be made to establish single-sex education as it was found to positively influence the female's achievement in higher education and try to lower the stereotypical view and bridge the gender gap.

Limitations

The study has the following limitations as below:

a. The estimate of this research is limited to the scope and context of this study only since this study’s transferability has not yet checked.
b. The technique used for strata within a sample of 400 respondents may be exposed to bias due to its selection of respondents were based on the population of the two districts namely Dir lower and Malakand agency.

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