



FACTORS GENERATING DIFFERENCES IN MOTIVATION AND ACADEMIC ENGAGEMENT AMONG STUDENTS

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Abstract

On an educational level, it has been observed almost universally worldwide that perceptions regarding students' motivation and academic engagement at the individual, team, or organizational levels have been influenced by the pandemic crisis, which prompted many higher education institutions to implement significant changes. This situation has impacted both students' psychological well-being and aspects of their academic engagement and participation in educational activities, leading to a decline in study motivation during both the pandemic and post-pandemic periods. This presentation highlights the results of a quantitative study conducted on a sample of 149 students, aimed at evaluating the factors that can generate differences in motivation and academic engagement. The study's conclusions identify several factors contributing to these differences, including the student's gender, attendance at courses and the number of absences, involvement in course activities, completion of assignments and projects proposed by instructors, as well as the year of study.

The research provides new arguments for emphasizing and improving certain aspects that are practically important for optimizing the academic education process.

Keywords: motivation, intrinsic motivation, extrinsic motivation, academic engagement, students.

1. INTRODUCTION

Over time, a series of studies have been conducted in the field of educational psychology, most of which have concluded that the educational process is a decisive stage in human development, influenced by various factors related to the specific

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characteristics of the student, the features of the educational environment, as well as the motivation to achieve performance (Perkman, 2021).

It has been highlighted that motivation directly linked to academic performance represents an active and fundamental element in the learning process, acting as a major force that directs, energizes, and regulates students' overall behaviour, with a direct impact on their academic engagement. Psychological well-being is identified as a determining factor in the lives of all individuals (Sîrbu, 2016).

In the context of general academic instruction for students, recent years have been marked by profound changes due to the period influenced by pandemic-related restrictions. The transition from physical learning environments to online settings initiated an adaptation phase to the new, often unfamiliar formats. This adjustment varied among both educators and students, leading to behaviors and attitudes that directly impacted academic engagement and students' overall performance.

Moreover, the prolonged pandemic period and the subsequent acceptance of online learning environments introduced a new challenge when transitioning back to hybrid or physical learning formats. Research has highlighted another necessary adaptation phase, similarly, affecting psychological well-being as well as behaviors related to academic engagement and performance. Global data indicates that the dropout rate in higher education is nearly 40%, raising a critical alarm for identifying factors that can positively impact students' academic engagement while simultaneously reducing the dropout rate (Hanson, 2024).

An important factor analysed in relation to students' academic engagement is motivation, which underpins individual behaviour, ensures successful adaptation to the environment, and facilitates the achievement of superior performance (Maslow, 2007). Motivation has been broadly and diversely defined by theorists who have explored various models and methods of explaining it. Consequently, definitions of motivation derived from these theories are varied, primarily describing a specific characteristic of the human psyche that reflects a particular state of need.

One of the most important theories of motivation is the one proposed by Ryan and Deci, which addresses aspects of motivation and behavior (Deci & Ryan, 1985). The theory proposed by these authors has been applied and tested across various fields of activity, with the results supporting many of the concepts explored. Building on the concepts of intrinsic and extrinsic motivation, the researchers highlighted the fundamental idea that individuals can transition from extrinsic to intrinsic motivation through a specific process of internalization (Deci & Ryan, 1990).

The concept of motivation for achievement was introduced by McClelland (1985), who began his studies based on Maslow's hierarchy of needs model. However, the new direction McClelland brought forward is characterized by the evaluation of the consequences of behaviours specific to certain needs. The individual is driven by three types of needs: affiliation, achievement, and power

(either personal or institutionalized). These needs are not innate and can be learned (McClelland, 1985).

In 1992, a new taxonomy of motivation was proposed by Vallerand and his collaborators, who suggested three defining elements of intrinsic motivation: intrinsic motivation for knowledge, intrinsic motivation for achievement, and intrinsic motivation for experiencing stimulation. Additionally, the authors proposed three dimensions of extrinsic motivation within the theory: extrinsic motivation for regulation, extrinsic motivation for introjection, and extrinsic motivation for internalization. One final aspect of this theory is the concept of lack of motivation, or amotivation, which is linked to the phenomenon of learned helplessness (Vallerand, 1992).

The research conducted within this broader context of the global educational impasse complements a recent study conducted in Pakistan by researchers Akram and Li, which concluded that the facets of intrinsic and extrinsic motivation play a determining role in academic engagement, including in online activities (Akram & Li, 2024). Thus, the present research aims to highlight certain factors related to students' activities in the academic environment, factors that can be directly and effectively used to improve aspects related to intrinsic and extrinsic motivation, and implicitly, to have a favourable impact on students' academic engagement.

2. OBJECTIVE AND HYPOTHESES

2.1. OBJECTIVE

The objectives of the research focused on:

1. Evaluating differences in extrinsic motivation based on gender, the year of study the students are in, and their attendance at courses.
2. Highlighting the difference in intrinsic motivation among students based on their level of activity in courses and the way they complete assignments and projects.
3. Identifying differences in academic engagement among students based on the level of activity students maintain during courses and seminars.

2.2. HYPOTHESES

To achieve the research objectives, the following hypotheses were formulated:

H1. There is a difference in students' extrinsic motivation based on their gender, the year of study they are in, and their level of attendance at courses.

H2. A difference in students' intrinsic motivation is evident, as reflected by their level of participation in courses and the completion of assignments and projects.

H3. A difference in academic engagement occurs among students based on the intensity of their active participation in courses and seminars.

3. METHOD

3.1 The participants

The research sample consists of a total of 149 students from the Faculty of Psychology and Educational Sciences at Hyperion University in Bucharest. The sample is made up of 16% male respondents and 84% female respondents, with an average age of 32 years. Of the respondents, 88% come from urban areas, while 12% come from rural areas. Regarding the year of study, 55% of respondents are in their first year, 32% are in their second year, and 13% are in their final year. In terms of attendance at courses and seminars, 55% report having few absences, 30% report a moderate number of absences, and 14% have a high number of absences. Regarding participation in courses and seminars, 18% confirm they engage in minimal activity, 44% are moderately active, and 38% confirm they have a high level of engagement. As for completing assignments and projects, 67% of respondents confirm they complete them on time, 28% prefer to do them last minute, and 5% do not complete them at all.

3.2 The instruments

The „Academic Motivation Scale (AMS-C 28)”, developed by R.J. Vallerand and his collaborators in 1992, is an instrument based on self-determination theory that measures three levels of the motivational process: intrinsic motivation, extrinsic motivation, and amotivation. The internal consistency coefficient calculated from the data obtained in the studied sample is .895 (Vallerand et al., 1993).

The „Academic Engagement Scale”, developed by S. Zhang and collaborators in 2015, was created to evaluate students' academic engagement. The internal consistency coefficient calculated from the data obtained in the studied sample is .885 (Zhang et al., 2015).

3.3 Procedure

The two scales were incorporated into a Google Forms questionnaire, along with socio-demographic items and items related to students' activities, which were included as independent variables. The questionnaire was distributed online to the respondents. Participants in the study were informed about the research objectives, the scales used, voluntary participation, the confidentiality of the data, and the use of the data exclusively at the sample level. Additionally, respondents were informed about their right to withdraw from the study without any further consequences. The ethical code of the psychology profession and data confidentiality according to GDPR were respected.

3.4 The design

For this research, two categories of variables were studied:

1. Dependent variables: academic engagement (AE), intrinsic motivation for achievement (IMAch), intrinsic motivation for knowledge (IMKnow), and intrinsic motivation for stimulation (IMStim), extrinsic motivation for regulation (EMReg), extrinsic motivation for identification (EMIdent), and extrinsic motivation for introjection (EMIntro).

2. Independent variables: gender (female, male), year of study (I, II, or III), attendance at classes (few, moderate or many absences), activity during classes (low, moderate or high activity), completion of assignments and projects (on time, last minute or not at all).

The research design is non-experimental (Vasiliu, 2018), of the type: N: O1 O2, where O1 represents the measurement of academic engagement, and O2 represents the measurement of the components of academic motivation in students.

4. RESULTS

The collected data were analysed in terms of the distribution of the obtained values. The results of the Kolmogorov-Smirnov normality test indicated that only the academic engagement variable follows a distribution like a normal distribution, while the other dependent variables show values that do not follow a normal distribution (Table 1).

Table 1 – Kolmogorov-Smirnov Normality Test

	AE	IMKnow	IMAch	IMStim	EMIdent	EMIntro	EMReg
N	149	149	149	149	149	149	149
Kolmogorov-Smirnov Z	1.02	2.47	1.57	1.28	2.46	1.71	1.58
Asymp. Sig. (2-tailed)	.249	.000	.009	.058	.000	.003	.009

Based on these results, since the normality of the distribution is not confirmed for most of the dependent variables analyzed, the hypotheses were tested using the appropriate non-parametric tests (Pallant, 2007).

To test the first hypothesis, which suggests that there is a difference in students' extrinsic motivation based on their gender, year of study, and attendance at courses, the Mann-Whitney test (Tables 2 and 3) and the Kruskal-Wallis test (Tables 4-7) were applied.

Table 2 – Mann-Whitney Test for Extrinsic Motivation by Gender

	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
EMIdent	1118.00	1418.00	-2.00	.045

The Mann-Whitney test results for extrinsic motivation for identification indicate that there is a statistically significant difference between genders ($p = .045$). Therefore, the null hypothesis is rejected, and it can be concluded that there are gender differences in extrinsic motivation for identification. However, for extrinsic motivation for regulation and introjection, no statistical significance was found, and thus the null hypothesis is retained for these two aspects of extrinsic motivation. This suggests that gender does not significantly influence these two forms of extrinsic motivation in the studied sample.

Table 3 – Mean Ranks for Differences in Extrinsic Motivation for Identification by Gender

		N	Mean Rank	Sum of Ranks
EMIdent	Female	24	59.08	1418.00
	Male	125	78.06	9757.00
	Total	149		

The analysis of the mean ranks for extrinsic motivation for identification reveals that male respondents report a significantly higher mean rank (78.06) compared to female respondents (59.08). This suggests that extrinsic motivation for identification is significantly higher among male students, highlighting a gender-based difference in this type of extrinsic motivation. This result supports the conclusion that gender plays a role in the level of extrinsic motivation for identification, with males showing stronger motivation in this regard.

Table 4 –Kruskal-Wallis Test for Differences in Extrinsic Motivation for Regulation by Year of Study

	EMReg
Chi-Square	6.94
df	2
Asymp. Sig.	.031

The Kruskal-Wallis test results indicate a statistically significant difference in extrinsic motivation for regulation across the three years of study ($p = .031$). This suggests that students' extrinsic motivation for regulation varies depending on the year of study. Therefore, we reject the null hypothesis and conclude that there are significant differences in extrinsic motivation for regulation across academic years. However, for extrinsic motivation for introjection and extrinsic motivation for internalization, no statistically significant differences were found, as the p -values

were above the significance level ($p > .05$). Thus, the null hypothesis is retained for these two types of extrinsic motivation, indicating no significant differences based on the year of study.

Table 5 – Mean Ranks for Differences in Extrinsic Motivation for Regulation by Year of Study

		N	Mean Rank
EMReg	First Year (I)	82	66.88
	Second Year (II)	47	82.66
	Third Year (III)	20	90.28
	Total	149	

The analysis of the mean ranks for extrinsic motivation for regulation by year of study indicates that students in their third year (III) report a significantly higher mean rank (90.28) compared to students in their second year (II) (82.66) and first year (I) (66.88). This suggests that extrinsic motivation for regulation is notably higher among students in their final year, highlighting that students with more academic experience may have a stronger drive to regulate their academic behaviours.

Table 6 – Kruskal-Wallis Test for Differences in Extrinsic Motivation for Regulation by Level of Attendance

	EMReg
Chi-Square	8.83
df	2
Asymp. Sig.	.012

Based on the results obtained from the Kruskal-Wallis test, it can be concluded that there is a significant difference regarding extrinsic motivation for regulation depending on the level of attendance at courses. Specifically, for extrinsic motivation for regulation, $p = .012$, this indicates that there are significant differences between groups with different levels of attendance at classes. Additionally, for extrinsic motivation for introjection and extrinsic motivation for internalization, no significant differences were found ($p > .05$), and the null hypothesis was maintained.

Table 7 – Mean Ranks for Differences in Extrinsic Motivation for Regulation Based on Attendance Levels

		N	Mean Rank
EMReg	High attendance	83	78.35
	Moderate attendance	45	80.81
	Low attendance	21	49.31
	Total	149	

The analysis of the mean ranks for the differences in extrinsic motivation for regulation based on attendance levels indicates that respondents with many absences report a lower mean (49.31) compared to those with few absences (78.35) or with a moderate number of absences (80.81). This concludes that extrinsic motivation for regulation is significantly lower among respondents with reduced attendance at courses.

For testing the second hypothesis, which assumes that there is a difference in students' intrinsic motivation reflected by their activity during classes and the completion of assignments and projects, the Kruskal-Wallis test was applied (tables 8-11).

Table 8 – Kruskal-Wallis Test for Differences in Intrinsic Motivation for Achievement Based on Class Activity.

	IMAch
Chi-Square	6.69
df	2
Asymp. Sig.	.035

When examining the differences in intrinsic motivation based on students' class activity, the results of the Kruskal-Wallis test show statistical significance ($p = .035$). Therefore, the null hypothesis is rejected, and it is concluded that there are differences in intrinsic motivation for achievement depending on the level of class activity. For intrinsic motivation for knowledge and intrinsic motivation for stimulation, no statistical significance was found ($p > .05$), and thus the null hypothesis is retained.

Table no. 9 – Rank Means for Differences in Intrinsic Motivation for Achievement Based on Class Activity

		N	Mean Rank
IMAch	Low Class Activity	28	62.14
	Medium Class Activity	66	71.20
	High Class Activity	55	86.11
	Total	149	

The analysis of the rank means for the differences in intrinsic motivation for achievement based on the level of activity in class indicates that respondents with high activity report a higher average (86.11) compared to respondents with low activity (62.14) or moderate activity (71.20). This concludes that intrinsic motivation for achievement is significantly higher among respondents with high activity in classes and seminars.

Table no. 10 – Kruskal-Wallis Test for the Differences in Intrinsic Motivation for Achievement and Stimulation Based on How Assignments and Projects are Completed

	IMAch	IMStim
Chi-Square	7.92	7.83
df	2	2
Asymp. Sig.	.019	.020

When examining the differences in intrinsic motivation based on how assignments and projects are completed, the results of the Kruskal-Wallis test indicate that there is statistical significance ($p = .019$ and $p = .020$), therefore the null hypothesis is rejected, and it is accepted that there are differences in both intrinsic motivation for achievement and intrinsic motivation for stimulation based on how students complete their assignments and projects. For intrinsic motivation for knowledge, no statistical significance was obtained ($p > .05$), and thus the null hypothesis is retained.

Table no. 11 – Rank Mean Differences for Intrinsic Motivation for Achievement and Stimulation Based on How Assignments and Projects are Completed

		N	Mean Rank
IMAch	Assignments Done on Time	100	81.74
	Assignments Done on the Last Day	42	62.96
	Assignments Not Done at All	7	51.00
	Total	149	
IMStim	Assignments Done on Time	100	81.90
	Assignments Done on the Last Day	42	61.24
	Assignments Not Done at All	7	59.00
	Total	149	

The analysis of rank means for differences in intrinsic motivation for achievement based on the way students' complete assignments and projects indicates that respondents who complete their assignments on time report a higher mean (81.74) compared to respondents who leave assignments until the last moment (62.96) or do not complete them at all (51.00). Similarly, the analysis of rank means for differences in intrinsic motivation for stimulation based on the way students' complete assignments and projects shows that respondents who complete their assignments on time report a higher mean (81.90) compared to those who leave them until the last moment (61.24) or do not complete them at all (59.00). This concludes that both intrinsic motivation for achievement and intrinsic motivation for experience stimulation are significantly higher among students who complete their assignments and projects on time.

For testing the last hypothesis, which suggests that there is a difference in students' academic engagement depending on the intensity of active participation in courses and seminars, the Kruskal-Wallis test was applied (Tables 12 and 13).

Table 12 – Kruskal-Wallis Test for Differences in Academic Engagement Based on Class Participation

	AE
Chi-Square	9.41
df	2
Asymp. Sig.	.009

The results of the Kruskal-Wallis test indicate that there is statistical significance ($p = .009$). Therefore, the null hypothesis is rejected, and it is concluded that there are differences in academic engagement based on students' participation in class activities.

Table No. 13 – Means Ranks for Differences in Academic Engagement Based on Class Participation

		N	Mean Rank
AE	Low Class Activity	28	59.89
	Medium Class Activity	66	70.36
	High Class Activity	55	88.26
	Total	149	

The analysed mean ranks for academic engagement differences based on the level of activity in class indicate that respondents with high activity report a higher mean (88.26) compared to those with low activity (59.89) or moderate activity (70.36). This concludes that academic engagement is significantly higher among respondents with high participation in classes and seminars.

5. CONCLUSIONS

The research conducted identified certain aspects that significantly contribute to the emergence of differences in academic engagement and academic motivation. Although academic engagement was analysed alongside all the components of intrinsic motivation (intrinsic motivation for knowledge, achievement, and stimulation of experience) as well as the components of extrinsic motivation (regulation, introjection, and identification), differences were identified only in certain levels, depending on the factors identified in the academic environment that relate to students' academic engagement.

The results obtained indicate that intrinsic motivation for achievement, specifically the desire to attain high standards, is higher among students who show intense activity in courses and seminars, as well as those who complete their assignments on time. On the other hand, intrinsic motivation for stimulation of experience, characterized by enthusiasm and the enjoyment of positive feelings from engaging in new activities, is higher among students who complete their assignments and projects on time.

Regarding extrinsic motivation for regulation, characterized by obtaining rewards, the results indicated that it is at a higher level among students with few absences and those in their final year of study. Additionally, the study concludes that male students are more likely to exhibit extrinsic motivation for identification, meaning they value behaviors and actions performed based on personal choices.

Lastly, another important conclusion of the research is that academic engagement is significantly related to students' activity in courses and seminars, being at a high level for students with intense involvement.

The conclusions of the study provide an overall view of factors that influence both academic engagement and student motivation. These results can be practically applied in the academic environment by creating informative modules that offer the necessary elements to properly motivate students, optimizing their academic engagement and achieving superior academic performance.

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