

Article

Learning/Earning: Characteristics of Student Work and Its Impact on Academic Careers at a Regional Hungarian University

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Abstract: Research on the effect of student work on academic achievement has produced inconsistent results, and Hungarian domestic research on the subject is scarce. Our research aims to contribute to the discussion. We hypothesize that student work has a beneficial effect on students' academic achievement. The target group is the full-time, working students at the regional Hungarian university ($n = 538$). By clustering students based on three variables (motivation, alignment of work with studies, and working hours), we separated three distinct student groups: disadvantaged/income-oriented, ambitious, and utilitarian/leisure-oriented. Disadvantaged/income-oriented students work for financial reasons and work a large number of hours. Ambitious students work fewer hours, and they work to fulfil their professional aspirations. The utilitarian/leisure-oriented cluster is the only group whose members work because it is a useful way of spending leisure time as well as an opportunity to obtain money for other free-time activities. With the help of the achievement index, we detected further differences between the student clusters. Students in the disadvantaged/income-oriented cluster do not have high academic scores and do not take part in extracurricular activities. They are more likely to interrupt their studies, mainly for financial reasons and because of work. The achievement was not affected by students' social status indicators such as parents' educational attainment or labor market position; it is contact with faculty and performing work related to studies that have the most explanatory power.



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1. Introduction

The issue of combining studies with work has been addressed in the international literature on education research for decades [1–6]. International research on the effect of student work on academic achievement has produced inconsistent results, and Hungarian research on the subject is scarce. Our research aims to contribute to the discussion of this question by providing a comprehensive cross-sectional study of students' work characteristics and the impact of paid work on their university careers at the most populous Hungarian university outside the capital.

1.1. Student Work in the Literature

The literature differentiates between the definitions of student employment and student work. While the former underscores earning income, the latter focuses on competence and personality development, raising student work to a higher value dimension [7]. On the other hand, the literature also points out that student work could amplify social inequalities and increase the risk of attrition by hindering students' integration into the university community and culture [8].

Students' families' social status plays a decisive role in the type of work they choose to do and in the way that working affects their academic achievement. Students from favorable backgrounds can select jobs that align with their fields of study and help them



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gain relevant experience. Unequal access to such jobs can reflect inequalities in academic achievement as well as in labor market opportunities [9]. The frequency, motivation, and type of student work is linked with students' socioeconomic characteristics [10,11]. Research to date has found that as the level of parents' educational attainment rises, the likelihood of doing paid work alongside studies diminishes [2,4,12].

1.2. Double-Edged Sword

Student work is a “double-edged sword”, with both positive and negative consequences [13], which is why it is an important research objective to clarify the roles of various target groups and the influence of circumstances. In recent years, equipping students with practical knowledge and preparing them for working life have become priorities in higher education (see the strengthening of work-based learning in education) [14,15], but domestic research has been inconsistent as to whether student work is to be regarded as a complement to university education or a predictor of attrition.

It is a subject of debate whether student work has a positive or negative effect on students' careers. Some researchers emphasize that different types of jobs such as those related and unrelated to students' fields of study or “on-campus” and “off-campus” jobs all have different effects on academic achievement, the skills acquired, and social capital [1,3,16–18]. It is the task of education research to analyze the influence of various types of student work on students' careers and academic achievement. Our research provides a complex study of paid student work and its impact on students' learning outcomes.

Student work has an identity-building role, strengthens commitment to studies, and can have a positive impact on academic careers and subsequent labor market performance [4,19]. An additional benefit of working while studying is the enrichment in the network of contacts [12,20,21], and through employment, students acquire generic and transferable skills that are particularly important for entering the labor market. These skills are becoming increasingly important, as they contribute to positive outcomes in the areas of employment, job performance, income, and entrepreneurial success [21]. Digital and interpersonal skills will be perceived as necessities by employers by 2030 [22]. These findings highlighted the dominance of digital and interpersonal skills. The soft skills most favored by employers included interpersonal skills, communication, critical thinking, and problem solving, but they also often expect the following skills: responsibility, flexibility, value orientation, leadership, teamwork, a positive attitude, and enthusiasm [23]. Students who worked alongside their university studies showed a greater awareness of employability than those who did not work during their studies [24]. Previous research has shown that intensive work reduces the time spent on learning, and thus may increase the risk of dropping out. Even average, non-intensive work has detrimental effects on achievement and may even deepen inequalities between students [25]. Previous research has identified different thresholds that can negatively affect academic performance. Some studies suggest that working as little as 8 h per week [26]—while others suggest that working more than 25 h per week—can have negative consequences [27].

Previous research on student achievement has shown [28,29] that in addition to students' sociocultural and demographic characteristics, religiosity, and the resources gained from university relations can have a significant impact on student achievement. Research has shown that students' gender [30] and indicators of social status are important explanatory factors for students' engagement in their studies. The more modest the student's financial and intellectual background, the more difficult it is for them to integrate into the world of higher education and remain committed to their studies [31,32]. Supplementing income may come primarily from work, which can be a barrier to persistence and integration into university culture [4,30,33].

1.3. Hungary's Situation

Previous domestic research did not help us reach valid conclusions, as most of it either applied the viewpoints of other disciplines, mainly economics, or investigated student

work at the peak of, or in the years immediately following the peak of, higher education expansion [34–38]. Eurostudent surveys analyze the features of paid student work and students' socioeconomic backgrounds in great detail [10,39], but ignore such relevant areas as the influence of work on intergenerational and intragenerational embeddedness in social networks at universities, on the perception of competence development, on attitudes to extracurricular activities, as well as on academic and career plans.

Previous research has explored the impact of student work on persistence and academic performance in STEM fields. IT training provides more resistance to the negative effects of employment than other training, as students working in this field did not differ from their non-employed peers in terms of either persistence or academic progress. Concerning science, engineering, and non-STEM training, employment had a significant negative effect on academic performance, but it was primarily compensated by being employed in study-related jobs in science training, which also had a favorable effect in non-STEM training courses. However, in the field of engineering, employment in the profession reinforced this adverse effect too. In the field of IT, study-related work also had a negative impact [40]. Our previous research has shown that working students were mainly involved in extracurricular activities that may be relevant to their exit from the labor market. In contrast, non-working students had achievement indicators that were specifically useful during their university years. However, research has confirmed that working while studying has a positive impact on performance [41,42]. Hungarian research on progression in higher education revealed three distinct clusters of students: traditional, standard pathway, postponing/passivating pathway, and correcting (e.g., fee-paying; institution and/or faculty changing) pathway. Students with a traditional, standard pathway have a learning pathway that meets the standards of the sample curriculum, while correcting students are those who have transferred to a fee-paying mode or changed degree programs or institutions at least once during their studies. Postponing/passivating students, on the other hand, interrupted their studies at least once. Correcting students worked more often than those on the traditional, standard pathway, but less often than students on the postponing/passivating pathway [43]. Previous research has shown that students who took a job due to financial constraints, who were disappointed with their university education, or who were not aware of the labor market outcomes of their chosen education had increased risk of dropping out. The attractiveness of the labor market can be significant, especially if students can find a well-paid job without a degree [11].

Our current study used data collected in a doctoral research project about student work [44]. As a first step, we built a thematic database suitable for secondary analysis, and then conducted primary data collection. The secondary analysis of thematic data from the databases of the CHERD-Hungary, which had been regularly surveying students in the northeastern region of the country. We used three databases for the secondary analysis (data collection in 2012, 2015, and 2019). The secondary analysis revealed that student work became increasingly widespread over the years. Whereas in the 2012 sample, one-third of students did paid work, in 2019, over half of them did. Data from 2012, 2015, and 2019 equally confirmed that participation in a master's course was an influencing factor. In two of the samples, parents' level of education and families' subjective financial status were also found to have significant explanatory power. In examining academic careers, we found that contact with faculty and study-related work had the most explanatory power. This sample included both working and non-working students, and no significant differences in academic performance were found. In the primary research, we only investigated working students, partly because there is no research in Hungary that specifically investigates working students, and partly because our aim was to investigate the characteristics of employment in as much detail as possible [44]. These objectives justify our sample. We present the results of this primary research in our current study.

2. Materials and Methods

Students combining work and study are seen as a hard-to-reach group in higher education. The subject of our study necessitated conducting quantitative research, as our aim was to develop a fully comprehensive picture of the work characteristics of students in higher education. Previous international and national studies were not representative of students in work and were not suitable starting points for our sample. This set the stage for our research questions, which focus on student work characteristics, and on how student work is related to the demographic, social, and institutional background of students. A further research question was how work affects the academic achievement and commitment of students.

Based on the analysis of the literature and previous research findings, we formulated the following hypotheses:

H1. *Based on previous studies [6,9,44], we assume that the dominance of those whose motivation to work is rooted in postmodern value systems and attitudes to work is increasing in contrast to the various groups of students who work out of financial necessity or to gain work experience as part of their career planning.*

H2. *Based on previous research [4,8,44], we hypothesize that study-related work and work experience gained at a workplace have a beneficial effect on students' academic achievement and commitment to their studies.*

2.1. Sampling

Information on respondents' higher education institutions was not available in the Eurostudent surveys, and there were neither institution nor degree variables included in the national Graduate Career Tracking System research databases. Also, the National Tax and Customs Administration and social security registers may only have data on a subset of employed students, but these data are not available to researchers either. Thus, we did not have data on the population to be used as a sampling frame.

To determine the sample size of the primary research, we used the institution's publicly available data on full-time students in Hungarian-speaking programs at the university in March 2019 and conducted quota sampling based on the distribution of students by field of study. Although quota sampling is not a probability sampling method, it is the most likely to match the population examined. The sampling, which started in the first semester of 2019/2020 and ended in April 2020, targeted full-time students who worked regularly during semesters (including exam periods) in the academic years 2019/2020 and 2020/2021. The final size of the (L)earing2020 database was 538 after we had screened out those who refused to respond or gave invalid responses.

2.2. Participants

The sample comprised 538 working students attending higher education institutions in Hungary. Most of the students (61.2%) were enrolled in a BA/BSc program, 5.9% in an MA/MSc program, and 31.8% of them in an undivided program; 58.6% of them were female. Most of the participants were state-funded students (85.4%); 21.8% of them were studying health and welfare, 36.2% STEM (science, technology, engineering, and mathematics), 19% business, and 23% arts, humanities, and social sciences.

The students' ages ranged from 18 to 29 years old. Looking at the educational level of the students' parents, their fathers mainly had primary (37.9%) or secondary education (35.2%), with 26% of fathers having higher education. Mothers were more likely to have a secondary school qualification (39.9%) and a university degree (39.1%).

2.3. Measures

A wide range of measures, including adapted question blocks, was used. The characteristics of student work were investigated using question blocks developed in-house or adapted from other studies. We examined the frequency of work during semesters, exams, and holidays (1: does not work; 2: works weekly/monthly); the relationship between work and studies (1: the work mostly/always fits the studies; 2: the work does not fit the studies); the number of hours worked; and motivation to work [6,10,11]. Cluster analysis was carried out based on these variables to characterize working student groups.

In order to overcome the shortcomings of the previous analyses, a complex achievement indicator was developed based on the literature, with the following domains and measurement indicators: To refine the academic achievement index, the components were carefully weighted based on their significance in prior studies and internal consistency tests (Cronbach's alpha). Regression analysis was used to investigate how different variables affect both the likelihood of student work and academic achievement. For the regressions, the variables were coded as bivalent. The ordinal and continuous variables should be coded as dummy variables in the logistic transformation if they are to be included in the regression analysis, so that the odds ratios obtained in the analysis can be interpreted appropriately (e.g., how much does the value of the explanatory variable 1 increase or decrease the odds of working) [45]. In our study, binary and dummy variables allowed for us to focus on whether students exhibited particular traits, such as engagement in extracurricular activities or possession of specific competencies, rather than the degree to which these traits were present. While we acknowledge that this approach involves trade-offs, such as the loss of nuanced information regarding the intensity or degree of certain behaviors, the benefits of simplification were deemed to outweigh these limitations. Specifically, the binary classification facilitated more straightforward interpretation of the results and allowed for easier communication of findings to a broader audience.

The first achievement indicator was students' persistence to their studies. When measuring commitment to and persistence in studies, we relied on previous findings and compiled the question set using the indicators they had developed [11,28,33]. The indicators related to academic achievement as well as to the importance attached to studies, determination to graduate, and efforts to achieve better were also adapted from previous studies. The degree of intensity of persistence was given by the values of the responses, consisting of four elements (4-point Likert scale ranging from strongly disagree (1) to strongly agree (4)): I would like to achieve the best academic results possible; I will do my best to attend lectures and practices; My current study will be useful in my career; I am very determined to finish my studies (Cronbach's alpha: 0.841). These were collapsed into a dummy format (strongly agree and agree = 1; otherwise = 0) [46,47].

The second achievement indicator was study engagement, which is measured using several variables. From the previous questionnaire [11,44], the questions on engagement indicators were adapted, which were answered in a Likert scale from strongly disagree (1) to strongly agree (4): I am able to study when I have more interesting things to do; I finish the tasks on time; I can prepare for exams; I am able to pay attention in class; I usually attend lectures; I usually attend seminars/exercises (Cronbach's alpha: 0.844). These were collapsed into a dummy format (strongly agree and agree = 1; otherwise = 0).

The next achievement indicator was academic performance [8]. We analyzed the academic average of the students (divided into below-average and above-average categories), the students' scholarship and talent management (participated or not), and the students' extracurricular activities (e.g., university research group membership, lecture or poster presentation on a conference, publication, merit scholarship, language exam) (participated or not) (Cronbach's alpha: 0.851).

The fourth achievement indicator was the existence of skills that are considered important for life and work (communication, teamwork, problem-solving, responsibility, etc.). Previous research has shown that student work shapes identity and, regardless of the type of work, contributes to the development of soft skills and to forming work value

preferences. In addition, work endows students with so-called transferable skills. We explored students' perception of their work competence development using variables developed in-house. Different competences were listed, for which the students decided whether they had strengthened the competence during work (dummy variables: yes or no). It should be emphasized that we did not make a competence measurement, but the students' perception of competence development was analyzed (Cronbach's alpha: 0.825).

The next two outcome indicators, students' social activism/community membership and moral awareness, were examined using variables from previous research. Elements of social activism/community membership: participation in denominations, student council, sports clubs, orchestras, or charities. These were dummy variables (yes or no). Moral awareness was measured by the following statements: It is acceptable to buy a thesis for money, and it is acceptable to bulldoze it regularly. It is acceptable to study only for a scholarship, to skip classes, to strive for thorough knowledge only in subjects of interest to me, to take over other people's texts without reference, and to take a degree without any real academic achievement. These were dummy variables (agree or not) [28,46].

The sixth dimension, moral awareness, was measured by the following statements: regular cheating at university—if a student plays truant from school or evades lessons; uses or borrows the texts of other authors without reference; lies if he or she cannot hand the task in on time; uses books or notes at exams in an illegal way; has somebody write their essays, and thinks if the cheating is revealed, it is only bad luck. The student's opinion on academic values were answered on a Likert scale from strongly disagree (1) to strongly agree (4) [46]. These were collapsed into a dummy format (strongly agree and agree = 1; otherwise = 0).

The seventh outcome indicator was plans for the future, which included plans for further education or work in the labor market, as well as the existence of work values. These were binary variables developed in-house (Cronbach's alpha: 0.814).

To achieve a single and complex indicator of academic achievement, we used the seven variables mentioned above, which were transformed into an index.

2.4. Data Analysis

Aims of the research, the anonymous nature of responses, and confidentiality considerations were indicated. Participants completed a paper-based questionnaire. For the analysis, we applied descriptive statistics, Pearson correlation coefficients, cluster analysis, and logistic regression. Our primary focus was on the impact of performing paid work on student careers, which was explored through logistic regression analysis. We created binary explanatory variables in order to facilitate the interpretation of odds ratios, which allowed for us to involve continuous and ordinal variables in the regression analysis [45].

We considered it important to create a complex achievement indicator that would allow for us to look more comprehensively at student performance. We created binary (0—no; 1—yes) variables for each of the items belonging to the previously described dimensions of achievement (persistence, engagement, etc.) and then added them together to create an index. First, we examined the degree of correlation between the seven achievement indices, which we tested using Pearson correlation (Table 1). The correlation results showed that there was no or very weak correlation between moral awareness and social participation and the other outcome indices. Consequently, the table shows the results of the Pearson correlation for the four most correlated achievement indicators, which were subsequently used to form a complex index. This complex achievement index will be used for further analysis.

Table 1. Correlation for the most correlated achievement indicators.

	Persistence	Engagement	Competence	Achievement
Persistence	1.000	0.545 ***	0.162 ***	0.220 ***
Engagement	0.545 ***	1.000	0.179 ***	0.242 ***
Competence	0.162 ***	0.179 ***	1.000	0.036 **
Achievement	0.220 ***	0.242 ***	0.036 **	1.000

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$; n varied between 359 and 538.

3. Results

3.1. Characteristics of Student Work

The first step in the analysis of the (L)earning 2020 database was to conduct cluster analysis. It has been described in the literature that the group of working students is heterogeneous, with different motivations and backgrounds, but often only students working for financial reasons and to gain experience were distinguished [16,40]. We created student clusters based on the most typical work indicators. An important indicator of student work is the relationship between study-related work and the study itself. It is considered important in the literature because study-related work has a positive impact on a student's academic career and subsequent job placement [12,20,48–50]. The other indicator was motivation to work. The previous national literature defined the group of working students based on these two indicators and did not take into account the number of hours worked or the diversity in motivational factors. This cluster analysis would contribute to a more comprehensive understanding of the characteristics of student work.

The first indicator is the relationship between work and study; 34.23% of students had jobs that were mostly connected to their studies, while 65.8% of respondents had jobs that were in no way related to their studies.

The second indicator included in the cluster analysis was the motivation to work. Respondents were asked to decide whether or not nine motivational factors played a role in their work. When looking at motivation to work, it was found that the majority of respondents were motivated by the need to fund leisure activities and to be independent from parents. The third most important motivating factor was to gain work experience, followed by working for a living. Of the total, 53% of students also worked because they wanted to spend their free time doing something meaningful, but a third of working students were also motivated by making new friends and having career ambitions. The least significant factors were funding tuition fees and the desire to support someone financially. Other categories included motivational factors such as learning a subject or achieving a goal. Some students worked because of starting a family, future plans, or because they wanted to enroll in their master's program while already working. However, there were also students who said that they took a job because they were bored and started working, and some said that their job was their hobby, and that they enjoyed working.

The last indicator we used was for work intensity. The number of working hours, used to cluster the intensity of work, is significant in terms of how much time the student is willing or forced to spend working. In our current study, we included students who worked during the semester, so the hours reported can be interpreted as a function of this. From our results, we can see that the majority of the respondents (51.6%) work 1–16 h per week, while 18.3% work up to 20 h per week; 12.4% of the students surveyed work 31 h or more. In the cluster analysis, we defined work intensity as working more than 21 h per week.

Three clusters emerged, namely, disadvantaged/income-oriented, ambitious, and utilitarian/leisure-oriented students Table 2. The final element numbers of the clusters were 123, 242, and 173. Gaining work experience, financing leisure activities, and being independent from parents were characteristic of all three clusters.

Table 2. Clusters based on work characteristics (cluster center data).

	Disadvantaged/Income-Oriented	Utilitarian/Leisure-Oriented	Ambitious
Study-related work	1.92	1.90	1.11
Working hours	1.41	1.91	1.60
To gain work experience	1	1	1
Career ambitions	2	2	1
To cover living costs	1	2	1
To be independent	1	1	1
To cover tuition fees	1	2	2
To finance activities	1	1	1
To make new friends	2	2	2
To support others	2	2	2
Meaningful free time	2	1	2

Note: Variables included in the model are coded as follows: Has study-related work: 1—yes; 2—no. Number of working hours: 1—intensive work; 2—moderate work. Coding of motivations for working: 1—motivated; 2—not motivated. (L)earning 2020 database.

The disadvantaged/income-oriented cluster consists of students who are most motivated by material needs. They are motivated by subsistence, funding programs, gaining experience, and independence from parents, and only in their case did funding tuition fees appear as a motivating factor. However, these students are not motivated by leisure and career aspirations, and therefore their work is not related to their studies.

The group of utilitarian/leisure-oriented students consists of working students whose work is not related to their studies and who work the least. However, their work plays no role in their livelihood. They do not work because of financial difficulties. As in the other two clusters, these students are motivated by independence from parents, gaining experience and funding programs, but they are mainly motivated to work because they want to spend their free time in a meaningful way.

The ambitious cluster includes students whose work was regularly linked to their studies, but they worked at medium intensity compared to the other two clusters. Apart from gaining work experience, this group is the only one with a specific career goal. They are also motivated by the need to finance leisure activities and earn a living, too.

The frequency, motivation, and type of student work is linked with students' socioeconomic characteristics [10,11]. Consequently, the social and institutional background of the students was analyzed. The results are summarized in Table 3.

The analysis is consistent in that working students do not constitute a homogeneous group, as both their backgrounds and motivations are complex. However, students who struggle with everyday financial problems are still present in this group, as doing paid work is the most obvious way for them to secure an income.

According to the literature, students from less favorable economic, social, and intellectual backgrounds are less committed to their studies, as they have more difficulty in integrating into university culture due to a lack of cultural assets than young people from more favorable sociocultural backgrounds. The lack of material assets is often compensated by the income they earn from student employment. Students with a more favorable financial background are less likely to work while studying, and if they do work, they are more likely to do work related to their studies, as they are not working out of (financial) necessity [16,31,32]. Gender roles also have an impact on further education plans and on an individual's academic progress and performance, with some findings showing that women have higher graduation rates than men [30]. Based on the literature, the demographic, sociocultural, and institutional background of the students was analyzed to determine how these factors influence the frequency of work (working regularity: weekly, monthly, or not) (Table 4). A logistic regression analysis was used to examine the factors influencing students' work according to demographic (gender, age, place of residence, and religion), social (parental education and labor market status of parents), economic (subjective and

relative financial status), and educational characteristics (level of education, funding, and field of study). Only independent variables with significant explanatory power ($R^2 = 0.075$, $F = 12.744$, $p < 0.001$) were included in the stepwise model.

Table 3. Sociocultural and institutional background of working students.

Variables		Disadvantaged/ Income-Oriented	Utilitarian/ Leisure- Oriented	Ambitious	<i>p</i>	χ^2
Subjective financial situation	I have everything needed and can afford large expenses	32.4	39	42.2	0.036	13.455
	I have everything needed but cannot afford large expenses	59.3	<u>59.2</u>	54		
	I have occasional problems covering daily expenses	<u>6.5</u>	0.4	3.1		
	I have regular problems covering daily expenses	1.9	1.3	0.8		
Relative financial situation	Much better than average	2.8	4.4	5.6	<0.001	29.055
	Slightly better than average	14.7	<u>31.1</u>	21.7		
	Average	64.2	61	62.1		
	Worse than average	<u>14.7</u>	3.1	8.1		
	Much worse than average	3.7	0.4	2.5		
Father's level of education	Primary education	<u>49.1</u>	34.8	35.2	0.031	13.856
	Secondary education	37.3	34.4	36.5		
	Higher education	13.6	29.5	27		
Mother's level of education	Primary education	<u>38.6</u>	14.5	17	<0.001	33.714
	Secondary education	39.4	39.2	43.4		
	Higher education	22	<u>46.3</u>	39.6		
Level of education	BA/BSc	<u>74.5</u>	62.1	53.8	0.003	13.877
	MA/MSc	5.5	3.1	10.6		
	Undivided program	20	34.8	36.6		
Form of financing	State-funded	72.6	<u>92.4</u>	85.5	<0.001	24.539
	Fee-paying	<u>27.4</u>	7.6	14.5		
Academic year	1st year	31.5	<u>37.4</u>	23	0.002	12.985
	2nd year	18	21.3	19.3		
	3rd year	<u>26.1</u>	14.3	19.9		
	4th year	20.7	<u>28.6</u>	<u>28.6</u>		
	>5th year	3.6	3.5	8.1		
Study field	Arts, humanities, and social sciences	<u>22.6</u>	17	<u>28.8</u>	<0.001	13.485
	Business	17.1	18.8	21.6		
	Health and welfare	22.5	<u>28.4</u>	12.7		
	STEM	37.8	35.8	36.9		
Age	18–21	44.6	<u>54.1</u>	30.8	0.003	59.356
	22–25	42.8	41.3	59.6		
	>26	12.6	4.6	9.6		
Gender	Female	61.6	61.6	51.3	0.174	6.353
	Male	38.4	38.4	<u>48.8</u>		

Note: For the underlined figures, the absolute value of the adjusted residuals is above 2.0.

Table 4. Variables affecting regularity of student work.

Predictors	B	S.E.	t	<i>p</i>
Age (>22)	0.311	0.061	5.101	<0.001
Primary education level of father	0.185	0.063	2.952	0.003
Health and welfare study field	−0.159	0.078	−2.051	0.041

Note: Coding of the variables included in the model: father's primary education = 1; age > 22 years = 1; health area = 1.

Our results show that students aged 22 and older and those whose father has a primary school qualification are more likely to be working. In contrast, the probability of work is lower if the student is studying in the field of health and welfare.

3.2. Academic Achievement

Some of the research on student outcomes in higher education takes a negative approach to student outcomes, looking at drop-outs, passive semesters, overstaying, and transfer to fee-based programs [11,43]. The negative scenario of students' academic career is also examined in terms of interruption of studies and changes in financing.

When looking at the whole sample, we find that 9.7% of the respondents had already interrupted their studies during their years of higher education. Among students who had interrupted their studies, lack of motivation and frustration with university education, employment, and financial difficulties were cited as reasons for dropping out. It should be stressed, however, that only a tenth of the students were affected by interruption of studies; thus, no clear conclusions can be drawn from the reasons given. The characteristics of clusters in terms of study drop-out was examined: 21.8% of students in the disadvantaged/income-oriented cluster had already interrupted their studies ($p < 0.001$, $\chi^2 = 52,451$), while students in the other two clusters were less affected by interrupting their studies (in contrast to the other two clusters: utilitarian/leisure-oriented 7.8%; ambitious 1.9%). A significant correlation was found for two of the reasons listed. Students in the disadvantaged/income-oriented cluster were overrepresented in that 6.4% of them interrupted their studies due to financial difficulties (in contrast to the other two clusters: utilitarian/leisure-oriented 1.3%; ambitious 1.9%), while 9.1% interrupted their studies due to work (in contrast to the other two clusters: utilitarian/leisure-oriented 0.9%; ambitious 1.9%). Our findings parallel previous research [11,43] showing that dropout due to financial and employment reasons is common and students who have a disadvantaged family background in addition to their difficulties are at particular risk.

The variables influencing the complex achievement indicator were identified based on the literature. Linear regression was used to investigate which demographic (gender and religion), sociocultural (own and family financial situation; parents' education), institutional (field of study, funding, and form of education; contact with faculty and students) and work-related characteristics (work during the semester, study-related work, and intensity of work) influence student achievement index (Table 5).

Table 5. Factors affecting complex student achievement.

Predictors	B	S.E.	t	p
Interactions with lecturers	2.246	0.445	5.050	<0.001
Study-related work	1.713	0.435	3.941	<0.001
Gender	−1.848	0.430	−4.292	<0.001
MA/MSc	1.955	0.777	2.516	0.012
Subjective financial situation	3.090	1.280	2.414	0.016
Workplace	1.893	0.829	2.283	0.023

Note: Variables included in the model are coded as follows: subjective financial situation: 1 = average and above average; gender: 1 = male; education level: 1 = MA/MSc; interactions with lecturers: 1 = strong; study-related work = 1; positive workplace = 1.

Only independent variables with significant explanatory power ($R^2 = 0.231$, $F = 14.039$, $p < 0.001$) are included in the model created using the stepwise method. The stepwise method systematically adds or removes predictors based on their statistical significance, which helps in refining the model by including only those variables that significantly contribute to explaining the dependent variable. This method ensures that the model is not overfitted with too many variables, which might not actually have a meaningful impact [45]. The use of stepwise regression is particularly useful in managing potential multicollinearity among predictors, further strengthening the reliability of the results. This approach helps in focusing on the most important factors influencing student achievement,

as shown by the predictors that remained in our model. By doing so, the model reduces the risk of including irrelevant or redundant variables that could obscure the true relationship between study-related work and academic achievement. As the values in the table show, among the variables included, parental education, labor market, and financial status have no influence on the achievement of the students in the sample. Among the characteristics of the students' financial background, only their own subjective financial situation has explanatory power. If students are more affluent, our indicators suggest that they are more likely to be more successful. Of the demographic variables, gender is the only one that has an influence. The age, housing situation, or religiosity of the students does not have an effect. Of the institutional characteristics, only participation in a master's program has explanatory power in the model. However, the relationship and interactions with lecturers have a significant impact on students' achievement in higher education.

Among the characteristics of work, neither working during the semester nor the number of hours worked had an effect on achievement. In the sample, study-related work had a positive effect on performance. Thus, whether or not work is related to studies is a more important factor than the fact and intensity of work. This suggests that the benefits of work related to studies are also significant within the university walls. Another important and new result of the linear regression is that the work environment also has an impact on the performance of working students. This may be due to socialization at work and the skills and competences acquired through work. The impact of work on academic careers was examined among students in one of the Hungarian higher education institution, so the results are not generalizable, and the generalizability of comparisons is limited, so the conclusions are only drawn for this sample.

In response to the concerns about potential bias in our model due to causal relationships between explanatory variables, we have taken several steps to ensure that our findings are unbiased. Firstly, we reran the regression analysis including parental education, work type, and other socioeconomic variables as controls, even though they were not initially significant in the stepwise model. This approach ensures that the effect of study-related work on academic achievement is not confounded by these variables. The same variables were selected by running both methods, and study-related work consistently appears as a significant predictor in both models; this strengthened the evidence for its impact. Student clusters were not included in the regression analysis as an explanatory variable, as the cluster was also constructed from the characteristics of student work. However, a post-hoc test was used to investigate the differences between clusters along each of the variables (persistence, engagement, competence, and achievement) that make up the complex achievement index. The results of the post-hoc test (Tukey) showed that there were significant differences between the clusters in the index of competences acquired and developed in the work and the index of academic achievement. For the index of perception of competences, there is a significant difference between all three student clusters according to the post-hoc test ($F = 16.47, p = 0.001$). A significant difference can be observed between the disadvantaged/income-oriented and the ambitious cluster. The ambitious cluster is the only cluster characterized by working for professional ambitions, and their work is related to their studies, so that the development of competences while working is the most characteristic for them. There was also a difference between the clusters for the academic achievement index ($F = 3.35, p = 0.036$). The disadvantaged/income-oriented and the utilitarian leisure oriented clusters are not significantly different, but there is a significant difference between the disadvantaged/income-oriented and ambitious students. Our results show that disadvantaged/income-oriented students have fewer scholarships, lower GPAs, less involvement in extracurricular activities, and less extracurricular responsibilities. These data may be related to several characteristics of needy, demand-oriented students, who work the highest hours, are less satisfied with their time, and are overrepresented in the proportion of students who would like to devote more time to their studies.

By utilizing multiple methods, we ensure that our conclusions are not method-dependent, thereby strengthening the evidence for the impact of study-related work on

academic outcomes. While the analysis includes a comprehensive set of variables, it is acknowledged that some relevant factors may not have been measured or included. To address this, future research could incorporate additional controls or utilize alternative methods (e.g., instrumental variables) to further mitigate potential omitted variable bias.

4. Discussion

Compared to previous research, our results prove to be novel in several respects. Our most important finding is related to student clusters, which are clearly distinct from one another and display significant differences in background variables. Most researchers in Hungary classified students by the horizontal alignment of work. Some studies established student clusters based on motivation without involving any other variables [16,39,51]. We considered the number of working hours, motivational factors, and horizontal alignment alike, and the resulting clusters were clearly distinct from one another.

The first hypothesis presumed that student groups which adopted postmodern views on student work were gaining significance over the other two distinct groups—those who worked out of financial necessity and those who aimed to gain work experience as part of their career planning. In that (L)earning 2020 sample, attempting to create student clusters based on three variables (motivation for work, alignment of work with studies, and number of working hours), we separated three distinct student groups: disadvantaged/income-oriented, ambitious, and utilitarian/leisure-oriented. Disadvantaged/income-oriented students mainly work for financial reasons to raise funds for self-sustainment, tuition fees, leisure activities, and to become (financially) independent of parents. They work a large number of hours, mostly at weekends but also on weekdays; their work is not related to their field of study; and they are not content with their work/study balance. Students whose parents have low educational attainment and have slightly below-average financial status are overrepresented in this cluster. Regarding institutional background as well as intergenerational and intragenerational social networks, the proportion of tuition-paying bachelor's students who have very little contact with faculty is relatively high in this cluster. Ambitious students typically work fewer hours than their peers in the previous group, and this is the only cluster whose members work to fulfil their professional aspirations. They are also the only group in which work is related to studies. As such, they try to strike a balance between the two areas and are entirely content with their time schedule. During job search, they prefer relying on their connections and the university student career office rather than traditional student job centers offering typical student jobs. In this group, master's students are overrepresented. Regarding interaction with faculty, this cluster has the most extensive network. The third, newly emerging group of the 2020 sample is a very clear-cut one, distinct from the other two. Neither financial necessity nor career building are dominant motivators for work. Instead, this utilitarian/leisure-oriented cluster is the only group whose members work because it is a useful way of spending leisure time as well as an opportunity to obtain money for other free-time activities. Their work is not related to their field of study, but they are still satisfied with their time schedule, the reason for which might be that they are not forced by circumstances to find work. Those whose living standards are above average are overrepresented, and the proportion of the 18–19 age group is also somewhat higher in this cluster. Previous findings in Hungary have mostly found that students with less favorable financial circumstances work more and that family background has a significant impact on the likelihood of student work [9,11], and mostly only students with financial difficulties and those who gain experience have been distinguished [39,51]. Our results show that individual and institutional characteristics are becoming increasingly important in the likelihood of student work. The clusters that emerge confirm the findings of youth research [52–54], which, in the context of the formation of value orientations, have indicated the emergence on the labor market of young people who prefer the current hedonistic, experience-seeking, postmodern values (experiences, varied life, present moment, and flexibility). The acquisition of material values is less and less a life goal for the younger generation of modern societies, so work is not just a means of

earning, but a meaningful activity in which individuals can learn about themselves and develop their own way of life based on enrichment of wellbeing and self-expression [55]. In addition to the more modest sociocultural backgrounds of the income-earning and -oriented (in our interpretation: disadvantaged/income-oriented) group and the career-building, practice-gaining, and reference-gathering (ambitious) group, the postmodern value system and the postmodern student's conception of work (work as a way of spending leisure time "usefully"—utilitarian/leisure-oriented) have emerged and are coming to the fore.

According to the second hypothesis, study-related work and work experience gained at a workplace have a beneficial effect on students' academic achievement and commitment to their studies. Recent research in the region has also shown that looking only at students' extracurricular activities and GPA does not provide a comprehensive picture of student achievement [11], but we found the same result in our previous research, which also examined the impact of work on academic careers along these variables [44]. In order to overcome the shortcomings of the previous analyses, a complex performance indicator was developed based on the literature, with the following domains and measurement indicators. Therefore, we explored the academic achievement of higher education students, we identified seven dimensions during the analysis (persistence, attention devoted to studies, academic achievement, perception of competence development, social activity, moral awareness, and future plans). Due to the results of Pearson's correlation, the complex achievement index was constructed from the variables persistence, attention devoted to studies, academic achievement, and perception of competence development, to be used for assessment in the clusters of student employees.

With the help of the achievement index, we detected further differences between the student clusters, especially between the disadvantaged/income-oriented and ambitious ones. Students in the disadvantaged-income oriented cluster are less likely to receive grants, have high academic scores, take part in extracurricular activities, and undertake extra tasks. They are more likely to interrupt their studies, mainly for financial reasons and because of working. Eurostudent surveys analyze the features of student work and students' socioeconomic backgrounds in great detail [10,39] but ignore such relevant areas as the influence of student work on intergenerational and intragenerational embeddedness in social networks at universities, on the perception of competence development, on attitudes to extracurricular activities, as well as on academic and career plans. Our final analysis focused on the factors that affected the complex achievement index. We found that the index was not affected by students' social status indicators such as parents' educational attainment or labor market position. In our model, it is contact with faculty and doing work related to studies that have the most explanatory power. These results are in line with our recent findings on the positive effects of study-related work [44], and that in some STEM study fields, the potential negative effects of student work were counterbalanced by students taking on study-related work. This also had positive effects in non-STEM fields [56]. Furthermore, our results support the finding [11] that contact with lecturers not only prevents dropouts but is also a significant factor that supports student career progression.

5. Conclusions

What makes our findings remarkable is that they clearly demonstrate that working students do not constitute one homogeneous group. The cluster that can be regarded as the greatest novelty that of utilitarian/leisure-oriented students, who work because they would like to spend their leisure time in a useful way, are not motivated by self-sustainment, and are the group of students who work least. It is an important finding that the three motivation-based student clusters differ markedly in almost all the social background indicators examined, and there are also a number of significant differences in demographic and educational characteristics. Our results support the hypothesis that working students comprise a heterogeneous group. Our findings make it necessary to discard the stereotypes about working students, namely, that only low-achieving, low

socioeconomic status students do paid work in order to provide for themselves. It is a significant new finding that student work in itself does not have a major effect on academic achievement, but doing work related to studies does.

The novelty and key message of the empirical part of our thesis lies in the following: large-sample studies on student work do not give a comprehensive, generally valid picture of this phenomenon whether they are institutional, national, or international surveys. Our empirical results not only pose further questions for future research but also serve as feedback for the institutions concerned. Complementary use of longitudinal institutional surveys and cross-sectional studies targeting only working students is a methodological achievement of our analysis.

One of the limitations of this study is that we could not reach the full population of working students. Our sample is not representative and does not allow for general conclusions, which is why our study can be classified as problem formulating, fact-finding research. The results only apply to students at the examined university. Furthermore, the data on competencies are based on the perception of the respondents without any actual measurement, so it appears to be logical that they consider working as a good investment in order to reduce cognitive dissonance. Participants may provide responses they believe are more socially acceptable or favorable rather than being truthful. This can lead to over-reporting positive behaviors or underreporting negative ones. Participants may not accurately remember past events or behaviors, leading to inaccurate self-reports, particularly if the assessment involves long-term recall. Individuals may not accurately assess their own abilities or achievements. For example, students may overestimate their academic skills, or professionals may underestimate their competencies. Personal perceptions may not align with actual performance or behavior. Some research draws attention to the fact that students can find it difficult to perceive and articulate their skills (see [57]), and the young generation have an unrealistic level of confidence and demonstrate a level of arrogance in their expectations of their skills and employability (see [58]). Due to the lack of comparative data, it is not possible to confirm whether the students experienced any development during their work, but our results do encourage further research on this subject. In order to facilitate research on the academic achievement and career advancement of working students, it would be useful if electronic student registers included data on labor market activity alongside personal data, which could provide institutions with adequate information on student work rates. Research relying on self-assessment faces limitations like response bias, lack of objectivity, and cultural differences, which can affect the validity of findings. To mitigate these issues, future research should use mixed methods, combining self-assessment with objective measures such as performance tests and peer evaluations. Triangulation, incorporating multiple data sources, and longitudinal designs can enhance reliability. Alternative methods, such as peer feedback and performance-based assessments, should also be considered to provide a more comprehensive understanding of the studied phenomena.

Further research is needed to explore the factors that influence the academic progress of working students. A longitudinal study would appropriately serve this purpose, but it may also be complicated to carry out because of the difficulty of reaching working students. It should be taken into account that doing paid work can have different impacts on students' university careers even within different faculties of the same institution. Future research should therefore apply qualitative methods apart from quantitative ones, which could add granularity to the analysis, making it easier to identify hidden mechanisms and subjective factors that we have not had the opportunity to analyze in the present study. These factors could contribute to a more accurate picture of the nature and importance of student work as well as its impact on student careers.

As our findings are suitable for supporting institutional decision making, we highlighted some key areas and made recommendations based on our results.

Universities should play a role in providing students with comprehensive information that can help them to be aware of the risks and benefits of student work. Whether through

lectures or elective courses, it would be beneficial to provide students with information on how to maintain a balance between their working and student lives, their study, and work commitments. Through a series of programs, podcasts, and professional days, students can share with their peers their own strategies to overcome the difficulties of combining work and study or to get through a learning crisis. Regular information can help to make them aware of the difficulties, risks, and opportunities of student work. The best way to reduce the negative consequences is to increase the support of dual courses and to increase the availability of company collaborations and internships. A common solution in international practice is to work on campus, which would provide an ideal alternative in terms of income and institutional integration. Student jobs that fit the profile of university departments would provide a good opportunity for students to participate more actively in the life of the university, gain work experience, and have their work recognized with some type of compensation. College and home-office work may also be an option, but young people find it harder to find these opportunities without external help, and the low proportion of students who go to a career agency is confirmed by our previous research, too. Students' university careers are greatly influenced by their relationships with faculty and their experiences at the institution. The research data also show that involvement in university life and interactions with teachers can serve as a protective factor against poor academic performance. The results presented in the empirical chapter also confirm that the role of and interaction with lecturers is a key factor in students' academic careers and can even compensate for the negative effects of working. Our data show that it is precisely students who have minimal contact with their tutors, are excluded from the university because of more intensive working hours, and sometimes because of forced employment, who need the support and assistance of tutors the most. Our main suggestion is to encourage more varied and diverse programs and initiatives to strengthen the links between students and teachers. Some of these initiatives should be linked to professional development, whereby students who are hesitating in their studies or who are balancing between student work and a degree can receive help and support from their teachers. More informal professional programs can strengthen partnerships. In addition to networking, the professional knowledge of trainers is particularly important. It is also important for lecturers to keep up with their own field of expertise and the current needs of the labor market, as students working in jobs related to their studies may easily find themselves confronted with outdated knowledge from their lecturers. The monitoring of labor market trends in training courses must be given greater emphasis, and it is essential that trainers have up-to-date professional knowledge. There are many benefits to be gained from contacting labor market players and then working closely with them. In connection with the previous suggestion, learning about current labor market processes and specific activities could be achieved not only in class but also through various workshops. In addition to deepening contacts, it could also be possible to present open positions and jobs, where the respective workplaces could offer students the opportunity to work, even if only for a minimum number of hours. Referring to our previous findings, if students are dissatisfied with the quality of their education, or experience less support from their lecturers and are uncertain about their studies, it is possible that they may be driven by disillusionment with the less practical higher education towards labor market experience, which may act as a pull mechanism to move out of higher education. Students are at greater risk of dropping out if they work while studying, have learning difficulties, or are disappointed by the prospect of going on to higher education.

The survey data also demonstrate that involvement in university life can serve as a protective factor against deterioration in academic achievement, so initiatives to strengthen personal and professional relationships between students and faculty should be advocated. In addition to the importance of maintaining contact, the professional work and methodological approach of the instructors are also important. We believe it is important for instructors to also stay current in their own field and the current demands of the job market, as it can happen that students working in jobs related to their studies are confronted with the outdated knowledge of their instructors in the courses. In addition, it

is necessary to create an active learning environment aimed at developing soft skills and to give priority to the project method, cooperative methods, and problem-based learning. Changing the approach to teaching and broadening the culture of methods can help to spread student-centered teaching methods in higher education. Monitoring of changes in the labor market and contact with labor market specialists should be given a higher priority in training courses. In addition to deepening relationship building, employers could offer open positions, which would provide the opportunity to employ students, even with a minimal number of hours.

Our research is relevant because given the demographic and socioeconomic challenges and changes in the labor market, many students will continue to combine studies with work in the future, creating persistent challenges for higher education institutions. We believe our findings shed light on several areas of critical importance, which are to be considered and developed not only at the individual level but also in order to increase the prestige of higher education. Our recommendations can also strengthen the link between higher education institutions and the labor market.

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