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Academic Motivation of Students in Secondary Economic Education: Adaptation of the Academic Motivational Scale

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Purpose: This study aims to examine differences in academic motivation among students in secondary economic education, focusing on gender differences, the relationship between motivation and academic performance, and the most prevalent types of motivation.

Study design/methodology/approach: A quantitative research approach was used, employing an adapted version of the Academic Motivation Scale (AMS-HS 20). Data were collected through an online questionnaire, and statistical methods such as t-tests, Pearson correlation, and one-way ANOVA were applied to test the hypotheses.

Findings: The study found that male students exhibit significantly higher intrinsic motivation and interest in economics than female students. Additionally, a positive correlation exists between interest in economics and academic motivation. However, no statistically significant differences in motivation were found based on academic performance.

Originality/value: This study contributes to the understanding of academic motivation in secondary economic education. The findings provide valuable insights for educators to develop strategies that foster both intrinsic and extrinsic motivation among students.

Introduction

In the field of secondary economic education, academic motivation plays an important role in shaping students' engagement, achievement, and overall learning experience. Motivation, particularly intrinsic motivation, is fundamental for effective learning, and understanding its various dimensions can significantly influence educational practices. According to Niemiec and Ryan (2009), both teachers' orientations and specific aspects of learning tasks that are perceived as autonomy-supportive are conducive to fostering students' intrinsic motivation. In contrast, controlling educational climates tend to undermine intrinsic motivation, emphasizing importance of an environment that nurtures autonomy. This has profound implications for secondary economic education, where complex concepts require deeper engagement and conceptual understanding, tasks that intrinsically motivated students are more likely to perform successfully. Research also mention the role of extrinsic motivation in academic settings. As Ryan and Deci (2000) explain, extrinsic motivation refers to behaviours driven by outcomes separable from the activity itself, and can manifest in various forms depending on the level of autonomy experienced by the student. Berková, Borůvková, and Lízalová (2018) and Radil, Goegan and Daniels (2023) argue that motivation is not solely dependent on the students themselves but also on the expectations and teaching styles of educators. In addition, they highlight the importance of teacher competence in fostering student motivation, as effective teaching strategies contribute to a more dynamic and student-centred learning experience. They elaborate on how factors such as teacher competence and the subject content impact motivation. They note that teachers' professional competencies and the teaching methods employed play significant roles in shaping students' motivation. In the context of economic education, the application of modern teaching methods, such as problem-based learning and case studies, can stimulate students' intrinsic motivation, making the learning process more engaging and aligned with students' goals. This notion aligns with the findings of Suhag et al. (2016), who highlight

the importance of teachers' expectations in shaping student motivation, particularly in younger students. Teachers who communicate positive expectations and treat all students equally can foster an environment where motivation thrives, contributing to better academic outcomes. Moreover, the type of motivation - whether intrinsic or extrinsic - can significantly influence how students approach learning tasks. Motivation is not only about the willingness to engage in academic activities but also about the depth of engagement and the cognitive strategies employed during learning (Suhag et al., 2016). This can be particularly relevant in subjects like economics, where the mastery of concepts requires both motivation and the application of critical thinking skills. Intrinsic motivation, driven by a genuine interest in the subject matter, leads to deeper learning and better conceptual understanding, which is essential for students in secondary economic education.

The aim of this research was to examine differences in the level of academic motivation between male and female students, investigate the relationship between academic motivation and academic performance, and analyse the most frequently expressed types of motivation among students in secondary economic education. The objectives of the article are to define the academic motivation in secondary economic education and to determine whether significant differences in interest in economics among students, different levels of academic achievement and academic motivation exist. This topic was chosen due to the direct impact of academic motivation on students' performance, particularly in economics education, where understanding abstract and complex concepts is crucial for achieving academic success. Understanding which types of motivation are most prevalent in economics students can help to improve pedagogical approaches and strategies that promote greater student engagement and performance. In this context, it seems relevant to ask how different types of motivation are manifested in students who have chosen to pursue an economics secondary education, and whether there is a significant difference between the motivation according to socio-demographic factors.

Literature review

Academic motivation, whether intrinsic or extrinsic, plays a crucial role in shaping students' learning experiences in secondary economic education. As Niemiec and Ryan (2009) and other scholars suggest, fostering an autonomy-supportive learning environment, using engaging teaching methods, and maintaining positive teacher-student relationships are key to promoting motivation. Motivated students are not only more likely to engage with the material but also to achieve deeper learning and conceptual understanding, which are essential for their success in the field of economics. Mallick, Krishna De and Mukhopadhyay (2017) further support the idea that motivation, particularly intrinsic motivation, is crucial for academic success. Their research highlights the link between motivation and performance, noting that motivated are more likely to persist in their academic endeavours and achieve success. The Self-Determination Theory (SDT for short), by authors Deci and Ryan (1985), is well established in the field of academic motivation research, as the theory focuses on understanding motivation as a multidimensional process that includes not only the quantity of motivation but also qualitative aspects that are crucial for understanding the diversity of motivational states. SDT argues that people have basic psychological needs for autonomy, relatedness and competence, the satisfaction of which has a positive impact on their motivation, well-being and learning performance. In this context, the question arises how self-determination theory affects the academic motivation of secondary school students, especially in specific fields such as economic education. Important to note is that the SDT model is not a stage theory and does not assume that we must always pass through these so-called styles for certain behaviours, but rather describes types of regulation in order to show the extent to which people have integrated the regulation of a behaviour or group of behaviours (Gagné & Deci, 2005). SDT thus assumes that, under optimal conditions at a given

moment, people can integrate comprehensively or integrate an existing regulation that has been only partially internalised.

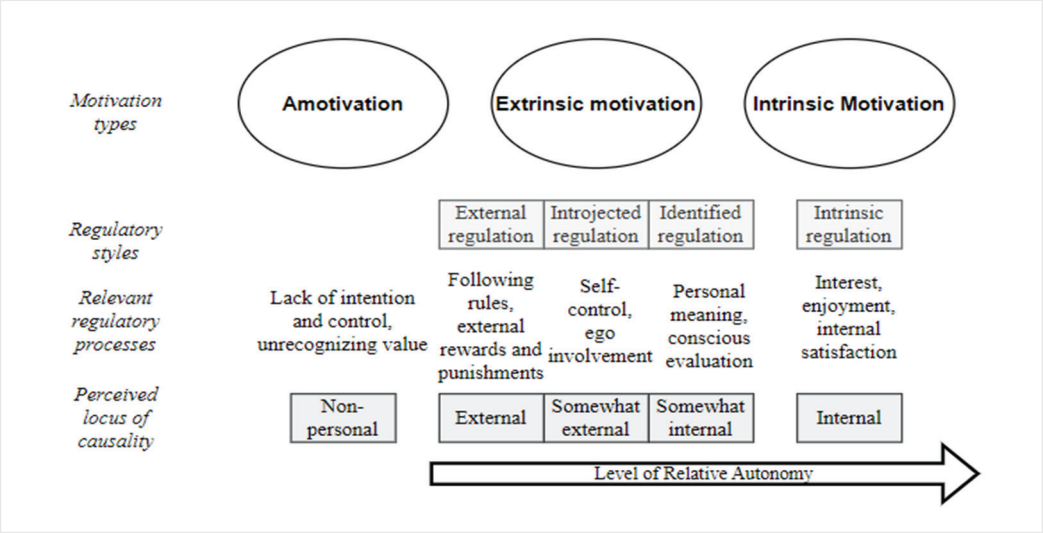

Figure 1: Types of Motivation and Their Regulatory Styles, Processes, and Locus of Causality (adapted from Niemiec & Ryan, 2009)

Academic motivation, especially in secondary education, is often considered in the context of different types of motivational regulation, ranging from amotivation, which is associated with feelings of aimlessness and lack of interest, to intrinsic motivation, where the individual performs tasks out of intrinsic interest and satisfaction (Ryan & Deci, 2020). At one end are the autonomously motivated, who learn out of personal interest, and at the other end are individuals who are motivated by extrinsic rewards or pressures, such as expectations from parents, teachers or society (Figure 1). For example, there are different types of extrinsic motivation, such as identified, introjected, and externally regulated, which are positioned between amotivation and intrinsic motivation on a continuum of motivation (Ryan & Deci, 2020). In the economics stream, where goals are often related to acquiring expertise for a professional career, those who are motivated by extrinsic goals, such as finding a better paid job, are more likely to perform tasks due to pressure or expectations from others, such as parents or teachers. Scientific research, including Guay (2022) as well as Cullen and Oppenheimer (2024), has shown that autonomy in learning plays an important role in increasing engagement and improving learning outcomes. The importance of motivation in learning economics is not negligible for secondary school students, as it directly affects their engagement and understanding of complex concepts. Long ago, Brunsma et al. (1996) discussed strategies to increase student motivation in secondary schools, which emphasise a combination of intrinsic and extrinsic motivators, with the aim of increasing student engagement and academic success. They see a positive contribution in collaboration and recognition of achievement, leading to increased motivation and better school performance. Motivated students are more likely to actively participate in discussions and apply economic theories to real-life scenarios, which enhances their critical thinking skills. Fostering motivation in economic education is therefore essential for creating informed and capable fellow citizens.

In the context of academic motivation, gender differences can influence the way students approach learning and which subjects they perceive as relevant for their future. Research by Novák et al. (2024) shows that female students in economics education have higher motivation and better academic achievement than male students. Gender can influence academic interests and subject choices, with men more likely to be interested in economic topics (Förster & Happ,

2019). Male students' higher interest in economics may reflect a higher intrinsic motivation to learn economic content and a higher perceived usefulness of the knowledge acquired. If students perceive an area as relevant and interesting, they are more likely to be intrinsically motivated to learn, which can contribute to greater persistence and engagement (Ryan & Deci, 2000). This is supported by research showing that intrinsic interest in an area promotes autonomous forms of motivation that are associated with better learning outcomes (Niemiec & Ryan, 2009). Students who achieve higher grades often show more interest in the subject, as they perceive it as important for their future academic and professional development. In economics education, a greater interest in economics can contribute to better engagement in learning and a deeper understanding of the content.

Several different measures or scales of motivation have been established in the literature, the Academic Motivation Scale (AMS) by Vallerand et al. (1992, 1993) is very commonly used in scientific works, in our case applied to measure different types of motivation in the context of Secondary Economic Education. The AMS has been used in a multitude of studies, some even in research examining motivation of secondary school students, in the context of Social Science, which includes Economics (Faiz & Avcı, 2020; Hegarty, 2010; Onuka & Durowoju, 2011). The original scale contains seven subscales reflecting different (sub)types of motivation, including intrinsic motivation to learn, different types of extrinsic motivation, and amotivation. However, some research, such as Alivernini and Lucidi (2008), has suggested that the focus should shift to the analysis of one dimension of intrinsic motivation (intrinsic motivation for knowledge), as this is associated with more long-term engagement and better academic performance, while other types of motivation, such as introjected or identified regulation, are still present, but with less impact on long-term motivation. Also important to note is that the self-determination theory, on which the AMS is based, advocates only one factor of intrinsic motivation.

Research Method

In this article, a quantitative method approach with the data collection technique being a survey model is used to analyse academic motivation among students in secondary economic education, in order to collect, process and analyse the reliable data obtained in order to test the objectives or the four hypotheses.

H1: Students differ in their level of intrinsic motivation based on gender.

H2: Male students show a higher interest in economics than females.

H3: Secondary school students with a higher perceived interest in economics have higher academic motivation.

H4: There are statistically significant differences in interest in economics between students with different levels of achievement.

The questionnaire is designed according to the research topic and hypotheses. An anonymous questionnaire based on existing literature was chosen as the research instrument. The first questions concern general socio-demographic information about the respondents, i.e. gender, age, interest in economics, academic performance this year and socio-economic status of the family. Used Academic Motivation Scale (AMS-HS 20) was adapted from the original AMS - College version introduced by Vallerand et al. (1992, 1993). Our version also incorporated just five motivational subscales (as in Alivernini & Lucidi, 2008) and adaptation for economics schooling orientation (for example see Silva, Rodrigues & Leal, 2018), was supported by a Business English lecturer.

To calculate the overall Relative Autonomy Index (RAI), which simplifies the assessment of academic motivation level, each subscale is assigned a weight. Autonomous subscales are given positive weights, while non-autonomous subscales receive negative weights. In this study, the method proposed by Alivernini and Lucidi (2008) was applied. According to this approach: the intrinsic regulation subscale, representing the highest level of self-determination, is assigned a weight of +2; the identified regulation subscale is assigned a weight of +1; the extrinsic motivation subscale is given a weight of -1 and the amotivation subscale, representing the lowest level of self-determination, is given a weight of -2. The amotivation items are negatively worded, so a low mean value for amotivation actually indicates a high level of motivation. The introjected regulation subscale is excluded from the calculation of the RAI. To determine the overall index, the average value of each subscale is multiplied by its respective weight, and all these products are summed. This indicator then reflects the individual's overall motivational orientation, where positive values indicate a more autonomous and negative values indicate a more controlled regulation.

Distribution of AMS-HS 20 questions by (sub)types of academic motivation:

1, 2, 3, 4 = Motivation

5, 6, 7, 8 = External regulation

9, 10, 11, 12 = Introjected regulation

13, 14, 15, 16 = Identified regulation

17, 18, 19, 20 = Intrinsic regulation

The survey was carried out using an online questionnaire Academic motivation in secondary economic education on the 1ka.si website during the period 14-21 February 2025 in view of the widespread phenomenon of universal digitisation and the tendency of young people to use the Internet and social networks. The link to the questionnaire was shared via Internet/social channels (SurveyCircle, Dijaski.net, Facebook groups for students). At the beginning of the questionnaire, it was pointed out that the purpose of the survey was to examine the level of academic motivation of secondary school students in economic education, and to guarantee anonymity of the data and the use of the data for purely exploratory research purposes. The survey was also open to students in part-time secondary economic education programmes, thus ensuring a greater age diversity of the sample. All the questions asked in the questionnaire are closed-ended and all the questions had to be answered in order to complete the questionnaire. 334 people accessed the questionnaire and 80 participants, or 24%, gave a complete answer. Statistical processing of the data is carried out in order to test hypotheses. For hypotheses 1 and 2, the t-test for independent samples is used, hypothesis 3 needs Pearson's correlation coefficient, and hypothesis 4 needs one-way ANOVA.

Results and Discussion

In the survey on academic motivation in economic secondary education (N = 80), 61% of women and 39% of men participated. The mean age of the respondents was 20.1 years (σ = 4.79). The majority of students (49%) rated their general interest in economics as 4 (= I am interested) on a scale 1-5 (σ = 1.0). Only a smaller proportion of students (13%) chose answer 1 or 2 (= I am not interested or not interested at all). The data on learning achievement show that the average learning achievement of the sample this year, on a scale from 1 - insufficient to 5 - excellent, is 3.6 (σ = 0.9). Regarding socio-economic status (SES), the majority of the students surveyed come from middle-income families, 63% (σ = 0.6).

Figure 2: Why do you go to school?

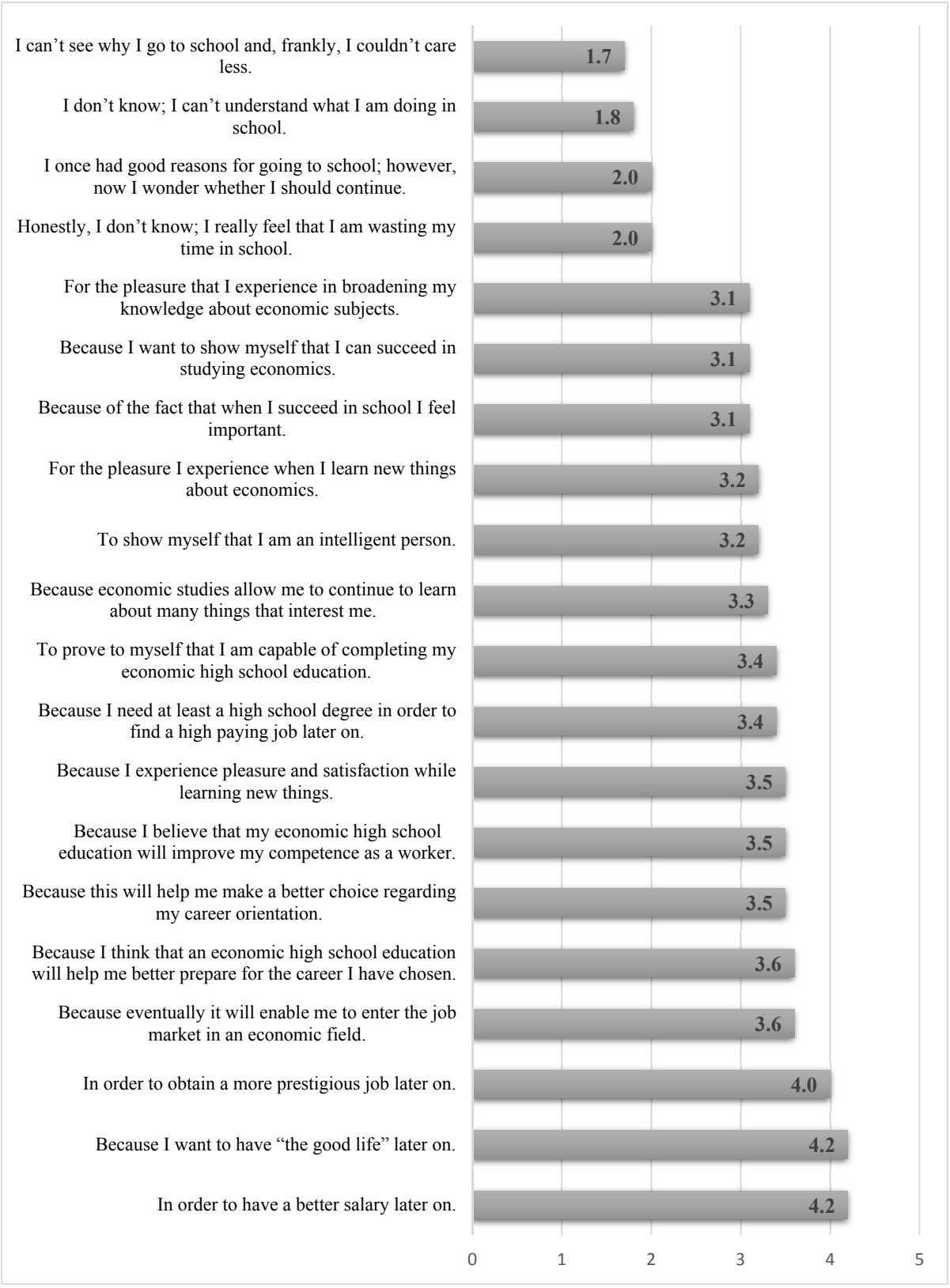

Figure 2 shows the mean values of the items from the Academic Motivation Scale, measured on a scale from 1 (not at all adequate) to 5 (very adequate). The highest rated motivational factors are associated with extrinsic goals such as a better salary in the future (M = 4.2), the desire to have a better life (M = 4.0) and to get a respectable job (M = 4.0). This indicates the

strong presence of extrinsic motivation among students, as most are driven by the expectation of financial and career benefits. Factors related to career orientation and skills development, such as help in choosing a career (M = 3.6), improving job prospects (M = 3.5) and enjoyment of learning new things (M = 3.5), are rated moderately high, also indicating the presence of intrinsic motivation in students' work. The lowest values were found for the items reflecting amotivation or low levels of academic engagement (2.0 or less). This means that only a small proportion of pupils show a complete lack of motivation to go to school. Unlike some other related studies, no higher mean values of academic motivation were found for female compared to male respondents (Table 1). This may be due to the economic education-oriented research, which has not yet been concretely examined.

As can be seen in Table 1, to test the first hypothesis (H1): students differ in their level of academic motivation, an independent samples t-test was used for items relating to perceived academic motivation.

Table 1: Level of academic motivation by gender of respondents

	Gender:	N	M	σ	t	p
Amotivation	Men	31	2,04	1,142	1,233	0,221
	Women	49	1,76	0,881		
External regulation	Men	31	4,03	0,712	1,040	0,302
	Women	49	3,83	0,944		
Introjected regulation	Men	31	3,48	1,013	1,662	0,101
	Women	49	3,07	1,110		
Identified regulation	Men	31	3,68	0,832	1,054	0,295
	Women	49	3,44	1,040		
Intrinsic regulation	Men	31	3,61	1,120	2,316	0,023*
	Women	49	3,04	1,064		
Level of academic motivation	Men	31	2,79	3,934	0,713	0,478
	Women	49	2,17	3,713		

*Note: N, number of respondents; M, arithmetic mean; σ, standard deviation; t, t-test; p, statistical significance; *, p< 0.05*

A statistically significant difference exists in intrinsic regulation (Table 1), where men (M = 3.61, σ = 1.120) scored higher mean values compared to women (M = 3.04, σ = 1.064). The first hypothesis is confirmed, as men are statistically significantly more intrinsically motivated than women, while no gender differences can be detected in other (sub)types of academic motivation.

To test the second hypothesis, an independent samples t-test was used to test for a gender difference: H2: Male students show a higher interest in economics than females.

Table 2: General interest in economics by gender of respondents

	Gender:	N	M	σ	t	p
Interest in economics	Men	31	4,19	0,749	4,05	0,00012
	Women	49	3,41	0,977		

*Note: N - number of respondents; M - arithmetic mean; σ - standard deviation; t - t-test; p - statistical significance; * - p < 0.05*

According to an independent samples t-test, the results showed a statistically significant difference in the level of interest in economics between men and women. Male students scored a higher arithmetic mean (M = 4.19) compared to females (M = 3.41), with a t-test (t = 4.05) and a p-value (p = 0.00012) below the statistical significance level (p < 0.05). Male students in our study show a statistically significant higher interest in economics than females (Table 2).

The Pearson correlation coefficient was calculated to analyse whether there is a correlation between the level of academic motivation and interest in economics, testing (H3) whether or secondary school students with a higher interest in economics show a higher level of academic motivation.

Table 3: Correlation between level of academic motivation and interest in economics

	How would you rate your general interest in economics?
Amotivation	-0,056
External regulation	0,126
Introjected regulation	0,294**
Identified regulation	0,375**
Intrinsic regulation	0,573**
Level of academic motivation	0,434**

*Note: N = 80; ** - p < 0.01*

Introjected regulation (r = 0.294), identified regulation (r = 0.375), intrinsic regulation (r = 0.573) and level of academic motivation (r = 0.434) have a statistically significant positive correlation with general interest in economics (Table 3). This suggests that introjected regulation, identified regulation, intrinsic motivation and general academic motivation are significantly associated with higher interest in economics. The association is moderately strong and positive, indicating that students with higher interest in economics achieve higher perceived motivation. The theoretical underpinnings of SDT (Ryan & Deci, 2000) are confirmed, according to which more autonomous forms of motivation (e.g. intrinsic and identified motivation) contribute to higher engagement and persistence in learning. However, motivation (-0.056) and extrinsic motivation (0.126) do not have a statistically significant correlation with general interest in economics. Motivated individuals and those who are driven solely by extrinsic motivation (e.g. rewards, punishments) clearly do not show a greater interest in this field.

It was further tested whether there were statistically significant differences in interest in economics between students with different levels of achievement. For this purpose, a one-way ANOVA (Table 4) was used to test hypothesis H4 that there are statistically significant differences in interest in economics between students with different academic achievement.

Table 4: Interest in economics by academic performance

	Academic performance:	N	M	σ	F	p
Interest in economics	1 – insufficient	2	3,50	0,707	0,435	0,783
	2 – sufficient	6	3,50	1,049		
	3 – good	27	3,59	0,844		
	4 – very good	33	3,88	0,927		
	5 – excellent	12	3,67	1,371		

*Note: N, number of respondents; M, arithmetic mean; σ, standard deviation; F, F-test; p, statistical significance; *, $p < 0.05$*

The results of the analysis show that the differences between the groups are not statistically significant ($F = 0.435$; $p = 0.783$), as the p-value is considerably higher than the chosen level of significance (Table 4). This means that we have not been able to prove that students with different learning achievement in current academic year show different levels of interest in economics. Although the literature (as suggested for example by Kpolovie, Joe & Okoto, 2014) shows an association between academic performance and interest in the subject, this study did not confirm a statistically significant association between academic performance and interest in economics. Possible reasons for this include sample heterogeneity, extrinsic motivational factors, or specificities of the learning domain-economics.

Conclusion

The results confirm the importance of more autonomous forms of motivation for academic performance and interest in economic secondary education. Overall, the results show that extrinsic motivation is the most pronounced among students in secondary economics education, with intrinsic motivation also present but somewhat less pronounced. The findings thus point to the strong presence of extrinsic motivational factors in the economic secondary context. Motivation is less pronounced, indicating a relatively high academic engagement of the majority of the sample. Male students in our study statistically showed a higher interest in economics than females. However, there is a positive correlation between interest in economics and higher perceived motivation. It is important to note that although this difference is statistically significant, the results do not necessarily provide causal conclusions, as it may be influenced by various other factors that were not taken into account in this study. In the context of economic education, this study is relevant as it provides a better understanding of academic motivation and how to create an environment that fosters the autonomy of secondary school students and allows their basic psychological needs to be sufficiently met.

More comprehensive approaches to measuring academic motivation should be developed to improve the understanding and promotion of academic motivation. Despite existing measurement instruments based on different theoretical frameworks, most focus primarily on intrinsic motivational constructs such as performance goals, self-esteem, fear of failure, emotions in school and valuing education. Therefore, it would be necessary to investigate and include external referential factors that influence students' motivation. This paper has certain limitations that need to be addressed. Conducted study did not include other hypothesised relevant factors such as teacher approaches, family support and school environment that might influence students' academic motivation. It would be necessary to develop and test the validity of measurement instruments that would allow a holistic analysis of motivational processes.

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