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Ekonomikalia
Journal of Economics

Vol. 4, No. 1, 2026

The Impact of Financial Stress on Academic Performance in Tertiary Education: Empirical Evidence from Comilla University

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Article History

Received 10 February 2026
Revised 9 April 2026
Accepted 18 April 2026
Available Online 25 April 2026

Keywords:
Family income
Students working hour
Class attendance
Academic performance

Abstract

University students commonly struggle with financial stress, which has consequences for both their general well-being and academic achievement. This paper aims to explore the impact of financial stress on academic performance. A quantitative study was conducted at Comilla University, a tertiary institution in Bangladesh. The study included 152 randomly selected students from different departments who are currently enrolled in undergraduate and postgraduate programs. Primary data were used in both descriptive and inferential analyses. Descriptive analysis, including students' perceptions and opinions regarding financing expenses, unexpected expenses, family financial obligations, tuition fees, living expenses, the cost of books and study materials, and financial support to family, showed that these factors led to financial stress and affected students' academic performance. From the descriptive analysis, the study found that higher living expenses mostly affected students' academic performance. The inferential analyses, including t-tests, hypothesis tests, and regression analysis, found different factors that significantly affected students' academic performance. In the gender analysis using t-tests, it was found that female students reported slightly higher stress levels but performed better academically than males. From the correlation analysis, we found a positive relationship. Family income and class attendance were positively correlated with students' academic performance, while working hours negatively impacted CGPA. The regression analysis revealed class attendance and family income as statistically positive factors that positively affected students' academic performance. Working hours negatively affected academic performance and were statistically significant. Based on the results, the study recommends that, in order to mitigate the adverse impacts of financial stress on academic performance, Comilla University, as well as the government, should strengthen financial aid programs, create on-campus employment opportunities, and provide counseling on time management.

1. Introduction

Student life is one of the most lively and memorable phases of life, filled with experiences to cherish and enjoy. However, university life is not always as exciting as it seems. Many university students face daily challenges that can lead to stress. If this stress is not managed, it can harm their academic performance, emotional health, and social well-being [1]. Financial stress is a growing concern among university students worldwide, significantly affecting their academic experience and overall well-being [2]. Students from economically disadvantaged backgrounds are particularly vulnerable, as they face multiple financial pressures related to tuition fees,

accommodation, daily living expenses, and limited access to financial aid or scholarships [3]. In tertiary institutions, the pressure to manage family responsibilities sometimes adds a substantial financial burden to students [4].

Human capital theorists believe that education plays a key role in making workers more productive and efficient [5, 6]. It helps people gain knowledge, improve their skills, and develop positive attitudes and abilities needed for work [7]. However, in many poorer countries where poverty is common and financial resources are limited, a person's financial situation often determines how much and what quality of education they can obtain [8]. Financial problems are a major source of stress for university students, especially those in public universities, as many come from middle- or lower-middle-class families. As a result, financial struggles are very common, with 55.5% of students reporting that they feel stressed because of money issues [9]. This financial stress affects their participation in both academic and personal activities and is linked to factors such as gender, living conditions, and borrowing money. Tuition fee dues have a significant positive association with financial stress [10]. A shortage of money leads to uncertainty regarding the continuation of students' education; as a result, they cannot give full concentration to academic activities [7]. Students who face the pressure of unpaid university dues often struggle to participate fully in academic activities and may hesitate to join various university events. These financial challenges are deeply personal and private, making it difficult for students to share their concerns [11]. This sense of isolation can leave them feeling abandoned and lonely. Such situations can be extremely uncomfortable and have a direct impact on students' mental health and academic performance [12].

When students are trapped in negative mental states, it becomes challenging for them to focus on their studies. In some cases, these struggles contribute to more severe consequences [13]. Recently, suicide has emerged as a significant public health issue in Bangladesh, as the number of suicide cases among students has risen in recent years. A major cause of these suicides is depression, which is often linked to financial stress [14]. Financial stress negatively affects both the academic performance and social interactions of male and female students [15]. Female university students experience particularly high levels of financial stress, with a strong connection between financial difficulties and stress [16]. Additionally, low-income students often face social rejection from both teachers and peers [17].

As the number of students attending Comilla University is increasing, financial stress continues to be a major obstacle to academic achievement. Consequently, it is important to address the problem of financial stress seriously. Only a few studies have focused on financial stress and mental health among Bangladeshi university students, and the majority of earlier research has taken a global perspective. Very little academic research has been conducted on the challenges of tertiary education and the factors affecting academic performance in tertiary education from the perspective of Comilla University, and no study has specifically examined how financial stress affects students' academic performance at Comilla University. By addressing these gaps, this research aims to provide a comprehensive understanding of how financial stress affects students' academic success. The results are expected to guide the development of focused mental health interventions and financial assistance plans that improve university students' academic performance and overall well-being.

Based on the above-mentioned purpose, the primary objective is to analyze the impact of financial stress on academic performance. The specific objectives are to evaluate the impact of associated factors on financial stress levels, identify and analyze the factors that most significantly affect students' academic performance, and examine whether there are gender differences in academic outcomes.

2. Review of Literature

Literature refers to the existing body of research, and the process of examining previous findings related to a research topic is called a literature review. Academic research papers, theses, dissertations, and scholarly articles frequently contain literature reviews. According to the Cambridge University Reporter, academic performance is frequently defined in terms of examination performance. In this study, academic performance is characterized by students' overall yearly performance, which culminates in the Cumulative Grade Point Average (CGPA). The CGPA score reflects students' performance in tests, coursework, and examinations.

2.1. Family Income and Students' Academic Performance

There is already substantial literature on the effect of family income on student performance. Many studies identify a positive relationship between family income and academic performance. For example, Raychaudhuri et al. [18] conducted a case study in the Agartala Municipal Council region to investigate the factors influencing pupils' academic performance. One of the main variables in their research was family income. Students in government and government-aided schools,

as well as their households, were randomly surveyed to gather primary data. Regression analysis revealed that the presence of trained teachers, the mother's educational background, and student attendance had beneficial effects on academic achievement. They also discovered that a variety of socioeconomic factors affect pupils' academic performance. They concluded that students' performance and likelihood of dropping out are influenced by their financial situation.

Similarly, Lacour & Tissington [19] examined how poverty affected academic performance in the United States. They concluded that low academic achievement is closely linked to a lack of resources, particularly financial resources, because poverty directly affects students' success through limited access to necessary support. Ali et al. [20] examined the academic performance of graduate students at the Islamia University of Bahawalpur Rahim Yar Khan Campus. Guardian socioeconomic status was one of the factors compared with students' academic achievement. Data were gathered from 100 randomly selected students using questionnaires. The data were analyzed using linear regression, correlation analysis, and descriptive statistics. The results showed that students' higher academic performance was significantly influenced by their father's or guardian's stronger socioeconomic position.

Furthermore, families with greater incomes are more likely to purchase educational resources such as laptops and internet access, which are increasingly essential for academic success in today's technology-based learning environment [21, 22] examined the influence of parental income on students' academic performance. Using a descriptive survey design, the study found that respondents agreed that parental income influences academic performance among final-year business education students at Kwara State University.

The following hypothesis is proposed:

H_1: There is an impact of family income on CGPA.

2.2. Class Attendance and Students' Academic Performance

Prior research has demonstrated a strong relationship between academic achievement and class attendance across many educational settings. For example, Lukkarinen et al. [23] examined the relationship between university students' academic achievement and class attendance. They sampled 86 students and used regression and cluster analysis. According to the study, academic performance significantly benefited from regular attendance, whereas irregular and independent students were negatively affected.

Sarker [24] investigated the impact of class attendance on the academic performance of BBA students. Data for the study were gathered at Habibullah Bahar University College. The findings showed that students who attended class more than 80% of the time received higher grades than those who did not.

According to Ancheta et al. [25], students' academic performance is greatly influenced by attendance in class. According to college policy, 71% of the 155 randomly selected Omani undergraduate students in their study had attendance below 70%. The average score for students with good attendance was 49, whereas the average score for students with moderate attendance was 48. Students with low attendance, on the other hand, received an average score of 37, which is regarded as a failing grade. The study concluded that academic performance and class attendance are positively correlated.

Mia et al. [26] examined the impact of class attendance on academic performance among undergraduate students in the Department of Economics at Dhaka International University (DIU). A sample of 181 undergraduate students was surveyed to explore the relationship between attendance and academic performance, measured by Semester Cumulative Grade Point Average (SCGPA). Data were analyzed using ordinary least squares (OLS) regression, revealing a positive and significant relationship between class attendance and academic performance.

The following hypothesis is proposed:

H_2: There is a relationship between CGPA and class attendance.

2.3. Working Hours and Students' Academic Performance

According to a Toronto study by Cheng [27], students who worked more than 20 hours per week had a dropout rate of 16%, which rose to 33% for those who worked excessive hours. Similarly, Singh et al. [28] found that the number of hours worked had a detrimental effect on academic performance, independent of socioeconomic status or prior academic achievement.

In Body et al. [29], in a study of university students in France, found that employment negatively affected academic performance. According to the study, students who worked more than 16 hours per week were significantly affected, whereas those who worked fewer than 8 hours were not.

Ngoc Ha et al. [30], in a study conducted at Ton Duc Thang University in Vietnam, evaluated the demand for student employment and employment conditions related to the

impact of part-time work on learning outcomes. They concluded that students worked part-time mainly to supplement their income. In addition, part-time employment did not improve academic achievement and had negative effects on students working as deliverers and leaflet distributors.

Akter et al. [31] used the ordinary least squares (OLS) approach to estimate the effects of students' part-time work involvement and work intensity on academic achievement. The regression results indicated a significant negative relationship between academic achievement and work engagement. Additionally, CGPA decreased as part-time working hours increased. Alam et al. [32], using a multiple regression model, found that age, gender, co-curricular activities, and family income significantly influenced students' engagement in part-time work. Study time had a positive impact on academic performance, whereas part-time work had a direct negative effect.

However, Wang et al. [33] argued that part-time work has no effect on academic achievement in Chinese society. They viewed part-time employment as a diverse experience and noted that incentives to work have the greatest positive effect when employment provides skill development opportunities and is relevant to students' fields of study.

Based on the above arguments, the following hypothesis is proposed:

H_3: There is a relationship between CGPA and working hours.

3. Materials and Methods

3.1. Area of the Study

This study was conducted at Comilla University, a tertiary institution in Bangladesh. The research focused on undergraduate and postgraduate students from various departments.

3.2. Study Design

This study adopted a quantitative survey-based approach to examine how financial stress affects students' academic performance. The variables used for inferential analysis were financial stress, family income, working hours, and class attendance. Other variables, including participants' opinions and perceptions regarding different factors, were used in the descriptive analysis.

3.3. Population and Sample Size

The sample for this study was selected using a stratified random sampling technique. This technique was employed to ensure a fair comparison between male and female students regarding the impact of financial stress on academic performance. Both undergraduate and postgraduate students currently enrolled at Comilla University were included in the study.

The total student population of the university was 6,924, and 152 students were selected through stratified random sampling, consisting of 76 male and 76 female students. To determine the sample size from the known population, Yamane's simplified formula was used. The calculation formula is presented in Equation 1.

$$n = \frac{N}{1+N(e)^2} \quad (1)$$

Here, n is the sample size, N is the population size (6,924), and e is the level of precision or margin of error (8%). Based on the formula in Equation 1, the calculation is presented below:

$$n = \frac{6924}{1+6924(0.08)^2}$$

$$n = \sim 152$$

Therefore, the sample size of this study was 152 according to Yamane's simplified formula.

3.4. Data Collection

The research was descriptive and inferential in nature. The study was based on primary data collected through a well-designed questionnaire comprising two sections. The first section consisted of questions on the demographic profile of the respondents, while the second section included questions related to CGPA, family income, working hours, and class attendance. Students' opinions regarding different statements used in the study were collected using a Likert scale, and the data were presented in tabular form. Data were collected through online questionnaires distributed to participants via email, Telegram, WhatsApp, Messenger, and other social media platforms to reach students effectively.

3.5. Data Analysis

The collected data were analyzed using both descriptive and inferential methods. Descriptive analysis was used to present demographic information and financial stress factors. Correlation analysis was conducted to test hypotheses and examine relationships among variables, while regression analysis was used to determine the nature of the relationship between the dependent variable and the independent variables.

3.6. Operational Definition

It is not possible to measure students' financial stress directly. Therefore, several questions were used to

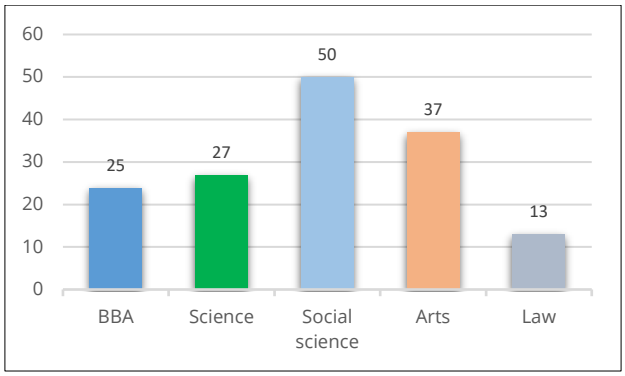

Figure 1. Number of respondents by faculty.

Table 1. Respondents by faculty.

Faculty	Frequency	Percentage
BBA	25	16.4
Science	27	17.8
Social science	50	32.9
Arts	37	24.3
Law	13	8.6

Table 2. Respondents by gender.

Gender	Frequency	Percentage
Male	76	50
Female	76	50

Table 3. Respondents by age group.

Age Group	Frequency	Percentage
18–20	0	0
20–22	32	21.1
22–24	85	55.9
24–26	35	23

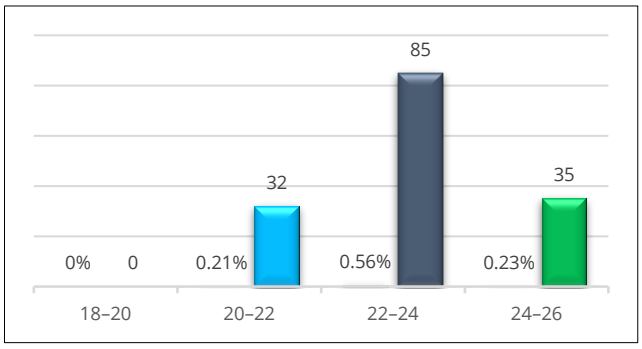

Figure 3. Number and percentage of respondents by age group.

identify the level of stress [10]. Their study suggested the following questions:

1. Cannot perform personal activities properly because of a shortage of money.
2. I feel stressed because of dues.
3. I cannot participate in university programs because of a shortage of money.

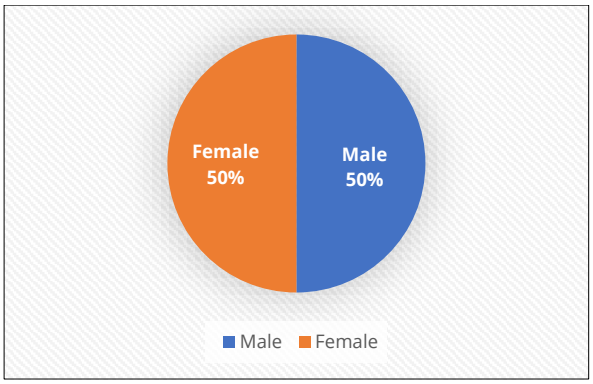

Figure 2. Percentage of respondents by gender.

4. Cannot perform academic activities properly because of a shortage of money.
5. Cannot perform social activities properly because of a shortage of money.

Based on their suggested method for determining financial stress, this study included the following questions to measure financial stress among students:

Q1. Do you ever face difficulties in financing your expenses?
Q2. Do you feel stressed because of your financial struggles?
Q3. Do you have a part-time job or provide private tuition?

4. Results and Discussion

4.1. Respondents' Faculty, Gender, Age, Academic Program, and CGPA

Table 1 and Figure 1 show the distribution of the 152 respondents based on their academic faculty. The study found that the Social Science faculty had the highest representation, comprising 50 students (32.9%) of the total respondents. The second-largest group was from the Arts faculty, accounting for 37 students (24.3%). The Science faculty followed with 27 students (17.8%), while respondents from the BBA faculty made up 24 students (16.4%). The smallest group was from the Law faculty, representing only 13 students (8.6%) of the total sample.

Table 2 and Figure 2 show the gender distribution of the respondents. In this study, 76 male students (50%) and 76 female students (50%) were included. An equal proportion of male and female respondents was selected because the fourth objective of the study was to examine gender differences in academic outcomes.

Table 3 and Figure 3 presents the age group distribution of the 152 respondents, providing insights into the participants' age categories. The largest proportion, 55.9%, belonged to the 22–24 age group, indicating that

Table 4. Descriptive statistics for CGPA.

Indicator	N	Min.	Max.	Mean	Std. Dev.
CGPA (Up to Last Semester)	152	2.70	3.95	3.3028	0.2824

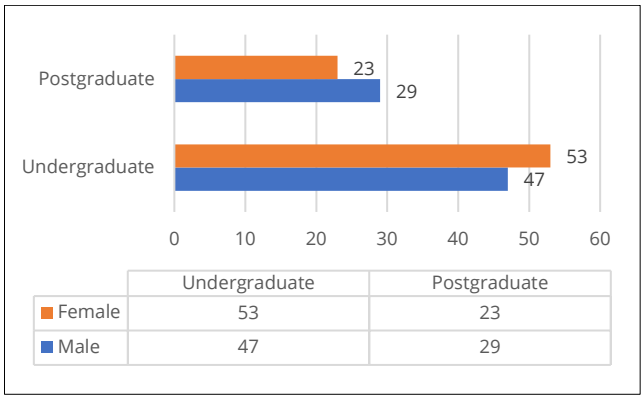

Figure 4. Number of respondents by current academic program.

more than half of the respondents were within this range and were likely final-year undergraduate students. The second-largest group, 23%, fell within the 24–26 age range, which may represent postgraduate students. Meanwhile, 21.1% of the respondents were in the 20–22 age range, representing a slightly younger demographic, possibly second-year students. No respondents, or only a negligible number, were in the 18–20 age range. Overall, the data highlight that most respondents were concentrated between 22 and 26 years of age.

The total number of respondents was evenly split between males (76) and females (76), ensuring gender parity in the sample. A balanced gender distribution was maintained to allow a fair comparison of financial stress between male and female students. However, respondents in undergraduate and postgraduate programs were selected randomly.

Figure 4 shows that 100 respondents (65.8%) were enrolled in undergraduate programs. Among them, 53% were female students (53 out of 100), while 47% were male students (47 out of 100). Meanwhile, 52 respondents (34.2%) were enrolled in postgraduate programs. Among them, 55.8% were male students (29 out of 52), compared to 44.2% female students (23 out of 52).

Table 4 presents descriptive statistics for CGPA (Cumulative Grade Point Average) for 152 students. The data show that students' academic performance varied, with CGPAs ranging from 2.70 to 3.95. This indicates some diversity in academic performance among the respondents. The lowest CGPA observed in the sample was 2.70, which may indicate lower academic performance. The mean CGPA was 3.3028, indicating generally good academic standing. The standard deviation was 0.28236, indicating that the CGPA values were relatively close to the mean.

4.2. Descriptive Analysis of Factors Contributing to Financial Stress Among Students

4.2.1. Financial Stress from Difficulties in Financing Expenses

Table 5 and Figure 5 describe whether students face difficulties in financing their expenses. Only 11 participants (7.2%) responded that they faced such difficulties all the time, while 98 participants (64.5%) responded many times, indicating that most students face difficulties in financing their expenses. In addition, 33 respondents (21.7%) stated that they sometimes faced problems managing their expenses. Only 10 respondents (6.6%) mentioned that they did not face difficulties in financing their expenses. Students who face difficulties in managing their expenses may experience negative effects on their academic performance.

4.2.2. Financial Stress from Unexpected Financial Expenses

Table 6 and Figure 6 describe the impact of unexpected financial expenses on academic performance. A total of 75 participants (49.3%) responded that unexpected financial expenses affected their academic performance all the time, while 63 participants (41.4%) stated that such expenses sometimes affected their academic performance. Meanwhile, 14 respondents (9.2%) reported that unexpected financial expenses never affected their academic performance.

4.2.3. Feeling Stressed Due to Money Problems

Table 7 and Figure 7 describe whether students feel stressed due to financial struggles and how this affects academic performance. The study found that a large proportion of students, 72 participants (47.7%), responded that they often feel stressed due to financial problems and that this influences their academic performance. Furthermore, 41 respondents (27%) stated that they feel stressed due to financial struggles all the time, which negatively affects their academic performance. Another 24 respondents (15.8%) reported that they sometimes feel stressed due to financial struggles, with a limited effect on academic performance. Finally, 15 students (9.9%) stated that they never feel stressed due to financial struggles.

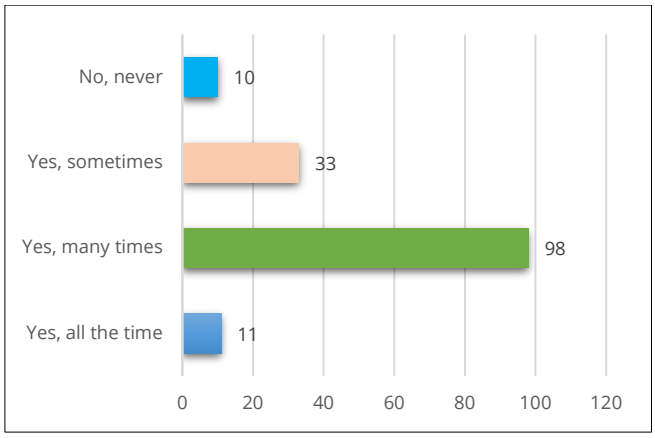

Figure 5. Overview of respondent response frequency for difficulties in financing expenses.

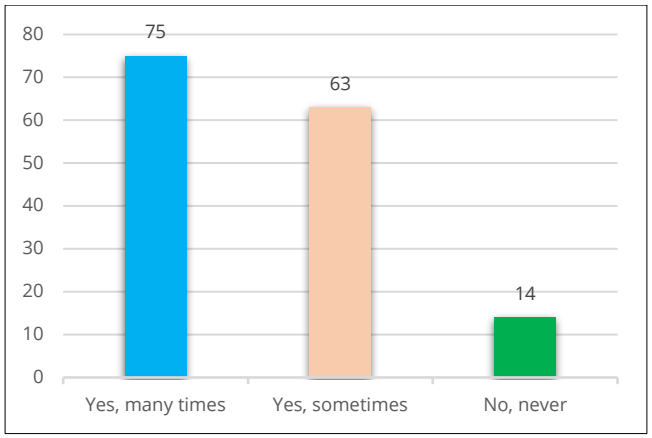

Figure 6. Overview of respondent response frequency for unexpected financial expenses.

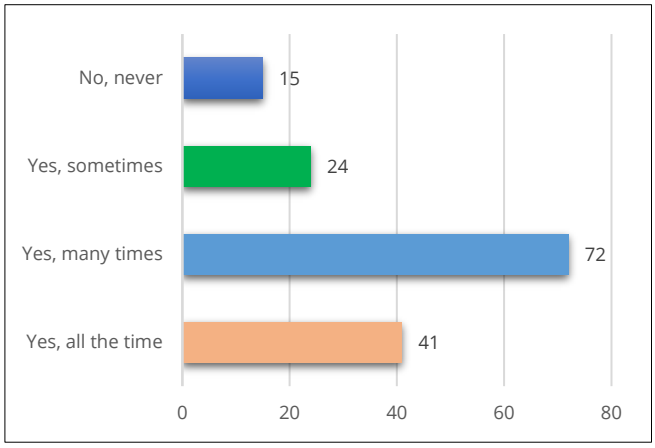

Figure 7. Overview of respondent response frequency for feeling stressed due to financial struggles.

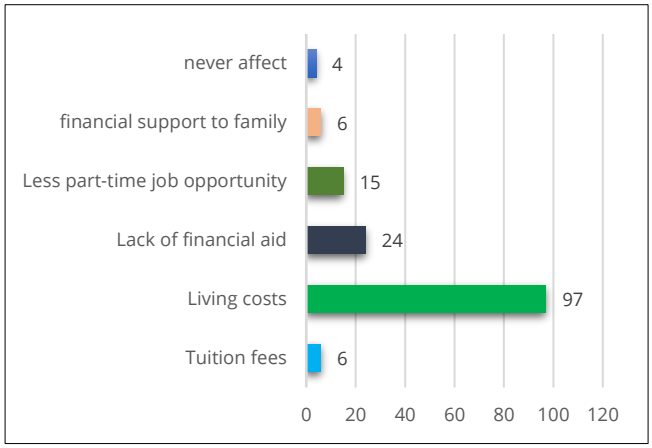

Figure 8. Overview of respondent response frequency for factors mostly affect academic performance.

4.3. Analysis of the Factors That Most Significantly Affect Students' Academic Performance

Financial pressures can significantly affect students' academic performance. Factors such as tuition fees, living costs, lack of financial aid, limited part-time job opportunities, and financial support for family can divert students' focus from their studies, resulting in lower academic outcomes. The third objective of this study is to identify which of these factors have the most significant influence on students' academic performance.

Table 8 and Figure 8 show that living costs are the most significant factor affecting academic performance, with over 60% of respondents identifying them as a major challenge. The lack of financial aid is another important factor, affecting 16% of respondents. Limited part-time job opportunities affect nearly 10% of respondents, indicating that many students rely on part-time work to support themselves during their studies. Minor factors such as tuition fees and financial support for family are less frequently cited as influential. These findings highlight the need to reduce students' financial burdens.

4.4. Gender Financial Stress and Differences in Academic Outcomes

An independent samples t-test was used to identify gender differences in academic performance under financial pressure. This analysis aimed to determine which group experiences greater financial stress and which performs better academically.

Table 9 shows that the mean stress score for males was 2.0132, with a standard deviation of 0.88684. For females, the mean was 2.1579, with a standard deviation of 0.92452. Female students reported slightly higher levels of stress due to financial struggles compared to male students, although the difference was minimal. The p-value of 0.326 was greater than 0.05, indicating no statistically significant difference in stress levels between males and females.

Regarding academic performance, the mean CGPA for males was 3.2459, with a standard deviation of 0.27682, while the mean CGPA for females was 3.3609, with a standard deviation of 0.27853. Female students had a higher mean CGPA than male students, with a mean

Table 5. Respondent response for difficulties in financing expenses.

Age Group	Frequency	Percentage
Yes, all the time	11	7.2
Yes, many times	98	64.5
Yes, sometimes	33	21.7
No, never	10	6.6
Total	152	100

Table 6. Respondent response for unexpected financial expenses.

Response	Frequency	Percentage
Yes, many times	75	49.3
Yes, sometimes	63	41.4
No, never	14	9.2
Total	152	100

Table 7. Respondent response for feeling stressed due to financial struggles.

Age Group	Frequency	Percentage
Yes, all the time	41	27
Yes, many times	72	47.4
Yes, sometimes	24	15.8
No, never	15	9.9
Total	152	100

Table 8. Respondent response for factors mostly affect academic performance.

Factors	Frequency	Percentage
Tuition fees	6	3.9
Living costs	97	63.8
Lack of financial aid	24	15.8
Less part-time job opportunity	15	9.9
Financial support to family	6	3.9
Never affect	4	2.6

difference of -0.11500. This suggests that female students achieved slightly higher academic performance than male students. The t-value was -2.553, and the p-value of 0.012 was less than 0.05, indicating a statistically significant difference in CGPA between males and females.

4.5. Correlation Analysis

4.5.1. Correlation Between CGPA and Family Income

Table 10 shows that the study examined the relationship between CGPA and family income using Pearson correlation. The result shows a moderate positive correlation, with a Pearson correlation coefficient of 0.492, indicating that as family income increases, CGPA also tends to increase. The statistical significance is less than the alpha level of 0.01 (1% significance level), which means the correlation is statistically significant, and the null hypothesis is rejected. The study suggests that students from higher-income families may achieve better academic performance, as they may benefit from better resources or reduced financial stress, whereas students from lower-income families tend to have lower CGPA scores.

4.5.2. Correlation Between CGPA and Class Attendance

Table 10 also shows that the study found a moderately positive correlation between CGPA and class attendance, with a Pearson correlation coefficient of 0.475. This suggests that regular class attendance is important for academic performance. The p-value is less than 0.01, which means the correlation is statistically significant, and the null hypothesis is rejected. The study suggests that students who attend classes regularly are more likely to achieve improved academic success.

4.5.3. Correlation Between CGPA and Working Hours

Table 10 shows that the study found a moderate negative correlation between CGPA and working hours. The Pearson correlation coefficient was -0.357, indicating that CGPA decreases as working hours increase. The p-value was 0.00, indicating a statistically significant correlation and leading to the rejection of the null hypothesis. The conclusions were drawn based on a sample size of 152 students. The study suggests that increased working hours have a negative correlation on academic performance.

4.6. Regression Analysis

The regression results in Table 11 shows that the coefficient for working hours (β_1) is -0.093. This negative coefficient indicates that as working hours increase, CGPA decreases. For every additional working hour, CGPA decreases by 0.093. This variable is statistically significant because the p-value (0.005) is less than 0.05.

The coefficient for family income (β_2) is 0.079. This positive coefficient indicates that as family income increases, CGPA increases. For every additional increase in family income, CGPA increases by 0.079. This variable is statistically significant because the p-value (0.000) is less than 0.05.

The coefficient for class attendance (β_3) is 0.686. This positive coefficient indicates that as class attendance increases, CGPA increases. For every additional increase in class attendance, CGPA increases by 0.686. This variable is statistically significant because the p-value (0.003) is less than 0.05.

Overall, the regression model shows that the independent variables affecting CGPA are statistically significant and explain a meaningful portion of the variance. The model explains 29.9% of the variation in

Table 9. Gender financial stress and differences in academic outcome.

Variable	Gender	N	Mean	Std. Dev.	Std. Er. Mean	t-Stat.	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference
Feeling Stressed (Financial Struggles)	Male	76	2.013	0.887	0.102	-0.99	150	0.326	-0.145	(-0.435, 0.146)
	Female	76	2.158	0.925	0.106					
CGPA	Male	76	3.246	0.277	0.032	-2.55	150	0.012	-0.115	(-0.204, -0.026)
	Female	76	3.361	0.279	0.032					

Table 10. Correlation between CGPA and family income, CGPA and class attendance, and CGPA and working hours.

Dependent Variable	Independent Variable		
	Family Income	Class Attendance	Working Hours
CGPA	0.492***	0.475***	-0.357***
	(0.000)	(0.000)	(0.000)

Note: *** indicate significant level at 1%.

Table 11. Regression results.

Variable	*Unstandardized Coef.*		*Standardized Coef.*	t-Stat.	Sig.
	Beta	Std. Er.	Beta		
C	2.658	0.166	–	15.965***	0.000
Working Hours	-0.093	0.033	-0.231	-2.852***	0.005
Class Attendance	0.686	0.173	0.311	3.959***	0.000
Family Income	0.079	0.026	0.245	3.010***	0.003

Note: *** indicates significant level at 1%.

Table 12. Results of regression model summary.

Model	R	R^2	Adj. R^2
1	0.547	0.299	0.281

Table 13. Results of ANOVA test.

Model	F-stat.	Sig.
1	17.050***	0.000

Note: *** indicates significant level at 1%.

CGPA. Increased working hours negatively affect CGPA by reducing it by 0.093. In contrast, higher class attendance increases CGPA by 0.686, while higher monthly family income increases CGPA by 0.079. Therefore, the study found that class attendance has the strongest positive effect relative to the other variables.

The results in Table 12 show that the value of R is 0.547, indicating a moderate correlation between the independent variables, namely working hours, family income, and class attendance, and CGPA. The R-square value of 0.299 indicates that 29.9% of the variation in CGPA is explained by the independent variables. The adjusted R-square is 0.281, indicating that after adjusting for the regressors, the model explains 28.1% of the variation in CGPA. The ANOVA F-statistic reported in Table 13 is 17.050, indicating that the overall regression model is statistically significant. The p-value is 0.000. Since the p-value is less than 0.05, the model is significant. All regressors collectively influence students' academic performance. This suggests that improvements in these factors, when addressed simultaneously, can meaningfully enhance students' academic outcomes.

4.7. Discussion

The study aimed to examine the impact of financial stress on academic performance among students at Comilla University. The findings indicate that financial stress negatively affects students' academic performance.

The study found that students experienced financial stress mainly because of their daily living expenses, with 63.8% of respondents identifying this as the most significant factor. Lack of financial aid (15.8%) and limited part-time job opportunities (9.9%) also contributed to financial stress and significantly affected students' academic performance.

From the independent samples t-test, the study found that female students reported higher levels of financial stress compared to male students. The mean value for females was 2.158, compared to 2.013 for males; however, the difference was not statistically significant, indicating that the gap was relatively small. The study also found that female students demonstrated higher academic performance, with a mean CGPA of 3.361 compared to 3.246 for male students, and this difference was statistically significant ($p = 0.012$).

The correlation analysis among family income, academic results, and working hours produced significant findings. The study found a positive correlation between students' family income and CGPA, with a Pearson correlation

coefficient of 0.492 ($p < 0.01$), indicating that higher family income was associated with better academic performance. The correlation between CGPA and class attendance was also positive, with a Pearson correlation coefficient of 0.475 ($p < 0.01$), suggesting that regular attendance was associated with improved CGPA. In contrast, the correlation between CGPA and working hours was negative. The Pearson correlation coefficient for working hours was -0.357 ($p < 0.01$), indicating that increased working hours negatively affected CGPA.

From the regression analysis, the study found that class attendance and family income had positive effects on CGPA, with $\beta = 0.686$ ($p < 0.001$) for class attendance and $\beta = 0.079$ ($p = 0.003$) for family income. These positive coefficients indicate that increases in family income and class attendance were associated with better academic performance. Meanwhile, working hours had a negative effect on students' academic performance, with $\beta = -0.093$ ($p = 0.005$). This indicates that for every additional increase in working hours, CGPA decreased by 0.093.

The regression analysis also found that the model explained 29.9% of the variance in CGPA, and all regressors had a significant collective influence on students' academic performance, indicating that these factors jointly play a meaningful role in shaping academic outcomes. This suggests that targeted interventions addressing these variables in combination, rather than in isolation, may be more effective in improving students' academic performance.

5. Conclusions

The findings of the study revealed that financial stress significantly affects students' ability to perform academically, with high living costs and limited financial aid identified as the primary stressors. Gender differences were also notable, as female students reported slightly higher stress levels than male students but achieved better academic outcomes, with a statistically significant difference in CGPA. Correlation analysis highlighted that higher family income and regular class attendance positively influenced academic performance, while increased working hours had a negative effect. Regression analysis further emphasized that class attendance was the strongest predictor of CGPA, followed by family income and working hours.

Based on the findings, the paper recommends that, because rising working hours negatively affect academic performance, university management should expand financial aid programs, including scholarships and fee waivers. By reducing the direct cost burden, these measures may lower students' financial anxiety and improve academic performance. To prevent financial instability, it is also essential to ensure that government loans and bursaries are verified and distributed before or at the beginning of each semester.

Considering the strong positive effect of class attendance on academic performance, university authorities should proactively provide counseling services and peer support groups not only for academic stress but also for financial anxiety. Counseling should also focus on time management to help students balance their academic responsibilities and financial obligations. In addition, university authorities should collaborate with the local private sector to provide students with affordable housing and transportation. Subsidized on-campus housing could directly reduce daily financial pressure, enabling students to focus on their academic goals.

While the research considered several important factors and differences, there were some limitations that may affect the accuracy of the results. First, the study focused only on a limited number of factors related to financial stress and academic performance, while other relevant factors were not included. Second, the research was conducted only among students at Comilla University. Therefore, the findings may not be generalizable to students at other universities or in other regions. Third, the study used survey responses in which students reported their own experiences. Some responses may not have been fully accurate because of personal perceptions or memory bias. In addition, some students were unwilling, unavailable, or unable to provide complete information, which may have created gaps in the data. Finally, the study was conducted at one point in time. Therefore, it does not capture the long-term effects of financial stress on students.

Author Contributions: Conceptualization, S.M.; methodology, S.M.; software, S.M.; validation, S.M.; formal analysis, S.M.; investigation, S.M.; resources, S.M.; data curation, S.M.; writing—original draft preparation, S.M.; writing—review and editing, S.M.; visualization, S.M.; supervision, S.M.; project administration, S.M. The author has read and agreed to the published version of the manuscript.

Funding: This study does not receive external funding.

Data Availability Statement: The data are available upon request.

Acknowledgments: The author expresses her gratitude to Comilla University.

Conflicts of Interest: The author declare that there are no conflicts of interest.

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