



Motivation and Academic Performance of University Students During the COVID-19 Pandemic

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ABSTRACT

Youth are considered the backbone and future of every nation, but there is concern that the COVID-19 pandemic affected university students' motivation negatively, resulting in low educational attainment. The present study examined the relationship between academic motivation and academic performance among university students during COVID-19. A cross-sectional research design was utilized and data was collected from college and university students (115 females and 37 males) who were sampled using the non-probability convenient sampling technique. Results of the study revealed that academic motivation is positively related to educational performance and that intrinsic motivation is the stronger predictor of academic achievement compared to extrinsic motivation. Significant gender differences were found indicating that females are more motivated and secure more grades than males. Findings from this study can advise better policies for students who may be suffering from health burdens and using online learning options. We recommend improved teacher training for online platforms and providing students with better resources for remote learning.

Keywords: Academic Motivation, Academic Performance, GPA

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INTRODUCTION

According to the report of the Higher Education Commission of Pakistan (Higher Education Commission, 2020), over 3 million students in Pakistan, are seeking higher education in both public and private sector colleges and universities. In addition, over 2.5 lac people are enrolled in vocational training institutes as reported by the Technical Education and Vocational Training Authority (TEVTA) (Haq, 2015). Not only in Pakistan, but worldwide parents, teachers, and students are concerned about performance and achievement in academics. Students are considered the backbone and future of every nation, but the COVID-19 pandemic affected students' motivation to such an extent that their educational attainment was impacted negatively (Marler et al., 2021). Students were restricted to their homes, having to take online classes, for almost one and a half years during the COVID-19 pandemic. Sitting idle and doing no physical activities affected the motivation of the students and in turn, affected their educational progress. The main objective of the study included examining the effect of motivation (intrinsic and extrinsic) on students' academic performance during COVID-19.

Martinez (2007) defined academic performance as the output or result given by the students, and it is conveyed or measured through the grades achieved by the students. It refers to the measure of how much students can express their analytic and responsive abilities based on their education and training (Narad & Abdullah, 2016). The objective of academic output is to accomplish educational goals through learning. Academic accomplishment as a complex unit has numerous elements which include learning processes that help individuals to learn about novel ideas and enhance their cognitive abilities. Performance depends on many factors, and it varies from person to person depending on the surrounding conditions. Many factors contribute to academic performance. These include the intelligence of an individual, personality traits such as

extroversion, conscientiousness, motivation (intrinsic or extrinsic), skills and abilities, area of interest, study routine, self-confidence and self-esteem, and the relationship of the student with the teacher (Abaidoo, 2018). Other factors include family and teachers' expectations about the performances of students, school and class environment, and socioeconomic status (Lamas, 2015; Kumar et al., 2021).

Every action performed by an individual has a reason or aim behind it. The consequences of any action, either positive or negative, act as a motivation for an individual. Motivation can be defined as any genetic, psychological, social, or intellectual force that initiates actions or behavior. Reeve (2016) defined motivation as an internal process that develops an urge in individuals to make a change, either in themselves or in the environment. It guides an individual towards a goal-directed behavior. Motivation is classified into many types of which few are discussed here. Intrinsic means internal or belonging to the individual. In this type of motivation, an individual performs an action for their own satisfaction and to seek pleasure (Deci & Ryan, 1985). The other type is Extrinsic motivation which refers to motivation based on external rewards and profits. It is the motivation with which an individual performs a particular task or behavior to get a reward or some external benefit such as money, promotion, or better grades. Extrinsic motivation is a type of operant conditioning in which rewards and avoidance of punishment motivate an individual to perform a certain task (Hennessey, 2015).

According to Deci and Ryan (1985), there are numerous subtypes of extrinsic motivation.

1. *External Regulation*: In this type of extrinsic motivation, an individual performs for the sake of tangible reward or to meet external requirements.
2. *Introjected Regulation*: In this type of extrinsic motivation, individuals perform a behavior for abstract or intangible rewards such as to avoid guilt or anxiety, for fame or praise, or to boost self-esteem.
3. *Regulation Identified*: In this

type of extrinsic motivation, an individual starts providing personal significance or value to the behavior and looking for its benefit. For example, students learn English and Urdu alphabets so that it will further help them to understand complex words. 4: *Integrated Regulation*. This type of extrinsic motivation is the most autonomous out of the above-mentioned types. In this type, individuals completely incorporate the task with their values and needs and internalize that task. This type is somewhat related to intrinsic motivation but differs because the motivation behind the assimilation of tasks is some materialistic reward or has an instrumental objective.

Demotivation or Amotivation means without motivation or lack of motivation. In 2000, Deci and Ryan added this term to the definition of motivation. A demotivated individual is one who thinks that he is not capable of doing a particular task or behavior or is incompetent. For example, a demotivated overweight female would quit dieting because she feels that she is not competent enough to lose her weight or she would think that her weight cannot be reduced. Demotivation is referred to as a lack of interest in accomplishing a particular task. There might be many reasons behind demotivation or Amotivation such as fear, lack of self-confidence, low self-esteem, fatigue, or overthinking. A demotivated individual does not feel that they are competent or autonomous enough to do a particular task, and it reduces their creativity and productivity towards work.

Maslow's theory of the hierarchy of needs is a theory of motivation that is based on the five-tier model of needs of individuals. It was proposed by Abraham Maslow in 1943. He posited that humans will be motivated if their needs are satisfied. He ranked the needs of individuals starting from the lowest level to the highest level. He proposed that the needs are fulfilled starting from the lowest level of needs. When the lowest level of needs is fulfilled, then the individuals are motivated to fulfill their higher level of needs. The needs that come first

according to Maslow's theory are physiological needs. These needs are at the base of Maslow's pyramid of needs. These needs are the first met needs and the individuals cannot pursue to fulfill the above higher needs if physiological needs are not met. These needs include air, water, food, sex, sleep, and health.

Safety needs come after physiological needs. These needs include personal security, emotional and financial security, well-being, and a safe environment. On the third level of Maslow's hierarchy of needs, there comes social needs. It involves the need for a sense of relatedness and to be socially accepted. Maslow categorized esteem needs into two levels: The first level is lower than the other and includes the need for respect and praise from others. The other level is the higher level of esteem needs which includes the need for self-confidence and strength. Self-actualization is the highest level of Maslow's hierarchy of needs. Once all the lower needs of individuals are met, they are motivated to fulfill self-actualization needs. These needs include the desire to explore oneself and to give one's full potential to accomplish everything one can.

LITERATURE REVIEW

A Plethora of research has been conducted to study the relationship between intrinsic motivation, extrinsic motivation, and academic performance of students. During COVID-19 and other pandemics or health crises before COVID-19, such as the Ebola virus, HIV, and bird flu, the academic motivation and performance of the students were affected (Jamison, 2018). A positive correlation between intrinsic motivation and academic performance and a negative correlation between extrinsic motivation and academic performance has been highlighted previously (Lemos & Verissimo, 2014). Research also indicates a significant positive correlation between

motivation (extrinsic and intrinsic), self-efficacy, and educational performance of students (Chowdhury & Shahabuddin, 2007). It is highlighted that students with higher academic performance are those who have high intrinsic motivation and low extrinsic motivation (Radi, 2013).

Goodman and colleagues (2011) indicated a significant relationship between intrinsic motivation, extrinsic motivation, and academic achievement while effort partially mediated their relationship. Results also indicated that intrinsic motivation was a strong predictor of academic performance. Liu and colleagues (2019) indicated that for Chinese students, intrinsic motivation is positively correlated with educational achievement, and if an individual is not intrinsically motivated, then extrinsic motivation can help predict academic performance. Concerning the effect of gender, research shows that females are more motivated than male students (Gupta & Milli, 2016) Furthermore, Almalki (2019) concluded that motivation and academic output of students are positively linked with each other. Findings of this study indicated that male students perform better than females and they are highly motivated in contrast with female students. In middle socioeconomic class families' students are highly motivated and perform better compared to upper or lower-class family students. Also living with the family positively affects the motivation and performance of the students (Adamma et al., 2018).

Many other researchers conducted studies to examine the relationship between academic motivation and performance and factors affecting academic performance. Feyter and colleagues (2012) have argued that there are differences in gender with respect to academic motivation and educational attainment. In Pakistan, researchers have found significant positive associations between intrinsic motivation, extrinsic motivation, and academic performance of students based on gender differences (Abid et al., 2021; Chaudhry & Shabbir, 2019; Haider et al., 2015)

In conclusion, the extensive body of research underscores the intricate relationship between both types of motivation, and academic performance across diverse contexts and populations. The recurring theme is the strong positive correlation between intrinsic motivation, extrinsic motivation, and academic success. The nuances introduced by factors such as gender, socioeconomic status, and living arrangements further influence this relationship. While males and females exhibit different patterns of motivation and performance, and socioeconomic factors play a crucial role, the universal finding is that motivation—whether intrinsic or extrinsic—significantly impacts academic outcomes. As educators and policymakers navigate the post-pandemic educational landscape, these insights are invaluable for developing strategies that foster intrinsic motivation and thus enhance academic achievement.

The rationale of the Study

During COVID-19, the motivation of students was affected and so was their academic performance level (Tan, 2020). The literature review concluded that many studies focused on the association between academic motivation with academic performance (Wu et al, 2020), but these researches were undertaken before COVID-19. Some studies only focused on one type of motivation either intrinsic or extrinsic (Tariq et al., 2011). There is a gap in the research regarding motivation and educational attainment in graduate-level students during COVID-19. This research would help fill this gap. The primary objectives of this study were to investigate the correlation between motivation (both intrinsic and extrinsic), Amotivation, and the academic performance of university students amid the COVID-19 pandemic. It also sought to explore the relationship between academic motivation and academic performance, determining whether females outperform males academically and exhibit higher levels of academic motivation. Additionally, it aimed to assess whether demographic factors such as age, socioeconomic status,

personality traits, maternal education, teacher support levels, and satisfaction with online classes influence academic motivation and subsequently predict academic performance. Furthermore, the study aimed to determine whether intrinsic motivation is a stronger predictor of academic performance than extrinsic motivation and whether the COVID-19 pandemic has impacted students' motivation and academic performance.

The hypotheses for this study are:

H1. There is a positive correlation between academic motivation and the academic performance of university students during COVID-19.

H2: Students with higher intrinsic motivation perform better academically than those having extrinsic motivation.

H3: COVID-19 affected students' performance because of the shifting of academic mode from physical to online.

H4: There are gender differences in academic motivation and academic performance in university students during COVID-19.

H5: Demographic variables predict academic motivation and academic performance of students.

METHODOLOGY

Research Design

A correlational research design was used to examine the association between academic motivation and academic performance in university students during COVID-19.

Ethics

The ethical considerations kept in mind and maintained before, during, and after completion of the research included obtaining permission from the respective authors of the standardized scales

and the ethical approval for the study from the institute. Consent was acquired from the respondents after debriefing about the nature of the study. The participants were assured they had the right to stop participating in the research at any time. Privacy and confidentiality of data were maintained during and after the collection of the data.

Sample

The study included one hundred and fifty-two university students using a non-probability convenient sampling technique. Students who were enrolled in the university at any academic level and had taken online classes for more than six months were included. The age range of the sample was 18-25 years ($M=21.88$, $SD=2.26$). Out of the sample size of 152 respondents, 75.7% were women and 34.3% were men. Most of the students were from public universities. The majority of the respondents (60%) were from different departments of the University of the Punjab, Lahore, and the remaining were from Lahore College for Women University, KIPS College, and Quaid-e-Azam University, Islamabad. Some of the sample sizes were from Private universities including the University of Management and Technology, Lahore.

Measures

Two research instruments were used along with a personal information sheet to collect data from the participants.

Demographic Information Sheet

The demographic information sheet consisted of information regarding age, gender, academic level, relationship status, professional status, family system, family income, area of living, number of friends, parent's educational level and occupation, birth order, time spent in online classes, and study hours. In addition, questions were asked about satisfaction with online classes, teacher's cooperation level, personality type, and GPA before and after COVID-19.

Academic Motivation Scale

The English version of the Academic Motivation Scale developed by Vallerand and colleagues (1992) was used to assess the students' intrinsic and extrinsic motivation towards attending college or university. It is a 28-item scale. The respondents rate responses on a 7-point Likert scale ranging from *does not correspond at all* at 1 to *corresponds exactly* at 7. This scale is comprised of seven subscales i.e., (1) intrinsic motivation - to know, (2) intrinsic motivation - toward accomplishment, (3) intrinsic motivation - to experience stimulation, (4) extrinsic motivation – identified, (5) extrinsic motivation – introjected, (6) extrinsic motivation - external regulation, and (7) Amotivation. Each of these subscales consists of four items. No item on this scale needed to be reverse coded, and the scale was highly reliable with a Cronbach's alpha value of .87.

Academic Performance Questionnaire

In this study, academic performance was measured in two ways; through Grade Point Average (GPA) and by using an academic performance questionnaire. It was a self-constructed questionnaire developed based on academic performance about class participation, efficiency in assignments, motivation towards study, and preparation for exams and consisted of nine items. Four of the items of this questionnaire were reverse coded i.e., item 1, 7, 8, 9. A 5-point Likert scale was used (strongly disagree (1) to strongly agree (5)). The reliability coefficient of the questionnaire items in the present study was .693.

Data Collection

Data collection took almost 2 months to complete. It proceeded from May 2021 to July 2021. Due to Coronavirus, protective measures were taken to maintain social distancing, so the questionnaires were made on Google survey form and the link generated was uploaded on many

online platforms. After their consent, questionnaires were administered by providing essential instructions. All the responses collected were imported to SPSS for analysis.

Data Analysis

The data were exported to SPSS and correlation, regression, t-test, and ANOVA analyses were done to test the hypotheses. Correlational analysis was done to identify the relationship between the study variables. For predicting variables, linear regression was used. In the current study, academic motivation is the independent variable and academic performance is the dependent variable.

RESULTS

Descriptive and reliability analyses of the study variables i.e. academic motivation and its subscales, and academic performance were conducted. Table 1 shows the summary of the descriptive statistics of the study variables, and Cronbach alpha reliability of scales and subscales. The internal consistency of the scales and subscales was satisfactory. The internal consistency of the academic motivation scale and subscales was high whereas the internal consistency of the academic performance questionnaire was fair.

Table 1
Descriptive characteristics of the scale variables (N=152)

Variables	Items	M	SD	α
Academic Motivation	28	132.97	18.07	.87
Intrinsic motivation (IM) - to know subscale	4	20.13	3.70	.81
IM - toward accomplishment subscale	4	19.22	4.10	.78
IM - to experience stimulation subscale	4	18.38	4.23	.79
Extrinsic motivation (EM) – identified subscale	4	20.70	3.34	.73
EM – introjected subscale	4	20.03	3.64	.74
EM - external regulation subscale	4	20.70	3.80	.67
Amotivation subscale	4	13.84	6.55	.87
Academic Performance	9	22.95	5.27	.72
Before COVID-19 GPA	1	3.32	0.40	.86
After COVID-19 GPA	1	3.30	0.51	.86

Note. k=no. Of items, M=mean, SD= standard deviation, α = Cronbach's alpha

Pearson product-moment correlation was run to examine the relationship between academic motivation, its subscales, and academic performance (Table 2). Findings showed a significant positive correlation between academic motivation and academic performance ($r = .20, p < .05$). Results also showed a significant positive correlation between intrinsic motivation and academic performance of the participants ($r = .34, p < .001$). There was no significant correlation found between extrinsic motivation and academic performance ($r = .10, p > .05$), and motivation and academic performance ($r = -.15, p > .05$).

Table 2

Showing correlations between academic motivation, its subscales, and academic performance

Variables	M	SD	1	2	3	4	5
1. Academic Motivation	132.97	18.07	-	.87***	.78***	.25**	.20*
2. Intrinsic Motivation	57.72	10.83		-	.59***	-.05	.34***
3. Extrinsic Motivation	61.42	8.94			-	-.18*	.10
4. Amotivation	13.84	6.55				-	-.15
5. Academic Performance	22.95	5.27					-

*Note. M= mean; SD= standard deviation; * = $p < .05$; ** = $p < .01$, *** = $p < .001$*

A multiple linear regression analysis was run to find whether academic motivation and its subscales predict academic performance (Table 3). The enter method was used to run the regression analysis. Assumptions were fulfilled. Results indicated that the overall model was significant with $F(7,144) = 4.49, p < .001$. Examination of beta values indicated that academic motivation predicted academic performance. The R^2 value of .18 revealed that the model explained an 18% variance in academic performance. The comparison of standardized beta values concluded that the following are predictors of academic performance: (i) intrinsic motivation – towards accomplishment ($\beta = .32, p < .05$), (ii) extrinsic motivation – identified ($\beta = -.23, p < .05$), and (iii) Amotivation ($\beta = -.19, p < .05$).

Table 3*Multiple Linear Regression Analysis for Academic Motivation and Academic Performance (N=152)*

Variables	B	SE	β	CI	
				LL	UL
Constant	20.62	3.26		14.17	27.07
Intrinsic motivation – to know	.10	.21	.07	-.30	.51
Intrinsic motivation – to accomplishment	.41	.16	.32*	.10	.73
Intrinsic motivation – to experience stimulation	.22	.17	.18	-.11	.55
Extrinsic motivation – identified	-.37	.17	-.23*	-.70	-.04
Extrinsic motivation – introjected	-.20	.16	-.14	-.52	.13
Extrinsic motivation – external regulation	.09	.14	.07	-.19	.38
Amotivation	-.15	.07	-.19*	-.28	-.02
R ²	.18				
F	4.49***				

Note. B= Unstandardized beta; β = standardized beta; SE= standard error; CI= confidence interval; UL= Upper limit; LL= Lower limit; * = $p < .05$; ** = $p < .01$, *** = $p < .001$

A multiple linear regression analysis was run to identify if academic motivation and its subscales predict GPA (Table 4). The enter method was used to run the regression analysis. Assumptions were fulfilled. Results indicated that the overall model was significant with $F(7,144) = 5.41, p < .001$. Examination of beta values indicated that academic motivation predicted GPA. The R² value of .21 revealed that the model explained a 21% variance in GPA. A comparison of standardized beta values concluded that extrinsic motivation – introjected ($\beta = -.29, p < .05$) is the strongest predictor of GPA followed by extrinsic motivation – external regulation ($\beta = .28, p < .05$).

Table 4*Multiple Linear Regression analysis predicting academic performance.*

Variables	B	SE	β	CI	
				LL	UL
Constant	2.14	.31		1.53	2.76
Intrinsic motivation – to know	.02	.02	.12	-.02	.05
Intrinsic motivation – to accomplishment	.03	.02	.21	-.004	.06
Intrinsic motivation – to experience stimulation	.02	.02	.18	-.01	.05
Extrinsic motivation – identified	-.001	.02	-.008	-.03	.03
Extrinsic motivation – introjected	-.04	.02	-.29*	-.07	-.01
Extrinsic motivation – external regulation	.04	.01	.28*	.01	.07
Amotivation	-.001	.006	-.02	-.01	.01
R ²	.21				
F	5.41***				

*Note. B= Unstandardized beta; β = standardized beta; SE= standard error; CI= confidence interval; UL= Upper limit; LL= Lower limit; * = $p < .05$; ** = $p < .01$, *** = $p < .001$*

Independent sample t-tests were run to identify the gender differences in academic motivation (both intrinsic and extrinsic) and academic performance (Table 5). Findings indicated a significant gender difference in academic motivation, and academic performance (GPA). By comparing means, findings showed that women (M=136.19, SD= 16.66) were more motivated academically than men (M=122.97, SD= 18.84). Findings also indicated that intrinsic motivation is greater in females (M=59.90, SD=9.02) than males (M=50.92, SD= 13.09). Extrinsic motivation was also greater in females (M=62.68, SD= 8.08) than in males (M=57.51, SD= 10.38). However, no significant gender difference was found in Amotivation and academic performance. Results indicated significant gender difference in GPA indicating that women (M=3.38, SD= .48) score greater than the men (M=3.04, SD= .52).

Table 5

Independent Samples t-test comparing gender differences in the level of academic motivation (both intrinsic and extrinsic) and academic performance (N=152)

Variable	Men (n=37)		Women (n=115)		t (df)	P	Cohen D
	M	SD	M	SD			
Academic Motivation	122.97	18.84	136.19	16.66	4.06 (150)	.00	0.74
Intrinsic motivation	50.92	13.09	59.90	9.02	4.69 (150)	.00	0.80
Extrinsic motivation	57.51	10.38	62.68	8.08	3.15 (150)	.002	0.56
Amotivation	14.54	7.03	13.61	6.40	-0.75 (150)	.45	0.14
Academic performance (questionnaire)	22.59	7.26	23.06	4.49	0.37 (45.19)	.71	0.08
GPA	3.04	0.52	3.38	0.48	3.68 (150)	.00	0.68

*Note. M= Mean; SD= Standard Deviation; * = $p < .05$; ** = $p < .01$; *** = $p < .001$*

One-way ANOVA was run to find out the mean differences in the participants' GPA and academic performance based on their mother's education (Table 6). Findings showed that there was a significant mean difference in the mother's education in the participants' GPA, whereas no significant mean differences were found in academic performance. Respondents whose mothers

had 13-14 years of education (M= 3.59, SD= 0.67) achieved higher GPAs compared to those whose mothers had no education (M= 3.04, SD= 0.67), or had education for 1-5 years (M= 3.30, SD= 0.66), 6-8 years (M= 3.21, SD= 0.61), 9-10 years (M= 3.30, SD= 0.33), 11-12 years (M= 3.42, SD= 3.36), 15-16 years (M= 3.21, SD= 0.56), and more than 16 years (M= 3.04, SD= 0.53).

Table 6
Showing one-way analysis of variance in GPA and academic performance

Measure	Mother's Education (in years)								F(7,144)	η ²
	No education	1-5	6-8	9-10	11-12	13-14	15-16	>16		
	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)	M(SD)		
GPA	3.04 (0.67)	3.30 (0.66)	3.21 (0.61)	3.30 (0.33)	3.42 (0.36)	3.59 (0.67)	3.21 (0.56)	3.04 (0.53)	3.20**	0.13
Academic Performance	22.38 (4.53)	23.43 (5.29)	23.25 (7.92)	22.71 (4.70)	23.19 (4.94)	22.62 (4.83)	24.00 (5.35)	21.67 (5.25)	.33	.02

Note. ** = $p < .01$; η^2 = partial eta-square

DISCUSSION

The present research aimed to find the association between academic motivation and academic performance in university students at the time of the COVID-19 pandemic. The first hypothesis of this research was that academic motivation predicts the academic performance of university students during COVID-19. The results concluded a significant association between academic motivation and academic performance. Regression analysis also indicated that academic motivation is a significant predictor of academic performance in young adults. The results confirmed the hypothesis and concluded that those individuals who are more motivated perform better academically (Haider et al., 2015). Those individuals who are highly motivated perform efficiently in their assignments, quizzes, exams and listen to the lectures and discussions attentively and actively participate in the discussions (Ornstein, 1995).

The second hypothesis was that intrinsic motivation is more likely to predict the academic performance of young adults than extrinsic motivation. The findings concluded a significant association between intrinsic motivation with academic performance and a non-significant association between extrinsic motivation with academic performance. In reference to GPA, both intrinsic and extrinsic motivation except introjected extrinsic motivation are associated with GPA. However, regression analysis indicated that intrinsic motivation is a stronger predictor of academic motivation than extrinsic motivation. The results confirmed the hypothesis and concluded that the individuals who are more motivated intrinsically perform better in academics than those who are extrinsically motivated. Individuals who are internally satisfied and find pleasure in studies and academic work, perform better academically (Afzal et al., 2010).

The third hypothesis was that COVID-19 affected students' motivation and academic performance. The results indicated that students' motivation mean score was much lower than the maximum potential range. This showed that during COVID-19 their motivation was affected negatively. On the other hand, the GPA of the students was not much affected as there were no such differences in the mean scores before and after the COVID GPA, but students' routine, efficiency in assignments, and class participation were much reduced. The results validated the hypothesis that due to COVID-19, and the shift from on-campus to online learning affected students' motivation to a great extent and this reduced their efficiency and concentration in their studies and performances (Usher et al., 2021). The results of the present research reported that the GPA of the students was not much affected during COVID-19. Before and after COVID-19 exams, the GPAs of the students did not vary significantly (Rossman & Alamuddin, 2020). This might be because the online material was available to the students, and they could also contact

their friends during exams. At hand, the availability of study materials boosted the students to get help from the study material during exams whenever they needed it (Appiah, 2020).

The fourth hypothesis was that there are gender differences in academic motivation and academic performance. The findings of the t-test indicated that there are significant gender differences in academic motivation (either intrinsic or extrinsic) and academic performance and showed that females are more intrinsically and extrinsically motivated than females. The results verified the hypothesis and concluded that women score higher grades in academics and have higher motivation both intrinsic and extrinsic than men (Adamma et al., 2018).

The fifth hypothesis was that demographic variables predict the academic motivation and academic performance of students. The study examined various factors influencing academic performance. Findings aligned with previous research, indicating that higher maternal education correlates with increased academic motivation and better grades (Awan & Kauser, 2015; Shoukat et al., 2015). Similarly, family income positively affects academic motivation and performance (Akram & Ghani, 2013). Living in a nuclear family was associated with higher grades compared to joint families (Everding, 2005). Age was positively correlated with academic motivation and performance, with senior students showing greater motivation and performance (Ogundokun & Adeyemo, 2010; Sheard, 2010).

The study also explored the impact of online learning experiences due to the pandemic. It found that positive online learning experiences were linked to better academic performance, while negative experiences had adverse effects (Bir, 2019). Teacher cooperation significantly influenced academic performance, with cooperative teachers correlating with better student performance (Hardré et al., 2007; Kokkonen et al., 2011). Additionally, academic status was

found to affect performance, with postgraduate students outperforming undergraduates and intermediate students (Mahdy, 2020).

Limitations

There were several limitations of the current study. Because of the online data collection, there might be the chances of social desirability in the responses recorded by the participants.

Longitudinal research could have been conducted to examine the changes in the same participants and how COVID-19 affected their motivation level and academic performance.

CONCLUSION

In conclusion, the present research has shed light on the crucial relationship between academic motivation and performance among university students, particularly amidst the challenging circumstances imposed by the COVID-19 pandemic. The findings underscored the significance of academic motivation as a predictor of performance, with intrinsic motivation emerging as a stronger driver compared to extrinsic motivation. Moreover, the study elucidated the detrimental impact of the pandemic on students' motivation levels, highlighting a noticeable decrease in motivation alongside reduced efficiency and class participation. Gender differences in motivation and academic performance were also evident, with females exhibiting higher levels of both. Furthermore, demographic variables such as maternal education, family income, family structure, and age were found to influence academic motivation and performance. Importantly, the study emphasized the role of online learning experiences during the pandemic, indicating their pivotal influence on academic performance. Overall, these findings underscore the multifaceted dynamics at play in the academic realm and provide valuable insights for educators, policymakers, and stakeholders aiming to support student success in times of adversity.

The study reaffirms the critical role of academic motivation in predicting academic performance, even amidst the challenges posed by the COVID-19 pandemic. Educators and institutions should prioritize strategies to enhance students' motivation, as it significantly impacts their performance. By understanding the challenges that reduce motivation, policymakers and educators can identify areas needing improvement, like teacher training for online platforms and providing students with better resources for remote learning. The findings underscore the superiority of intrinsic motivation over extrinsic motivation in predicting academic performance. This suggests that fostering a genuine interest and enjoyment in learning may yield better outcomes compared to external rewards or pressures. The study also highlighted the adverse effects of the pandemic on students' motivation and academic performance.

With the shift to online learning and disruptions to routine, students' motivation levels declined, affecting their efficiency and concentration. This calls for targeted interventions to support students' mental well-being and maintain their motivation during crises. Significant gender disparities in academic motivation and performance were also revealed, with females exhibiting higher levels of both intrinsic and extrinsic motivation. Educators should be mindful of these differences and implement gender-sensitive strategies to support all students effectively. In addition, this research can be used to create awareness among university students and teachers about how to develop strategies to improve students' learning during online teaching. Targeted interventions need to be designed to boost motivation among different student demographics, promoting a more inclusive learning environment. The following specific demographic groups require more interventional support for academic motivation such as males, students from lower-income backgrounds, younger students, and students who have illiterate or semi-literate mothers.

DECLARATION STATEMENTS

Conflict of interest statement

The authors declare that they have no conflict of interest.

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Ethics and Permission

The study was approved by the Institutional Research Board and Ethical Review Committee of the Institute of Applied Psychology, University of the Punjab, Lahore. Written Informed consent was taken from participants by the researcher.

Author Contribution Statement

ZS conceptualized and conducted the study under the supervision of SG. Both authors drafted and approved the final version of the manuscript.

Data sharing availability statement

Data can be obtained from the corresponding author upon reasonable request.

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