Academic Motivation of University Students and Intrinsic and Extrinsic Goals asPredictors

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Abstract

Problem statement: *Academic motivation is of autonomous nature when it originates from within, and of controlled nature when it originates from external factors. Amotivation is the absence of motivation. Intrinsic and extrinsic goals are said to induce differenct kind of academic motivation in students of developed and developing countries. It is, therefore, important to explore autonomous motivation, controlled motivation, and amotivation of university students and the impact of intrinsic and extrinsic goals on academic motivation in developing societies like Pakistan.*

Methodology: *The data was collected from 238 male and female students, aged 18-32 (M=20.68, SD= 2.127) at a large university in Karachi through a demographic form, Academic Motivation scale and Aspiration Index.*

Results: *Repeated measures ANOVA test revealed that students' autonomous and controlled motivation were significantly higher than their amotivation F(1.818, 430.871) = 1.738, p <*
.01, η² = .880. Multiple linear regression tests showed that autonomous motivation was predicted by intrinsic goals (β=.293, t= 4.042, p<.01) and extrinsic goals (β=.144, t= 1.984, p<.05). Controlled motivation was predicted by extrinsic goals (β=.362, t= 4.978, p<.01). *Further amotivation was predicted by intrinsic goals (β=-.277, t= -3.671, p<.01) and*

extrinsic goals (β=.324, t= 4.302, p<.01).

Recommendations: *Studies in the future should explore the links of academic motivation with the kinds of intrinsic and extrinsic goals. Motivation profiles of students from various disciplines should be maintained in the future. Gender differences in motivation could also be explored.*

Keywords: Autonomous motivation, Controlled motivation, Amotivation, Intrinsic goals, Extrinsic goals

Introduction

Academic motivation is defined as the reason behind a student's studying behavior. For example, the reason behind studying hard and trying to achieve good grades may be family pressure or the desire for a good job in the future. Academic motivation is significant for academic outcomes and student success in studies (Berestova et al., 2022). The well-known Self-determination theory (Deci & Ryan, 2000) categorizes motivation into two categories. The first is autonomous motivation which ensures an experience of willingness and choice (Claver et al., 2020). It arises internally, for example, developing interest in something, drawing pleasure and satisfaction from it, giving importance to a certain thing, or feeling identification with it. (Deci & Ryan, 2008). The second is controlled motivation which creates feelings of pressure (Tsoi et al., 2018). It is due to the outside forces (Deci & Ryan, 2008). This type of motivation is controlled by positive and negative reinforcements. A third kind is amotivation which is the index of the absence of any motivation. The students do not see any value in working hard or achieving academic success.

Academic motivation is important to study because it is one of the main predictors of academic performance, academic engagement, and persistence (Lu et al., 2022). Since teachers are facing a major problem of increased amotivation among students (Haser et al., 2022), educators need to make efforts to make students feel autonomous in their motivation to enhance their academic success (Wei et al., 2023). To investigate the factors that impact academic motivation, several studies have been conducted. Intrinsic and extrinsic goals are important factors that may induce or lower motivation in students. Intrinsic goals having a non-materialistic nature are accepting oneself, feeling affiliated with a group, and contributing to society. The goals of materialistic nature, which are called extrinsic goals, include aiming for monetary success, forming a good image, and becoming famous (Kasser & Ryan, 1996). Intrinsic goals make people feel connected to others, independent in their decisions, and productive, however, extrinsic goals make them feel bound to external factors (Kasser, 2016). Studies suggest that intrinsic goals induce autonomous motivation and extrinsic goals induce controlled motivation. However, studies conducted in developing countries have shown an association of autonomous motivation with extrinsic goals (Siwek et al., 2017). It is, therefore, important to see the impact of intrinsic and extrinsic goals on academic motivation in developing societies like Pakistan. The current study was, therefore, aimed to:

    i.   inquire about the academic motivation (difference between autonomous, controlled, and amotivation) of university students,

    ii.   and explore intrinsic and extrinsic goals as predictors of students' academic motivation.

Literature Review

Autonomous motivation is correlated positively to well-being and academic variables while controlled motivation and amotivation are considered to be resulting in a sense of low well-being and lower grades (Jeno et al., 2023). There is robust evidence that autonomous

motivation is associated with good academic functioning. The results of a study, aimed to investigate motivational determinants of academic functioning among biology students from nine higher education institutions in Norway, showed that autonomous motivation positively predicted vitality and negatively predicted dropout intentions (Jeno et al., 2023). Autonomous motivation is also linked to higher grades and GPAs (Claver et al., 2020). Further, autonomous motivation relates to characteristics of hardworking students such as more study time (Landge et al., 2019), higher academic retention (Brunet et al., 2013), academic engagement (King & Datu, 2017), use of good strategies and having positive feelings (Orsini et al., 2019), and academic self-efficacy (Lu et al., 2022). Howard et al. (2020), in their meta-analysis on student motivation and academic outcomes, also noted a positive link between autonomous motivation and academic success, and academic motivation and study retention.

Evidence is present for controlled motivation being linked with poor academic results (Manganelli et al., 2019). In one study, learners with controlled motivation demonstrated lower scores on perceived learning outcomes than learners with autonomous motivation (Wei et al., 2023). Controlled motivation is also associated with lower energy (Tsoi et al., 2018), lesser engagement (Bonneville-Roussy et al., 2017), negative feelings (Ketonen et al., 2018), burnout feelings, getting bored, and anxiety (Brunet et al., 2015). Amotoivation is negatively associated with academic variables such as student self-efficacy (Komarraju, 2013). In a recent study, amotivation of students was found to relate to low grades, persistence, and study effort and engagement (Tóth-Király et al., 2022).

Intrinsic and extrinsic goals have been found to impact student motivation and achievement differently. Intrinsic goals are positively related to student achievement (King & Datu, 2017) and are related to a smaller number of failures in exams among university students (Eniko & Stefan, 2016). Intrinsic goals are also found to be positively associated with well-being and negatively related to ill-being indicators (Sonmez, 2023). Extrinsic goals increase recognition-seeking behavior, and social comparisons which in turn lower well-being and induce negative emotions (King &Datu, 2017). Mental health boosts when people place less importance on extrinsic goals (Kasser et al., 2014). In the academic domain, a focus on extrinsic goals was negatively associated with achievement (King &Datu, 2017).

Autonomous motivation is generated and increased by having intrinsic goals, while controlled motivation and amotivation are related to extrinsic goals (Guay, 2022). Empirical evidence for these associations has been established in other studies (Sheldon et al., 2004; Vansteenkiste et al., 2006). Studies conducted on mastery goals, similar in nature to intrinsic goals as both focus on personal growth and learning, also highlight that mastery goals positively predict autonomous motivation and not controlled motivation. In a longitudinal study, Duchesne et al. (2022) found that mastery goals predicted autonomous motivation, decreased disruptive behaviours, and increased student achievement. However, in a study conducted in Poland, which is a developing country, a difference in results was found. Siwek et al. (2017) noted that Polish university students who were autonomously motivated put importance on intrinsic goals as well as placed value on extrinsic goals. For amotivation, the results of the studies show that it is linked to extrinsic goals. For example, in a study,

amotivation was observed to mediate the associations of extrinsic goals and key indicators of learning, such as engagement and achievement (King & Datu, 2017).

It is, therefore, important to explore academic motivation in collectivist cultures and to see the impact of intrinsic and extrinsic goals on academic motivation in developing societies like Pakistan. The current study, therefore, investigated the academic motivation of university students. Also, their intrinsic and extrinsic goals were explored as predictors of their academic motivation.

Methodology

Design

The design of the study was correlational, cross-sectional, and descriptive.

Sample

Two hundred and thirty-eight participants participated in the study. They were undergraduate students at a local university in Karachi in a science or social science department. There were 61 men and 177 women in the sample, aged between 18 to 32 years (M= 20.68, SD= 2.127). Data was collected through a convenient sampling method.

Instruments

Data was collected through questionnaires.

The demographic form. It consisted of questions about age, gender, and year and discipline of studies.

Academic motivation. Academic motivation (autonomous and controlled motivation, and amotivation) was measured by the 20 items of the Academic Motivation Scale (Vallerand et al., 1993), with adaptation to the Pakistani education context with the authors' permission. The scale assesses the reasons for going to university. Items are scored on a seven-point scale where 1 indicates no correspondence and 7 indicates exact correspondence. Internal consistency reliability values of the subscales range between 0.62 to 0.86 (Vallerand et al., 1993).

Intrinsic and Extrinsic goals. To measure participants' intrinsic goals and extrinsic goals, 12 items of the Aspiration Index were used (T. Kasser, personal communication, September 12, 2016). The 12 items have the highest factor loadings of all the items in different samples (Grouzet et al., 2005). The Aspiration Index is a good measure of assessing the intrinsic and extrinsic goals of undergraduate students (e.g., Sonmez, 2023). The items have a 9-point scale where 1= not at all - 9= extremely.

Data Collection and Analysis

The sample was recruited through a convenient sampling method and consisted of 238 students from a local university based in Karachi. Student participation was voluntary. They individually filled out the questionnaires after written consent in their free time between two classes or after their classes were done. Names of the participants or any other identifying information were not taken on the questionnaires to maintain the anonymity of the responses. SPSS v.22 was used for data analysis. Descriptive statistics, repeated measures ANOVA, and multiple linear regression tests were done.

Results

Table 1

Demographic Information of Participants (N=238)

	Mean	SD	Min-Max
Age	20.68	2.127	18-32
	Category	Frequency	Percentage
Gender	Male	61	26
	Female	177	74
Year of Study	First	50	21
	Second	95	40
	Third	46	19
	Fourth	47	20
Discipline	Science	70	29
	Social Science and Humanities	168	71

Table 1 shows the demographics of the study sample. The sample included 26% men and 74% women. The mean age was 20.68 years with a standard deviation of 2.127 years. All the participants were students of undergraduate programs, 21%, 40%, 19%, and 20% respectively from the first to the fourth year of the university. Seventy percent of the sample was from social science and humanities disciplines, while 29% was from science disciplines.

Table 2

Differences among Autonomous, Controlled, and Amotivation of the Sample (N=238)

	Mean	SD	Greenhouse-Geisser	df	Error	F	p	η^2
Controlled motivation	10.188	2.255						
Amotivation	2.724	1.389						
Autonomous motivation	10.436	1.995	9143.548	1.818	430.871	1.738**	.000	.880

**p<.01

Table 2 shows repeated measures ANOVA results that revealed a significant difference among the motivation levels, $F(1.818, 430.871) = 1.738$, $p < .01$, $\eta^2 = .880$. The degrees of freedom were adjusted because the assumption of sphericity was not met in Mauchly's test.

Table 3

Pairwise comparisons of Autonomous, Controlled, and Amotivation of the Sample (N=238)

	Mean difference	SE	p	95% Confidence Interval for Difference	
				Lower Bound	Upper Bound
Autonomous motivation- Controlled motivation	.248	.124	.140	-.051	.547
Autonomous motivation- Amotivation	7.712**	.165	.000	7.316	8.109
Controlled motivation- Amotivation	7.464**	.155	.000	7.092	7.837

**p<.01

Table 3 shows pairwise comparisons. Post hoc tests using the Bonferroni correction indicated that the mean scores of autonomous motivation (M = 10.436, SD = 1.995) were significantly higher than amotivation (M = 2.724, SD = 1.389, p < .01). Also, the mean scores of controlled motivation (M = 10.188, SD = 2.255) were significantly higher than amotivation (M = 2.724, SD = 1.389, p < .01).

Table 4

Pearson Correlation of Study Variables (N=238)

	1	2	3	4	5
1. Autonomous motivation	--	.601**	-.096	.373**	.307**
2. Controlled Motivation		--	.213**	.240**	.383**
3. Amotivation			--	-.096	.307**
4. Intrinsic goals				--	.559**
5. Extrinsic goals					--

p**< 0.01

The relationships of study variables were explored by the Pearson moment correlation coefficient. Table 4 shows that autonomous motivation was significantly correlated with intrinsic goals (r=.373, p<.01) and extrinsic goals (r=.307, p<.01). Controlled Motivation was also significantly correlated with intrinsic goals (r=.240, p<.01) and extrinsic goals (r=.383, p<.01). Amotivation was only significantly related to extrinsic goals (r=.307, p<.01).

Table 5

Predictors of Autonomous Motivation (N=238)

Variables	B	SE	B	t	p
Constant	6.796	.572		11.886	.000
Intrinsic goals	.443	.110	.293	4.042**	.000
Extrinsic goals	.188	.095	.144	1.984*	.048

$R2= .153$, $F(3, 234)= 21.260$, $p<.001$, Unstandardized Coefficient = B, Standardized Coefficient = β, Dependent Variable = Autonomous Motivation, Predictors: (Constant), Intrinsic goals, Extrinsic goals.

Multiple linear regression was applied with autonomous motivation as the dependent variable and intrinsic goals and extrinsic goals as independent variables. Table 5 suggests that autonomous motivation was predicted by intrinsic goals (β=.293, t= 4.042, p<.01) and extrinsic goals (β=.144, t= 1.984, p<.05).

Table 6

Predictors of Controlled Motivation (N=238)

Variables	B	SE	B	T	p
Constant	6.959	.649		10.730	.000
Intrinsic goals	.065	.124	.038	.524	.601
Extrinsic goals	.536	.108	.362	4.978**	.000

$R2= .148$, $F(3, 234)= 20.335$, $p<.001$, Unstandardized Coefficient = B,

Standardized Coefficient = β, Dependent Variable = Controlled Motivation, Predictors: (Constant), Intrinsic goals, Extrinsic goals.

Multiple linear regression was applied with controlled motivation as the dependent variable and intrinsic goals and extrinsic goals as independent variables. Table 6 suggests that controlled motivation was predicted by extrinsic goals (β=.362, t= 4.978, p<.01).

Table 7

Predictors of Amotivation (N=238)

Variables	B	SE	B	T	p
Constant	2.894	.415		6.976	.000
Intrinsic goals	-.292	.079	-.277	-3.671**	.000
Extrinsic goals	.296	.069	.324	4.302**	.000

$R2= .081$, $F(3, 234)= 10.420$, $p<.01$, Unstandardized Coefficient = B, Standardized Coefficient = β, Dependent Variable = Amotivation, Predictors: (Constant), Intrinsic goals, Extrinsic goals.

Multiple linear regression was applied with amotivation as the dependent variable and intrinsic goals and extrinsic goals as independent variables. Table 7 suggests that amotivation was predicted by intrinsic goals (β=-.277, t= -3.671, p<.01) and extrinsic goals (β=.324, t= 4.302, p<.01).

Discussion

The study investigated the levels of academic motivation of university students and their academic motivation as predicted by their intrinsic and extrinsic goals. The results suggest that our participants' autonomous motivation and controlled motivation levels were higher than their amotivation levels, indicating that they were highly motivated for both autonomous and controlled reasons. The results also suggest that autonomous motivation was predicted positively by intrinsic goals and extrinsic goals, and controlled motivation was predicted positively by extrinsic goals. Further, amotivation was predicted negatively by intrinsic goals and positively by extrinsic goals.

Given that higher motivation levels and lower amotivation levels are desirable for academic success (Jeno et al., 2023), the finding that our participants had higher motivation levels than amotivation is satisfactory. Other studies have found contrasting and alarming results, for example, around 25 percent of the Tóth-Király et al.'s (2022) study sample had higher amotivation levels. The contrast in results may be due to the difference in the nature of the sample. Their sample was a high-school student group; however, our sample was from a university. Also, Wormington et al. (2012) suggested that university students' autonomous motivation is high because their subject choice is based on their personal inclination. At this level, controlled motivation may also be higher because they have to take certain courses that are out of their interest but must be taken for degree completion (Van Soom & Donche, 2014).

Another reason for the higher levels of both autonomous and controlled motivation may be that the two motivation types may not be considered opposite to each other by our participants. This is also possible that they were not able to distinguish clearly between the two types (Tsoi et al., 2018), which may be because both autonomous and controlled types provide reasons to do something (Orsini et al., 2018). This proposition is supported by a moderate positive correlation between the autonomous and controlled motivation of our study participants. This observation has been common in collectivist contexts e.g., Spanish and Singaporean participants (Caleon et al., 2015; Cuevas et al., 2018).

We discovered that participants' autonomous motivation was predicted positively by their intrinsic goals. Similar results have been found previously with university students. For example, Hope et al. (2019) found that intrinsic goals over extrinsic goals predicted increased autonomous motivation in a sample of over 1400 university students. In another longitudinal study with university students, students completed online surveys on recreational reading and motivation at the beginning and end of the academic year. Students who were engaged in a habit of reading, a self-growth activity that is connected to intrinsic goals, were more autonomously motivated (Levine, 2022). Interestingly, the autonomous motivation of our participants was also predicted by their extrinsic goals, although the significance is weak. This finding supports and verifies that of Siwek et al.'s (2017) results with the Polish university students, who were autonomously motivated and gave importance to both intrinsic and extrinsic goals.

The association found between autonomous motivation and extrinsic goals in the present study may be because the current study was conducted in an economically developing and collectivistic country. In such contexts, extrinsic goals may be contributing to academic factors. For instance, the extrinsic goals of university students in Malaysia were positively related to their good study skills (Adnan & Buniamin, 2014), where Malaysia has social dynamics like Pakistan.

For controlled motivation, we found that it was predicted positively by extrinsic goals. This was in accordance with the previous research (Sheldon et al., 2004; Vansteenkiste et al., 2006). Since extrinsic goals are related to external factors and controlled motivation is also induced by external forces, this finding was expected. Amotivation was predicted negatively by intrinsic goals and positively by extrinsic goals in our study. This may be due to the materialistic nature of the extrinsic goals which takes the motivation away. Also, intrinsic goals are oriented toward self-growth and hence may increase academic motivation. Our findings replicate the results of a recent short-term longitudinal study, which also demonstrated that students' intrinsic goals were positively and negatively related to autonomous motivation and amotivation respectively, and extrinsic goals were positively related to both controlled motivation and amotivation (Behzadnia et al., 2022).

Conclusion

Academic motivation (autonomous, controlled types, and amotivation) of university students was the area of exploration in the present study. The link of motivation types with students' intrinsic and extrinsic goals was also explored. Academic motivation is an important topic to study as it is one of the main predictors of academic variables such as performance, academic engagement, and persistence. The findings of the present study show that the participants were highly motivated for both autonomous and controlled reasons. Amotivation level of participants was quite low, which is a satisfactory finding. According to our expectation, autonomous motivation was predicted positively by intrinsic goals, controlled motivation was predicted positively by extrinsic goals, and amotivation was predicted negatively by intrinsic goals and positively by extrinsic goals. Along with that, autonomous motivation was also predicted positively by extrinsic goals. This finding can be attributed to the collectivistic nature of the culture and developing economic conditions prevailing in the context to which the participants belonged.

Recommendations

In the context of theoretical implications, the study adds to the literature on the Self-determination theory of motivation, which says that autonomous motivation is linked to intrinsic goals and controlled motivation and amotivation are linked to extrinsic goals. Our study demonstrates that autonomous motivation can also be linked to extrinsic goals in developing and collectivist contexts. Practically, this research highlights that since extrinsic goals also foster autonomous motivation to some extent, these goals should not always be condemned among students. Following recommendations are given for further studies:

- This study did not focus on the kinds of intrinsic and extrinsic goals, which include aiming for monetary success, forming a good image in front of others, feeling connected to others, etc. Studies in the future should explore the links of academic motivation with the kinds of intrinsic and extrinsic goals.
- In particular, autonomous motivation with extrinsic goals of financial success, image,

and popularity should be investigated.

- By doing comparison studies, motivation profiles of students from various backgrounds of science/ social science disciplines should be maintained in the future.
- Amotivation could be explored at school and high school levels with an identification of the factors of amotivation.
- Gender differences in motivation could also be explored.
- Based on these studies, steps could be taken to reduce amotivation to a further minimum among students of all levels.

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