Factors Affecting Students' Academic Performance Mediated by their Motivation for Learning

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Abstract: The study was intended to identify the factors that affect students' academic performance mediated by their motivation for learning. The study employed a cross-sectional survey where primary data were collected from a total of 206 samples randomly drawn from 5505 undergraduate students of a public university in Bangladesh. Both descriptive and inferential statistics were used to analyze data. The study confirmed that there is a very strong positive association between students' academic performance and their motivation for learning ($\gamma = .942$; $p < 0.01$). The study claimed that the factors involving students' gender, interests on academic majors, academic results in previous semesters, physical and mental health, participation in class, participation in co-curricular activities, family economic condition, family support, parental guidance, necessity for getting job, necessity for making money, necessity for economic self-sufficiency, necessity for helping family financially, departmental learning facilities, teachers' quality, student-teacher relationship, and institutional learning environment positively affect students' academic performance mediated by their motivation for learning. These associations are statistically significant ranging from at 90% to 99% confidence levels. The study suggested that students, their families and educational institutions should play important roles in strengthening students' motivation for learning that would lead to their better academic performance.

Keywords: Academic Performance, Economic Factors, Family Factors, Institutional Factors Motivation, Personal Factors.

1.   Introduction

Motivation is central to all sorts of human actions. It may be termed as a factor that pushes or drives an individual in a certain direction or behave in a certain manner. It involves the forces within a person that influences the direction, intensity and persistence of his or her volunteer behaviour. It is the integral part of our lives which guides and directs what we think, feel or act. Thus, any human behaviour is the result of some sort of motivation. There are two types of motivation – intrinsic and extrinsic – that act upon an individual behaviour in two different ways. Intrinsic motivation involves the self-generated factors or internal driving forces that influence an individual behaviour from within. It fulfils an individual's basic psychological needs. In contrast, extrinsic motivation is a desire that directs an individual to achieve some external reward or incentive. It does not directly contribute to the fulfilment of the basic psychological needs of an individual; rather it contributes to the achievement of external gains of an individual such as money, fame, and power. Since motivation is an important aspect of a human organism and drives a student in reaching learning goals, the academic success or performance of a student mostly depends on how much he or she is motivated for learning (Filgona et al., 2020;

Rahman, Farid, & Tanny, 2021). As such, the study of students' motivation for learning and their academic performance is the key component of understanding teaching-learning activities and has become a growing area of academic discussion and research over the years in the field of educational psychology and other such disciplines (Ullah et al., 2013; Gajghat et al., 2017; Olufemioladebinu, Adediran, & Oyediran, 2018; Firdaus, 2019; Asif et al., 2020, Khan & Golder, 2020; Alam & Islam, 2021). Many studies suggest that students' motivation for learning has a positive effect on their academic performance. Goodman et al. (2011) opined that intrinsic motivation is the strongest factor impacting students' academic performance. Ariani (2016) suggested that students' academic motivation has a strong effect on their academic performance. Al-oqleh and Teh (2019) indicated that students' motivation for has a predictive effect on their academic achievement. Hence, it can be theorised that students' motivation for learning has a positive association with their academic performance. Put differently, the more students are motivated for learning, the better their results are. However, students' motivation for learning does not occur automatically or without some stimulus. There are various factors that affect students' motivation for learning. Several studies have been carried out in order to determine the factors influencing students' motivation for learning. For example, Ullah et al. (2013) suggested that the adequate learning environment, use of effective teaching methodologies, and students' self-motivated involvement are the primary factors that enhance students' motivation for learning. Moreover, Firdaus (2019) propounded that that parents' educational background, teachers' good role, good friends' influence and cohesive school management motivate the students for learning.

In the academia, a number of research works are available on the factors that affect students' academic performance or achievement. Mushtaq and Khan (2012) suggested that students' learning facilities, communication skills, and proper guidance are positively associated with the academic performance of the students. Maric and Sakac (2014) put forward that material rewards and social prestige are the most important factors contributing to the students' academic achievement. However, internal aspirations for achievement are the most internal factor of learning and achieving academic achievement among the participants. Gajghat et al. (2017) proposed that students' previous academic background, personal characteristics, learning habits, and college environmental factors are associated with the students' academic performance. Olufemioladebinu et al. (2018) put forward that the students' motivation, involvements and subjects, parents' educational background and monthly income, teachers' factors, and school learning facilities have much influence on the students' academic performance. Atchia and Chinapah (2019) suggested that school leadership, student, socioeconomic factor, and tuition teacher have significant association with the students' academic performance. Omran and Saleh (2019) propounded that students' academic stress, teaching style, English language and communication skills, language assessment, and students' self-concept have effects on the students' academic performance. Asif et al. (2020) opined that students' gender, educational levels of elder brother and sister, teachers' academic background, group of the students, type of school medium of the study, parents' academic background, and parents' income have significant effects on the students' academic performance. Khan and Golder (2020) pointed out that several indicators such as gender, teacher-student relationship, academic participation, participation in co-curricular activities, academic skill, time spent for academic study, plan about own subject, preparing academic lessons, family support and the like have significant association with the students' academic performance. Alani and Howas (2021) investigated the factors affecting the academic performance of students of Sohar University, Iraq. They proposed that several factors such as students' personal factors, teacher factors, and institutional factors have significant association with their academic performance. Islam and Tasnim (2021) showed that regular study, regular attendance, dedication and self-confidence, hard work, support from family members and friendly academic environment positively affect the academic performance of students. Alam and Islam (2022) indicated that mothers' education, students' socioeconomic background, types of college, course teachers' strategy, choice of their majors, academic environment in the department, and availability of internet have significant effects on students' academic performance.

Hence, a variety of factors such as students' gender, socioeconomic background, academic participation, guidance, interests on their majors, learning facilities, learning environment and the like have effects on their academic performance (Mushtaq & Khan, 2012; Maric & Sakac, 2014; Gajghat et al., 2017; Olufemioladebinu, et al., 2018; Atchia & Chinapah, 2019; Asif et al., 2020; Khan & Golder, 2020; Alani & Howas, 2021). This is noteworthy that these factors may not affect students' academic performance directly, rather they affect via influencing their motivation for learning since motivation

is at the centre of all human activities. This is note to that several studies have been carried out so far to identify the factors that affect students' academic performance from the Bangladesh perspective (Amin & Sharmin, 2016; Akter & Biswas, 2018; Salan, 2018; Khan & Golder, 2020; Islam & Tasnim, 2021; Jony, 2021; Rahman et al., 2021; Alam & Islam, 2022). However, the mediating effect of students' motivation for learning has been overlooked thus far in social research. Moreover, several other important factors have not been studied so far. Hence, the availability of studies in the academia as to the factors affecting students' their academic performance is far from satisfactory. Thus, the study was intended to investigate the factors that affect students' academic performance mediated by their motivation for learning. The study had two specific objectives pertaining to its purpose. In this regard, two research questions were investigated in the study corresponding to two research objectives which are presented below in Table 1:

Table1. Statement of research objectives and questions

No.	Research objectives	Research questions
1.	To investigate the factors affecting students' motivation for learning	What is the nature and significance of association between several factors and students' motivation for learning?
2.	To find out the effect of students' motivation for learning on their academic performance	What is the nature and significance of association between students' motivation for learning and their academic performance?

2. Methodology

2.1 Research Design and Participants

The study was a survey research where a cross-sectional design was employed which involved examination of many cases at a single point in time (Neuman, 2014). As Babbie states, a cross-sectional study is the observations of a sample, or cross section, of a population that are made at one point in time (2010). As the study was a cross-sectional, it allowed the researcher to look at several characteristics of the population at one point in time. The study was purposely conducted in Noakhali Science and Technology University (NSTU) bearing in mind the curiosity of the researchers to investigate the factors affecting students' motivation for learning. This is to note that NSTU is a public university of Bangladesh that is situated in the district of Noakhali which is in the southern part of Bangladesh. NSTU has 30 academic departments under six faculties and two institutes. As of August 2022, the total numbers of the students of the NSTU were 6590, of whom a total of 5505 students were pursuing undergraduate courses under its various academic departments.

Since the study was carried out among the undergraduate students of the NSTU only, a total of 5505 was a target population where 3244 were males and the rest (2261) were females. Out of 30 academic departments, 19 were chosen randomly. Thereafter, by using Yamane's formula(n = $\frac{N}{1+N*e2}$), a sample size of 373 was determined. However, the researchers could not get access to all the samples due to a problem of contact. As such, the sample size was fixed at 206 for the convenience of the researchers. Based on simple random sampling via lottery method, the aforesaid samples were drawn from the target population to ensure that each and every unit of population has an equal chance to be included in the sample (Fraenkel & Wallen, 2009). The descriptive statistics of the respondents' socio-demographic characteristics are presented below in Table 2:

Table 2. Socio-demographic characteristics of the respondents

Variables		Frequency (f)	Percent (%)
Department	ACCE	8	3.9
	AGRI	11	5.3
	BANG	7	3.4
	BMB	8	3.9
	BMS	10	4.9
	DBA	13	6.3
	EDU	11	5.3
	EDU AD	11	5.3
	ENG	11	5.3
	FIMS	8	3.9
	FTNS	17	8.3
	LW	10	4.9
	MIS	9	4.4
	OCEAN	11	5.3
	SOC	19	9.2
	SOW	12	5.8
	STAT	8	3.9
	THM	8	3.9
	ZOO	14	6.8
	Total	206	100.0
Gender	Male	136	66.0
	Female	70	34.0
	Total	206	100.0
		Frequency (f)	Percent (%)
Academic Year	First year	28	13.6
	Second year	69	33.5
	Third year	65	31.6
	Fourth year	44	21.4
	Total	206	100.0
Age	Mean	Median	SD
	22.57	22.00	1.118
Current TGPA/CGPA		Mean	N
	Male	3.3329	136
	Female	3.4289	70
	Total	3.3652	206

Note: ACCE = Applied Chemistry and Chemical Engineering; AGRI = Agriculture; BANG = Bangla; BMB = Biochemistry and Molecular Biology; BMS = Bangladesh and Muktijudhho Studies; DBA = Business Administration; EDU = Education; EDU AD = Educational Administration; ENG = English; FIMS = Fisheries and Marine Science; FTNS = Food Technology and Nutrition Science; LW = Law; MIS = Management Information Systems; OCEAN = Oceanography; SOC = Sociology; SOW = Social Work; STAT = Statistics; THM = Tourism and Hospitality Management; ZOO = Zoology.
Source: Fieldwork, August-October, 2022.

2.2   Measurement and Data Collection Tools

The study basically employed a five-point Likert type scale, a type of ordinal scale, which was defined from very lower to very higher degree of favourableness. The scale was used to rate the responses of the respondents with regard to the factors that affect students' motivation for learning and their academic performance. In order to measure academic performance, the respondents were asked to provide their current Term Grade Point Average (TGPA) or Cumulative Grade Point Average (CGPA), and then the points were converted into grades so as to ensure ordinal level of measurement. This is to note that the independent variables involved four categories of factors such as personal factors, family factors, economic factors, and institutional factors. Personal factors involved six items such as students' gender, interests on majors, results of previous semesters, physical and mental health, participation in

the class, participation in co-curricular activities. Family factors contained three items such as family economic condition, family support, and parental guidance. Economic factors involved four items such as students' necessity for getting job, necessity for making money, necessity for economic self-sufficiency, and necessity for helping family financially. Finally, institutional factors involved five items such as departmental learning facilities, teachers' quality, teachers' efforts, student-teacher relationship, and institutional learning environment. The Cronbach's alpha test was used to assess the reliability of the items of the measurement and test results are presented in the following Table:

Table 3. Cronbach's alpha coefficients

No.	Factors	Items	Cronbach's alpha Coefficient
1	Personal factors	6	.776
2	Family factors	3	.815
3	Economic factors	4	.902
4	Institutional factors	5	.898

As shown above in Table 3, the Cronbach's alpha coefficients for the 18 items pertaining to four categories of factors – personal factors, family factors, economic factors, and institutional factors – were .776, .815, .902, and .898 respectively (greater than .70) which indicate that the items of scales in the measurement were reliable (Taber, 2017; Nawi et al., 2020). In order to develop an interviewer-administered questionnaire, the researcher went through several relevant journal articles available in the academia as to the factors affecting students' motivation for learning and academic performance. After developing the questionnaire, it was tested among a group of undergraduate students of the NSTU to make sure its validity. After checking inaccuracies and inconsistencies via pre-test evaluation, the final version of questionnaire was developed through revision and it became ready for survey. Then primary data were collected from the samples via survey conducted by the researchers and their team by using face to face interview. The sample survey was carried out from August 01, 2022 to October 30, 2022 through a rigorous fieldwork. The researchers duly maintained confidentiality and honesty in the course of research work.

2.3   Data Analytical Tools

Primary data gathered from survey, were analyzed by using both descriptive and inferential statistics. Descriptive statistics were used to summarize and describe the sample data while inferential statistics were used to make inferences about population characteristics via testing several hypotheses (Fraenkel & Wallen, 2009; Bordens & Abbott, 2018) As mentioned earlier, the study was aimed at identifying the factors that affect students' academic performance mediated by their motivation for learning. In this study, students' academic performance was considered to be a dependent variable. However, students' motivation for learning was viewed as a mediating or an intervening variable that was used to link the independent variables with the dependent variable. The factors affected the dependent variable via the mediating variable were treated as independent variables.

Therefore, to address the research problem, at first the study sought to find out the nature and significance of association between the chosen factors and students' motivation for learning by using *Gamma* due to ordinal nature of data. However, gender is the only one among the chosen factors which was nominal in nature. As such, in case of finding the nature and significance of association between gender and students' motivation for learning, *Lambda* was used. Finally, to determine the nature and significance of association between the mediating variable (students' motivation for learning) and the dependent variable (students' academic performance) *Gamma* was applied**.** If the factors were observed to be positively associated with the mediating variable, it would be theorized that there is a positive of association between those factors and the dependent variable. In other words, the factors would have effect on the academic performance of the students mediated by their motivation for learning. All sorts of statistical applications were performed by SPSS 20.0.

3.   Findings

Table 4. Students' motivation for learning and academic performance

	Responses	Frequency (f)	Percent (%)
Students' motivation for learning (Strength of motivation)	Slightly	16	7.8
	Moderately	74	35.9
	Very	69	33.5
	Very much	47	22.8
	Total	206	100.0
Students' academic performance (Academic grades)	**Responses**	**Frequency (f)**	**Percent (%)**
	C+	6	2.9
	B-	16	7.8
	B	42	20.4
	B+	64	31.1
	A-	64	31.1
	A	14	6.8
	Total	206	100.0

Table 4 above shows the descriptive statistics of the strength of students' motivation for learning and their academic performance. With regard to students' motivation for learning, a majority of the respondents reported that their motivation for learning is moderately strong (about 36%), followed by very strong (33.5%).   About 23% of the respondents reported that their motivation for learning is very much strong. However, about 8% of the respondents reported that their motivation for learning is slightly strong. As to students' academic performance defined in terms of academic grades, a great majority of the respondents (about 62%) achieved B+ and A-, that is, each grade represents around 31% of the respondents. 20.4% of the respondents achieved grade B. About 8% of the respondents achieved grade B- while about 7% of the respondents achieved grade A. However, only about 3% of the respondents reported that they achieved grade C+.

To find out the effects of personal factors on students' motivation for learning, the study tried to investigate the nature and significance of association between each of those factors and students' motivation for learning via validating some research hypotheses which are presented below in Table 5:

Table 5. Effects of personal factors on students' motivation for learning

No.	Research hypotheses (H$_a$)	Statistical Tool	Value	Nature of Association	Alpha-value	p-value
1	There is an association between students' motivation for leaning and their gender [*]	Lambda	.091	Positive	0.1	.068
2	There is an association between students' motivation for learning and their interests on academic majors[**]	Gamma	.984	Positive	0.01	.000
3	There is an association between students' motivation for learning and their academic results in previous semesters[**]	Gamma	.754	Positive	0.01	.000
4	There is an association between the students' motivation for	Gamma	.470	Positive	0.01	.000

No.	Research hypotheses (Hₐ)	Statistical Tool	Value	Nature of Association	Alpha-value	*p*-value
	learning and their physical and mental health**					
5	There is an association between the students' motivation for learning and their participation in class**	Gamma	.961	Positive	0.01	.000
6	There is an association between the students' motivation for learning and their participation in co-curricular activities **	Gamma	.482	Positive	0.01	.000

Note: * Statistically significant at 90% confidence level; ** Statistically significant at 99% confidence level

As shown in Table 5, all research hypotheses pertaining to the effects of personal factors were validated by the empirical evidences. Each of the personal factors was positively associated with students' motivation for learning while their magnitudes of association varied ranging from very low to very high. As can be seen, the empirical evidence supported that there is a significant association between between students' motivation for leaning and each of the personal factors involving their gender ($\lambda = 0.91$; p-value < 0.1), interests on academic majors ($\gamma = .984$; p< 0.01), results in previous semesters ($\gamma = .754$; p< 0.01), physical and mental health ($\gamma = .470$; p< 0.01), participation in class ($\gamma = .961$; p< 0.01), and participation in co-curricular activities ($\gamma = .482$; p< 0.01). Since each of the personal factors was positively associated with students' motivation for learning with statistical significance, it may be argued that they have positive effects on students' motivation for learning.

To find out the effects of family factors on students' motivation for learning, the study sought to investigate the nature and significance of association between each of those factors and students' motivation for learning via validating some research hypotheses which are depicted below in Table 6:

Table 6. Effects of family factors on students' motivation for learning

No.	Research hypotheses (Hₐ)	Statistical Tool	Value	Nature of Association	Alpha-value	*p*-value
1	There is an association between the students' motivation for learning and their family economic condition *	Gamma	.277	Positive	0.01	.002
2	There is an association between the students' motivation for learning and their family support*	Gamma	.393	Positive	0.01	.000
3	There is an association between the students' motivation for learning their parental guidance*	Gamma	.704	Positive	0.01	.000

Note: * Statistically significant at 99% confidence level

As shown in Table 6, all research hypotheses pertaining to the effects of family factors were validated by the empirical evidences. Each of the family factors was positively associated with students' motivation for learning while their magnitudes of association varied ranging from low to high. As can be seen, the empirical evidence supported that there is a significant association between between students' motivation for leaning and each of the family factors involving their family economic condition ($\gamma = .277$; p< 0.01), family support ($\gamma = .393$; p< 0.01), and parental guidance ($\gamma = .704$; p< 0.01). Since each of the family factors was positively associated with students' motivation for learning with statistical significance, it may be claimed that they have positive effects on students' motivation for learning.

To find out the effects of economic factors on students' motivation for learning, the study tried to investigate the nature and significance of association between each of those factors and students' motivation for learning via establishing some research hypotheses which are presented below in Table 7:

Table 7. Effects of economic factors on students' motivation for learning

No.	Research hypotheses (Hₐ)	Statistical Tool	Value	Nature of Association	Alpha-value	p-value
1	There is an association between students' motivation for leaning and their necessity for getting job*	Gamma	.383	Positive	0.01	.000
2	There is an association between students' motivation for leaning and their necessity of making money*	Gamma	.485	Positive	0.01	.000
3	There is an association between students' motivation for leaning and their necessity for economic self-sufficiency*	Gamma	.436	Positive	0.01	.000
4	There is an association between students' motivation for leaning and their necessity for helping family financially*	Gamma	.239	Positive	0.01	.000

Note: *Statistically significant at 99% confidence level

As illustrated in Table 7, all research hypotheses with regard to the effects of economic factors were validated by the empirical evidences. Each of the economic factors was positively associated with students' motivation for learning while their magnitudes of association varied ranging from low to moderate. As shown in Table, the empirical evidence supported that there is a significant association between the students' motivation for learning and each of the economic factors involving their necessity for getting job (γ = .383; p< 0.01), necessity for making money (γ = .485; p< 0.01), necessity for economic self-sufficiency (γ = .436; p< 0.01), and necessity for helping family financially (γ = .239; p< 0.01). Since each of the economic factors was observed to be positively associated with students' motivation for learning with statistical significance, it may be argued that they have positive effects on students' motivation for learning.

To find out the effects of institutional factors on students' motivation for learning, the study sought to investigate the nature and significance of association between each of those factors and students' motivation for learning via validating some research hypotheses which are described below in Table 8:

Table 8. Effects of institutional factors on students' motivation for learning

No.	Research hypotheses (Hₐ)	Statistical Tool	Value	Nature of Association	Alpha-value	p-value
1	There is an association between students' motivation for leaning and their departmental learning facilities *	Gamma	.551	Positive	0.01	.000
2	There is an association between students' motivation for leaning and their teachers' quality*	Gamma	.400	Positive	0.01	.000
3	There is an association between students' motivation for leaning and their teachers' efforts *	Gamma	.449	Positive	0.01	.000

No.	Research hypotheses (H$_a$)	Statistical Tool	Value	Nature of Association	Alpha-value	*p*-value
4	There is an association between students' motivation for leaning and student-teacher relationship [*]	Gamma	.417	Positive	0.01	.000
5	There is an association between students' motivation for leaning and institutional learning environment[*]	Gamma	.553	Positive	0.01	.000

Note: [*]Statistically significant at 99% confidence level

As depicted in Table 8, all research hypotheses with regard to institutional factors were validated by the empirical evidences. Each of the institutional factors was positively associated with students' motivation for learning while their magnitudes of association were observed to be moderate. As can be seen, the empirical evidence supported that there is a significant association between the students' motivation for learning and each of the institutional factors such as their departmental learning facilities ($\gamma = .551$; p< 0.01), teachers' quality ($\gamma = .400$; p< 0.01), teachers' efforts ($\gamma = .449$; p< 0.01), student-teacher relationship ($\gamma = .417$; p< 0.01), and institutional learning environment ($\gamma = .553$; p< 0.01). Since the aforesaid institutional factors were positively associated with students' motivation for learning with statistical significance, it may be claimed that they have positive effects on students' motivational for learning.

To find out the effect of students' motivation for learning on their academic performance, the study sought to investigate the nature and significance of association between students' motivation for learning and their academic performance via validating a research hypothesis which is stated below in Table 9:

Table 9. Effect students' motivation for learning on academic performance

Research hypotheses (H$_a$)	Statistical Tool	Value	Nature of Association	Alpha-value	*p*-value
There is an association between students' motivation for leaning and their academic performance[*]	Gamma	.942	Positive	0.01	.000

Note: [*]Statistically significant at 99% confidence level

As depicted above in Table 9, the empirical evidence supported the research hypothesis (p< 0.01) at 99% confidence level. As can be seen, students' motivation for learning has a very strong a positive association with their academic performance ($\gamma = .942$). Since students' motivation for learning was observed to be positively associated with their academic performance with statistical significance, it may be argued that students' motivation for learning has a positive effect on their academic performance.

4. Discussion

The findings from the study put forward that the students' motivation for learning has a very strong positive effect on their academic performance. This finding of the study is supported by the findings presented by several studies available in the academia (Amin & Sharmin, 2016; Goodman et al., 2011; Ariani, 2016; Al-oqleh & Teh, 2019; Mehendroo & Vandana, 2020; Rahman et al., 2021). The study indicated that various personal factors, family factors, economic factors, and institutional factors positively affect students' motivation for learning and thereby affect their academic performance. Put differently, students' motivation for learning has a mediating role since motivation directs and guides students' learning behaviour, and is fundamental to all human actions. As such, the study claimed that each of the personal factors, family factors, economic factors, and institutional factors affects students' academic performance mediated by their motivation for learning. The study indicated that sex or gender positively affects students' academic performance. This finding is

supported by the studies (Parajuli & Thapa, 2017; Asif et al., 2020; Khan & Golder, 2020; Kisigot et al., 2021). Hence, the study negates the finding that gender does not have any positive effect on students' academic performance indicated by some studies (Olufemioladebinu et al., 2018; Salan, 2018).

The study suggested that students' interests on academic majors positively affect their academic performance. This finding is supported by the findings presented by several studies (Jony, 2021; Alam & Islam, 2022; Husaini & Shukor, 2022; Mappadang et al., 2022). The study demonstrated that students' academic results in previous semesters positively affect their academic performance. This finding is supported by the findings presented by the studies (Rahman et al., 2021; Husaini & Shukor, 2022). The study revealed that students' physical and mental health positively affects their academic performance. In other words, sound physical and mental health boosts up students' motivation for learning and thereby affects their academic performance. This finding is in line with the findings presented by several studies (Omran & Saleh 2019; Duncan et al., 2021; Zada et al., 2021; Redondo-Flórez et al., 2022). The study claimed that students' participation in class and participation in co-curricular activities positively affect their academic performance. These findings are compatible with the findings indicated by the several studies (Jony, 2021; Rahman et al., 2021; Mappadang et al, 2022). Hence, the study is not agreement with the finding that co-curricular activities have no positive effect on students' academic performance indicated by Khan and Golder (2020).

The study suggested that students' family economic condition positively affect their academic performance. This finding is similar with the findings of several studies that family income and socioeconomic status positively affects students' academic performance (Olufemioladebinu et al., 2018; Atchia & Chinapah, 2019; Asif et al., 2020, Rahman et al., 2021; Tahir et al., 2021; Alam & Islam, 2022). Hence, the study negates the finding that family economic condition or socioeconomic status has no effect on students' academic performance presented by Salan (2018). The study asserted that family support and parental guidance have positive effect on the academic performance of the students. These findings of the study are in line with the findings of several studies (Mushtaq & Khan, 2012; Shanzad et al., 2015; Akter & Biswas, 2018; Eremie & Dimpkpa, 2020; Tahir et al., 2021). Hence, the study claimed that family support and parental guidance motivate the students for learning which contribute to their better academic achievements (Shanzad et al., 2015; Akter & Biswas, 2018; Eremie & Dimpkpa, 2020; Moneva, Pestano, & Vertulfo, 2020; Tahir et al., 2021).

The study proposed that the economic factors such as students' necessity for getting job, necessity for making money, necessity for economic self-sufficiency, and necessity for helping family financially affect their academic performance. These findings are similar to the findings presented by some studies (Maric & Sakac, 2014; Mehndroo & Vandana, 2020; Tahir et al., 2021). The study indicated that departmental learning facilities and institutional learning environment positively affect students' academic performance. These findings are similar to the findings of several studies (Mushtaq & Khan, 2012; Gajghat et al., 2017; Olufemioladebinu et al., 2018; Olugbenga, 2019; Alani & Howas, 2021; Melaiye et al., 2021). In this regard, the study confirmed that institutional academic facilities and favourable learning environment are associated with students' motivation for learning that positively affect their academic performance (Amin & Sharmin, 2016; Islam & Tasnim, 2021; Melaiye et al., 2021; Rehman et al., 2021). The study put forward that teachers' quality and teacher efforts positively affect students' academic performance. These findings are supported by the findings of some studies (Olufemioladebinu et al., 2018; Mohammed & Junmare, 2020; Alani & Howas, 2021). Finally, the study claimed that student-teacher relationship affects students' academic performance. This finding is in line with the findings presented by some studies (Khan & Golder, 2020; Paschal & Mkulu, 2020).

5.   Conclusion

The study revealed that each of the personal factors involving their gender, interests on academic majors, academic results in previous semester, physical and mental health, participation in class, and participation in co-curricular activities, is positively associated with students' motivation for learning. All of these associations are statistically significant. Hence, the study put forward that each of the personal factors has a positive effect on students' academic performance mediated by their motivation for learning. The study showed that each of the family factors involving students' family economic condition, family support, and parental guidance is positively associated with students' motivation for learning. All of these associations are statistically significant. Hence, the study claimed

that each of the family factors has a positive effect on students' academic performance mediated by their motivation for learning. The study demonstrated that each of the economic factors involving necessity for getting job, necessity for making money, necessity for economic self-sufficiency, and necessity for helping family financially is positively associated with students' motivation for learning. All of these associations are statistically significant. Hence, the study put forward that each of the economic factors has a positive effect on the students' academic performance mediated by their motivation for learning. The study showed that each of the institutional factors involving departmental learning facilities, teachers' quality, student-teacher relationship, and institutional learning environment is positively associated with students' motivation for learning. All of these associations are statistically significant. Hence, the study opined that each of those institutional factors has a positive effect on students' academic performance mediated by their motivation for learning.

Thus, the study indicated that both internal and external forces of motivation affect students' academic performance. Internal forces or intrinsic factors of motivation such as students' physical and mental health, family support, parental guidance, necessity for helping family financially, and departmental learning facilities affect students' academic performance. On the other hand, external forces or extrinsic factors of motivations such as the necessity for getting job, the necessity for making money, and necessity for economic self-sufficiency affect students' academic performance. Hence, the study asserted that social and psychological motives are primarily associated with students' academic performance. As such, the study put forward three important policy issues: first, students should regularly participate in classes and co-curricular activities and keep good physical and mental health; their families should play an active role in providing proper support and guidance to them; and educational institutions should provide adequate learning facilities, maintain better student-teacher relationship, ascertain teachers' efforts and qualities, and ensure proper learning environment in order to motivate students that can lead to their better academic results.

6.   Acknowledgements

7.   References

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