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*Research Article*

# Examining the Nexus: A Statistical Analysis of Factors Shaping Academic Performance, A Case Study of Punjab University Students

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## Abstract
Education stands as a nation's paramount legacy, particularly to its young populace, shaping the course of a society's advancement. The quality of education a nation provides significantly dictates its progress. This study is conducted to explore the diverse factors influencing academic performance among students at Punjab University. A sample of 276 students was drawn utilizing Yamane's formula through random sampling, and data collection employed questionnaires. CGPA is used as the measure of academic performance of students. Data Analysis is done using SPSS. Results are portrayed descriptively using frequencies, percentages, and visual aids, while inferential statistics included Pearson's Chi-Square unveil associations, Factor Analysis to extract academic factor, Mann-Whitney U and Kruskall-Wallis H tests to explore the opinions of students for different variables. Interestingly, no direct link emerged between respondents' CGPA and gender, but a notable correlation emerged between CGPA and their mothers' educational background. Via Conformity Factor Analysis, four key factors surfaced: attitudes toward study, ability of time management, learning facilities and teachers' professionalism. Mann-Whitney U test divulged differing opinions between male and female respondents concerning time management abilities and their attitudes toward studying. Additionally, Kruskall-Wallis H test highlighted varying perspectives among students of different CGPA levels regarding attitudes toward studying and teachers' professionalism. Finding suggests that the administration should not only focus on teacher training but also improve learning facilities.

## Keywords
*Academic Performance; Student's Learning; University Students; Punjab University*

## Introduction

Education transcends the mere transmission of information; it is a rich tapestry woven with threads of knowledge, wisdom, and skills (Adams & Blair, 2019). Beyond the acquisition of facts and figures, education molds individuals into ethical beings, instilling values, beliefs, and habits that form the bedrock of their identities. It serves as a guiding light, not only for career advancement but also for personal growth, nurturing qualities of compassion, empathy, and global citizenship (Alhadabi & Karpinski, 2020; Alos et al., 2015).

At Punjab University, this holistic approach to education is evident in its unwavering commitment to fostering academic excellence alongside character development. By imbuing students with a sense of purpose and responsibility, education becomes a catalyst for societal change. It empowers individuals to transcend barriers, unlocking doors to truth and possibility while extending opportunities to every corner of society (Li et al., 2018; Luttah & Simatwa, 2016). Indeed, education stands as a cornerstone of progress, shaping the destinies of both individuals and nations. Its transformative power lies not only in the classroom but also in the broader context of societal evolution. By equipping individuals with the knowledge and skills to navigate an increasingly complex world, education becomes a force for positive change, driving innovation, and fostering inclusive growth (Cao et al., 2024).

Academic performance stands as the tangible outcome of the educational journey, reflecting the extent to which students, teachers, and institutions have realized their educational objectives (van Rooij et al., 2018). It serves as a crucial benchmark for assessing the effectiveness of educational systems and the quality of educational experiences. The significance of academic performance extends far beyond individual achievement; it directly impacts the nation's socio-economic development and its ability to compete in the global arena (Mushtaq et al., 2012). The academic achievement of students plays a pivotal role in shaping the caliber of future leaders and the workforce, thus influencing the trajectory of a nation's economic and social progress. High-quality graduates are not only equipped with the necessary knowledge and skills but also possess the leadership qualities and innovative thinking needed to drive sustainable development and prosperity (Chen & Yang, 2019; Considine, 2002).

However, academic performance is not a simple linear equation; it is a multifaceted phenomenon influenced by a myriad of factors. Researchers, including Graetz (1995) and Considine & Zappala (2002), have delved into the complex interplay between socio-economic status and academic success. Their findings underscore the significant impact of factors such as parental social status and income on student test scores and overall academic performance.

Understanding the dynamics that shape academic outcomes is paramount, not only for educators, administrators, and policymakers but also for students themselves (Feldman & Editor, 2016). By gaining insights into the various factors influencing academic performance, stakeholders can develop targeted interventions and support mechanisms to enhance student achievement and holistic development (Davies et al., 2016; Eardley et al., 2002). Moreover, this deeper understanding of the educational landscape empowers students to navigate their educational journey effectively, maximizing their potential for success (Picton et al., 2018).

The study of academic performance goes beyond mere grades; it offers a window into the broader educational ecosystem and its implications for individual and societal advancement. By unraveling the intricacies of academic success, we pave the way for a more equitable and inclusive education system that fosters the growth and development of all students (Salem et al., 2013). The scope of our present study encompasses a thorough investigation into the myriad factors influencing academic performance among students at Punjab University. Recognizing the multifaceted nature of academic success, we aim to dissect various elements that may contribute to students' educational outcomes. Our analysis

encompasses a broad range of factors, including demographics such as gender and age group, as well as academic variables such as study program and socio-economic status (Rytkönen et al., 2012). Furthermore, we delve into the temporal aspect of academic engagement by examining students' time spent studying and their employment status, recognizing the potential impact of outside commitments on academic performance. Additionally, we explore the influence of residential arrangements and parental education levels, acknowledging the role of familial support and background in shaping educational trajectories (Salman Alani & Tuama Hawas, 2021).

Our study scrutinizes the effect of language proficiency, particularly in English, on academic achievement, given its significance in higher education contexts. We also investigate students' attitudes toward their studies and their ability to manage time effectively, recognizing the importance of self-regulation in academic success (Rossi, 2017). We assess the availability and quality of learning facilities provided by the university, acknowledging their role in facilitating effective learning experiences. Additionally, we examine the professionalism of teachers and their impact on students' course outcomes, recognizing the pivotal role of educators in shaping the learning environment.

Ultimately, our goal is to contribute to the broader discourse on educational reform by offering evidence-based insights into the factors that influence academic performance and by advocating for policies and practices that promote equity, inclusivity, and excellence within the educational landscape of Punjab University (Shawwa et al., 2015). Through collaborative efforts and informed decision-making, we can work towards building a more equitable and supportive educational system that fosters the success and well-being of all students (Strayhorn, 2018).

A diverse range of variables that can significantly impact student's educational outcomes is highlighted by the literature on factors influencing academic performance among university students. Many researchers have emphasized the pivotal role of effective teaching methodologies, classroom environments, and educational resources in fostering positive learning outcomes and academic achievements (Smith et al., 2018; Brown & Miller, 2020). The study's findings conducted by (Shakir & Kiazai, 2023) demonstrated that consistent communication between students and teachers and a conducive learning environment created by teachers had a significant impact on academic performance.

Additionally, findings evaluated through structural equation modeling (SEM), show that social factors, i.e. interaction with peers and teachers, social presence, and usage of social media positively impact active collaborative learning and student involvement, thus affecting their learning performance, (Qureshi et al., 2021.) Several studies have mentioned the importance of various socio-economic factors, such as family income, parental education levels, and the availability of financial resources, in shaping students' academic trajectories (Gupta & Singh, 2017; Khan, 2019). Furthermore, the educational attainment of the parents (most of them are high school graduates only), the occupation of the parents (most are not working, especially the mother), and their average monthly income (they can only earn enough to buy their daily needs). Based on the result, most children suffer from insecurities because of their socio-economic status which can create a gap in the student's achievement. Students who belong to low socio-economic status remain behind (Ablen, 2020). Studies have explored the influence of individual student characteristics, including self-efficacy, motivation, and psychological well-being, on academic performance (Wang & Eccles, 2012; Rana et al., 2019).

Moreover, an emerging body of research has highlighted the significance of technological advancements and digital literacy in shaping contemporary educational experiences and outcomes, underscoring the importance of integrating technology into the learning process (Ally, 2019; Nguyen et al., 2021). This literature has emphasized the need for a comprehensive understanding of the

interplay between these diverse factors to create effective educational interventions and support mechanisms that can enhance students' academic performance and overall well-being.

However, despite the wealth of research in this field, there remains a noticeable gap in the literature concerning the specific context of Punjab University and its student population. As such, this study seeks to contribute to the existing body of knowledge by providing insights into the unique factors that influence academic performance among students at Punjab University, thereby offering valuable implications for educational practices and policies tailored to the university's distinctive academic landscape.

### Objectives of the study

The present study aimed to highlight the factors that affect the academic achievement of Punjab University Students. The main objectives of this study are:

1. To investigate the factors that influence the academic performance of a Punjab University student.
2. To find the effect of extracted factors on academic performance (CGPA).
3. To investigate the effect of gender on the achievements of CGPA.
4. To explore the relationship between socio-economic status and academic performance of students.
5. To investigate the effect of the mother's education on the academic performance of respondents.

## Method

This research is a survey based study that was conducted at University of The Punjab (New Campus) Lahore Pakistan, during the period of March-August 2023. The simple random method technique was used to approach the sampling units. The following formula provided by Yamane is used to determine sample size.

$$\mathbf{n} = \frac{N}{1 + Ne^2}$$ N= population size, n= sample size, e= level of precision

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The primary data was collected using a questionnaire that consisted of demographic information and academic performance-related questions. SPSS (Statistical Packages for Social Science) software is used to analyze the recorded data. Both descriptive and inferential statistics are used to obtain results. In descriptive analysis frequencies, percentages, basic measures of central tendency & dispersion are derived. For the inferential analysis, conformity factor analysis is used to extract the important factors. Further testing such as Pearson's Chi-Square test, Mann Whitney U test, and Kruskall-Wallis H test are applied to know more about the nature and behavior of extracted factors on the academic performance of university students.

1. **Chi-Square test**

$$\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{c} \frac{(O_{ij}-E_{ij})^2}{E_{ij}} \quad \& \quad E_{ij}=\frac{(A_i)(B_j)}{n}$$

2. **Mann Whitney U test**

$$Z=\frac{U-\mu_u}{\sigma_u} \quad \& \quad U=\min(U_1,U_2), \ \mu_u = \frac{n_1 n_2}{n}, \quad \sigma_u = \sqrt{\frac{n_1 n_2 (n_1+n_2+1)}{12}}$$

### 3. Kruskall-Wallis H test

$$H = \frac{(n-1)(S_k^2 - C)}{S_r^2 - C} \qquad \& \qquad C = \frac{n(n+1)^2}{4}, \quad S_r^2 = \Sigma_{i=1}^{k} \Sigma_j R_{ij}^2 , \quad S_k^2 = \Sigma_{i=1}^{k} \frac{R_i^2}{n_i}$$

## Results

***Table 1:*** *Reliability Statistic of Questionnaire*

| Cronbach's Alpha | N of Items |
|---|---|
| 0.728 | 40 |

All 40 items in the questionnaire were analyzed to check the reliability. The value of Cronbach's alpha came out to be 0.728 which indicates high internal consistency between the items and thus we can conclude that the questionnaire is reliable.

***Table 2:*** *Basic Description of Data*

| Variable Description | Response Categories | Frequency | Percent |
|---|---|---|---|
| Gender of Respondent | | | |
| | Male | 141 | 51.1 |
| | Female | 135 | 48.9 |
| Family Income per month | | | |
| | <20K | 15 | 5.4 |
| | 20K—40K | 78 | 28.3 |
| | 41K—60K | 55 | 19.9 |
| | 61K—80K | 49 | 17.8 |
| | >80K | 79 | 28.6 |
| Demographic Area | | | |
| | Urban | 180 | 65.2 |
| | Rural | 96 | 34.8 |
| Medium of Instruction (Joiner High School) | | | |
| | Urdu | 94 | 34.1 |
| | English | 182 | 65.9 |
| Current enrolled Degree | | | |
| | BS | 214 | 77.5 |
| | MSc / MA | 43 | 15.6 |
| | M.Phil. / PhD | 19 | 6.9 |
| Current CGPA | | | |
| | 3.51—4.00 | 95 | 34.4 |
| | 3.01—3.50 | 132 | 47.8 |
| | 2.51—3.00 | 38 | 13.8 |
| | 2.00—2.50 | 11 | 4 |
| Time Spending on studies (In hours) | | | |
| | <1 | 80 | 29 |
| | 1—2 | 110 | 39.9 |

| | | | |
|---|---|---|---|
| | 3—4 | 63 | 22.8 |
| | >4 | 23 | 8.3 |
| Part-time employed | | | |
| | Yes | 66 | 23.9 |
| | No | 210 | 76.1 |
| Residency Types | | | |
| | University Hostel | 114 | 41.3 |
| | Home | 146 | 52.9 |
| | Other (Private Hostel, Rental Apartments) | 16 | 5.8 |
| Mother's Job Status | | | |
| | Un-employed / House-wife | 244 | 88.4 |
| | Employed | 32 | 11.6 |
| Mother's Education Level | | | |
| | Under Matric | 71 | 25.7 |
| | School (Matric) | 60 | 21.7 |
| | College (Inter, Bachelor) | 72 | 26.1 |
| | University (Masters, M.Phil / PhD) | 23 | 8.3 |
| | Uneducated | 50 | 18.1 |

## 1. Pearson's Chi-Square Test

***Table 3:*** *Hypothesis Testing by Chi-Square*

| Sr# | Null Hypothesis | $\chi^2$ value | P-value |
|---|---|---|---|
| 1 | There is no association between CGPA of the respondents and Gender | 1.939 | 0.585 |
| 2 | There is no association between respondents' CGPA and respondents' mother's education. | 18.226 | 0.045* |
| 3 | There is no association between respondents' CGPA and respondents' father's education. | 20.326 | 0.061 |
| 4 | There is no association between CGPA of respondents and residential type (Home, Hostel, Other). | 7.840 | 0.250 |
| 5 | There is no association between students' CGPA and Medium of instruction in Metric (English, Urdu). | 1.321 | 0.724 |
| 6 | There is no association between respondents' CGPA and qualification level (i.e., BS, MA/MSc, M.Phil.) | 9.639 | 0.041* |
| 7 | There is no association between qualification level (BS, MA/MSc, M.Phil.) and spending time on study (daily in hours). | 12.175 | 0.050* |
| 8 | There is no association between family income of student and financial problem faced to students. | 6249. | 0.181 |
| 9 | There is no association between demographic area and students' mother education. | 14.682 | 0.005* |
| 10 | There is no association between Job status and spending time on study (daily in hours). | 5.742 | 0.025* |

**P*(p<0.05)**

A significant association is observed between the CGPA of respondents and their mother's education, their qualification level, and between qualification level and spending time on study (daily in hours). Also, an association is found between the demographic area of students and their mother's education, between job status and time spent on study (daily in hours). No association was found between CGPA and gender of the respondents, their father's education, their medium of instruction in metric, and their residency types (living in a home, university hostel, or private hostel/rental apartments). Also "family

income" of respondents and "student can manage their expenses easily" were found independent.

## 2. Factor Analysis

To explore the different factors, factor analysis using principal component analysis has been done. To check the factorability: a correlation matrix is observed and found that in the matrix most of the correlations are greater than 0.35 and are statistically significant either at a 1% or 5% level of significance. So the variables put into factor analysis have factorability i.e. factor structure.

***Table 4:*** *KMO and Bartlett's Test*

| | |
|---|---|
| Kaiser-Meyer-Olkin (KMO) | 0.767 |
| Bartlett's Test of Sphericity | 1615.932 |
| Degree of freedom | 210 |
| Significance | .000 |

Table 4 shows the results of two tests, which are used to indicate the suitability of data for structure detection. The value of KMO statistic is 0.767 showing that sampling adequacy is appropriate for data. Bartlett's test of Sphericity tests the hypothesis that a correlation matrix is an identity matrix. For the current data, Bartlett's test of Sphericity yielded a Chi-Square statistic 2057.961 with 210 degrees of freedom. Thus, the null hypothesis (i.e. correlation matrix is an identity matrix) was rejected at a 5% level of significance with p = 0.000. Thus we can proceed with the factor analysis.

**Deriving the Factors:** Total Variance Explain

***Table 5:*** *Explained Variance*

| | Initial Eigenvalues | | | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|---|---|---|
| SR# | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 3.833 | 18.254 | 18.254 | 3.833 | 18.254 | 18.254 | 3.102 | 16.772 | 16.772 |
| 2 | 3.433 | 16.349 | 34.603 | 3.433 | 16.349 | 34.603 | 3.035 | 15.453 | 32.225 |
| 3 | 1.407 | 10.281 | 44.884 | 1.407 | 10.281 | 44.884 | 1.995 | 11.499 | 43.724 |
| 4 | 1.286 | 9.122 | 54.006 | 1.286 | 9.122 | 54.006 | 1.940 | 10.236 | 54.960 |
| 5 | 1.052 | 3.737 | 57.743 | 1.052 | 3.737 | 57.743 | 1.049 | 3.388 | 57.348 |
| 6 | 1.001 | 2.960 | 60.703 | 1.001 | 2.960 | 60.703 | 1.000 | 3.355 | 60.703 |

Extraction Method: Principal Component Analysis.

Using the Latent Root Criteria of retaining factors with Eigen values greater than 1.00, we obtained 6 factors for rotation. These factors accounted for 16.772%, 15.453%, 11.499%, 10.236%, 3.388%, and 3.355% of total variance respectively. By using this approach factors have been extracted as they all explained 60.703% of the variance.

***Table 6:*** *Reliability of Extracted Factors*

| Factors Name | No. Item | Cornbrash's Alpha | Mean ± S.D |
|---|---|---|---|
| Students' Attitude towards studies | 6 | 0.789 | 18.45 ± 0.308 |
| Students' Ability of Time Management | 6 | 0.778 | 21.66 ± 0.247 |
| Learning Facilities at department | 3 | 0.651 | 10 ± 0.161 |
| Teacher's Professionalism | 3 | 0.650 | 8.87 ± 0.163 |

Table 6 indicates that all factors have Cornbrash's alpha greater than 0.6, which indicates good internal consistency between the items of a particular factor.

### 3. Mann Whitney U Test

***Table 7:*** *Grouping Variable; Gender*

| Sr# | Null Hypothesis | U value | \|Z\| | P value |
|---|---|---|---|---|
| 1 | Both genders male & female have same opinion about time management for study activities. | 7945.00 | 2.384 | 0.017* |
| 2 | Respondents of both genders male & female have same opinion about learning facilities at department. | 9466.00 | 0.078 | 0.938 |
| 3 | Students of both genders male & female have same opinion about attitude towards study. | 8868.50 | 0.981 | 0.027* |
| 4 | Both genders male & female have same opinion about teachers' professionalism. | 9424.00 | 0.142 | 0.887 |
| 5 | Both genders male & female have same distribution of CGPA | 9100.0 | 0.639 | 0.529 |
| 6 | Respondents belonging to different demographic area have same opinion about attitudes towards study | 8557.50 | 0.131 | 0.896 |
| 7 | Respondents belonging to different demographic area have same opinion about time management for study activities. | 7798.00 | 1.340 | 0.041* |

**P*(p<0.05)**

Respondents of both genders male and female have different opinions about the ability of time management for study activities and about the attitudes of respondents towards study. There is no significant difference found between the opinions of males and females regarding the learning facilities at the department and about teachers' professionalism. Also, both genders have the same distribution of CCGP. Moreover, no difference was found between the respondents' of different demographic areas and their opinions about the attitude towards study while a significant difference is observed between the opinions of respondent belonging to urban & rural demographic area regarding the time management ability for study activities.

***Table 8:*** *Mean Rank of Gender Response*

| Statement | Gender | N | Mean Rank | Sum of Ranks |
|---|---|---|---|---|
| Students' Ability of Time Management | Male | 141 | 127.35 | 17956.00 |
| | Female | 135 | 150.15 | 20270.00 |
| | Total | 276 | | |
| Students' Attitude Towards Studies | Male | 141 | 133.90 | 18879.50 |
| | Female | 135 | 143.31 | 19346.50 |
| | Total | 276 | | |
| Students' Ability of Time Management | Urban | 180 | 143.18 | 25772.00 |
| | Rural | 96 | 129.73 | 12454.00 |
| | Total | 276 | | |

Table 8 shows that the female respondents have more consideration of time management ability on academic performance and the effect of the attitude of students towards studies. Furthermore, respondents belonging to urban demographic areas have more consideration of time management for study activity on academic performance as compared to those respondents who belong to rural areas.

### 4. Kruskall Wallis H Test

***Table 9:*** *Grouping Variable; CGPA*

| Sr# | Null Hypothesis | Chi-Square (d.f) | P-value |
|---|---|---|---|
| 1 | Students having different CGPA have same opinion of time management for study activities. | 5.235 (3) | 0.155 |

| | | | |
|---|---|---|---|
| 2 | Respondents belongs to different groups of CGPA have same attitudes towards study. | 14.929 (3) | 0.002* |
| 3 | Students belonging to different categories of CGPA have same opinion about learning facilities in department. | 2.303 (3) | 0.512 |
| 4 | The students having different CGPA have same opinion about teachers' professionalism. | 7.184 (3) | 0.046* |
| 5 | The respondents having different CGPA have same opinion that they can easily access to teacher | 2.205 (3) | 0.531 |

**P*(p<0.05)**

Table 9 reflects that the students having different CGPAs have different opinions about the attitude toward study and about the teachers' professionalism. Respondents belonging to different groups of CGPA have the same opinion about time management activities, about learning facilities provided in the department, and about how they can easily access to teacher.

***Table 10:*** *Mean Rank of CGPA Groups*

| Statement | CGPA Categories | N | Mean Rank |
|---|---|---|---|
| Students' Attitude towards studies | 3.51—4.00 | 95 | 116.69 |
| | 3.01—3.50 | 132 | 152.81 |
| | 2.51—3.00 | 38 | 130.87 |
| | 2.00—2.50 | 11 | 181.45 |
| | Total | 276 | |
| Teacher's Professionalism | 3.51—4.00 | 95 | 122.53 |
| | 3.01—3.50 | 132 | 150.33 |
| | 2.51—3.00 | 38 | 133.79 |
| | 2.00—2.50 | 11 | 150.73 |
| | Total | 276 | |

Table 10 depicts that the students who have a CGPA between 2.00—2.50 have more consideration of both attitudes toward studies & teachers' professionalism in academic performance.

## Discussion

The findings presented offer valuable insights into various aspects of student behavior, attitudes, and perceptions within an academic setting. The study employs a combination of descriptive and inferential statistical analyses to explore relationships between different variables, shedding light on factors influencing students' academic performance and experiences.

### 1. Descriptive Findings

The descriptive analysis provides a snapshot of the characteristics of the respondent population. The predominance of male respondents suggests a potential gender disparity within the sample, which could be indicative of broader gender imbalances in educational participation or reflective of the demographics of the institution under study. Additionally, the concentration of respondents within the 21 to 24 age bracket underscores the study's focus on a relatively young cohort, likely comprising undergraduate students. The high proportion of students enrolled in BS programs aligns with this observation. Notably, the distribution of family income levels among respondents reveals socioeconomic diversity within the sample, with a substantial percentage reporting monthly incomes exceeding 80K. This finding underscores the importance of considering socioeconomic factors in understanding students' educational experiences and outcomes. Furthermore, the distribution of respondents across different CGPA ranges highlights the varying levels of academic achievement within the sample, with a notable proportion falling within the higher CGPA brackets. The findings related to study habits and behaviors provide insights into student engagement and academic practices. The prevalence of respondents who study primarily in preparation for class tests may indicate a

reactive rather than proactive approach to learning among a significant portion of the sample. Similarly, the reported incidence of copying assignments suggests potential issues with academic integrity within the academic environment under study. The perceptions regarding adherence to departmental schedules and the frequency of revisiting learning materials offer additional context regarding students' attitudes toward their academic responsibilities and the efficacy of instructional practices.

## 2. Inferential Findings

The inferential analysis delves deeper into the relationships between various variables, offering valuable insights into the underlying dynamics shaping students' academic experiences. The significant associations observed between CGPA and factors such as maternal education, academic qualification level, and study habits underscore the multifaceted nature of academic success, influenced by a combination of individual, familial, and contextual factors. Similarly, the associations between demographic variables (e.g., area of residence, job status) and study-related behaviors highlight the complex interplay between socio-demographic factors and academic engagement. The application of factor analysis yields a nuanced understanding of the underlying dimensions influencing students' academic experiences. The identified factors encompass students' attitudes towards studies, time management abilities, perceptions of learning facilities, and assessments of teacher professionalism, collectively shaping their educational trajectories. This holistic framework provides a comprehensive lens through which to examine and address issues impacting student learning and engagement. The findings from Mann Whitney U and Kruskal Wallis H tests offer additional insights into potential differences in perceptions and experiences across different demographic groups. The observed variations in attitudes towards study and teacher professionalism underscore the importance of considering individual differences and contextual factors in understanding students' educational experiences. Additionally, the lack of significant differences in CGPA distribution across demographic categories suggests the potential universality of certain academic outcomes, transcending socio-demographic boundaries.

A detail review of literature is done and found that many studies & researches are conducted on this topic. Dhaqane & Afrah (2016) in their research found that there is strong relationship between satisfaction of students and academic performance. Ali et al. (2013) use linear regression model, correlation analysis in their study to measure the effect of different factors on academic achievements. The findings revealed that age, father/guardian social economic status and daily study hours significantly contribute the academic performance of graduate students.

In this study a sample of 276 is taken by using Yamane formula taking Punjab University Lahore. The faculties of university are assumed as clusters and three clusters are selected at random. Using proportional allocation the sample size is determined and from each cluster the convenient sampling is used to collect the response from students. The data is collected through questionnaire, responses were entered in SPSS and Descriptive and Inferential Analysis is performed.

In descriptive part, frequencies and percentages are computed. It is found that the mostly respondents were males in our study. Mostly, 28.6% of respondents have >80K monthly family income while 79.3% of the respondents have age between 21 to 24 years and mostly 77.5% are studying in BS program. Only 4% students in our study have CGPA between 2.00 to 2.50. Out of 276 respondent students, 36.2% respondents agreed that they study only when there is class test. Barely 11.2% of respondents strongly agreed that they copy the assignments of their classmates. Merely 8.3% the respondent strongly disagree that the time schedule is followed in their department. Mostly 43.8% respondents agreed that they can repeat the learning matters frequently.

In inferential part, using Chi-Square test of association we found a significant association between CGPA of respondents and their mother's education, their qualification level (studying in BS, MA/MSc and M.Phil./PhD), between qualification level and spending time on study (daily in hours). Also association is found between demographic area of students and their mother's education, between job status and time spending on study (daily in hours). No association found between CGPA and gender of the respondents, their father education, their medium of instruction in metric and their residency types (living in home, university hostel or private hostel/rental apartments). Factor analysis technique is applied, four factors were extracted and labeled them as students' attitude towards studies, students' ability of time management, learning facilities at department and teachers' professionalism.

Mann Whitney U test, reveals that respondent of both gender male and female have different opinion about the ability of time management for study activities and about the attitudes of respondents towards study. There is no significant difference found between the opinion of male and female regarding the learning facilities at department and about teachers' professionalism. Also both genders have same distribution of CCGP. No difference found between the respondents' of different demographic area and their opinion about attitude towards study while a significant difference is observed between the opinions of respondent belonging to urban & rural demographic area regarding the time management ability for study activities.

Findings of Kruskal Wallis H test, showed that the students having different CGPA have different opinion about the attitude towards study and about the teachers' professionalism. Respondents belonging to different group of CGPA have same opinion about time management activities, about learning facilities provided in department and about they can easily access to teacher. The significant difference is observed between respondents belonging to different Income Class and the opinion about the attitude towards their studies while the students belonging to different social income class have no effect on their CGPA.

### Implications and Future Directions

Overall, the findings offer valuable insights into the complexities of student experiences within an academic context, highlighting the interplay of individual, familial, and contextual factors in shaping academic outcomes. These insights have implications for educational practitioners and policymakers seeking to enhance student engagement, promote academic success, and foster inclusive learning environments. Future research endeavors could build upon these findings by exploring additional factors influencing student academic experiences, such as socio-cultural influences, institutional practices, and technological interventions. Longitudinal studies could further elucidate the trajectories of student development and the impact of interventions aimed at enhancing academic engagement and success. Additionally, qualitative inquiries could provide deeper insights into the underlying motivations, perceptions, and experiences driving students' academic behaviors and attitudes.

## Conclusion

Education is a broad term that can have many meanings, but it is generally defined as "the process of learning and acquiring information". The development of any nation or community depends largely on the quality of education and academic performance of students is the outcome of education. The students' performance plays an important role in producing the best quality graduates who will become great leader and manpower for the country thus responsible for the country's economic and social development. There are many just many factors that affect the academic performance of students. The present study is conducted to measure such factors, in our study, we evaluate different factors such as their gender, age group, study program, social economic status, time spending on study, job status, residency type, mother & father education, effect of English language, students attitude toward their study, students ability of time management, different learning facilities that are provided at university

and there effect on students' scores and the teachers professionalism towards students course.

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