

Studying and a part-time job: a double workload?

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Abstract

The purpose of this study was to investigate the relationship between part-time employment and academic success among university students in the Netherlands and to examine whether this relationship is moderated by age, gender, and being an international student. The study included 276 participants, 76% of whom were female. Data were collected using self-report measures. Using simple and multiple linear regression with interaction terms, it was found that part-time employment has a negative impact on academic success. No moderating effect of age, gender, or being an international student was found. These findings suggest that part-time employment may be a factor that contributes to lower academic performance among university students in the Netherlands. Implications for higher education institutions and policymakers, as strategies to support students who work part-time are discussed.

Keywords: part-time employment, academic success, age, gender, international students, university students in the Netherlands

Introduction

An increasing number of students in the Netherlands are working a part-time job in addition to their full-time higher education (Centraal Bureau voor de Statistiek, 2022). This development of part-time employment is attributed to the growing financial burden students must deal with, such as rising rent prices and tuition fees, and decreasing governmental support (Hunt, Lincoln, & Walker, 2004, Gwosc et al, 2021, Centraal Bureau voor de Statistiek, n.d.). Previous literature largely shows that there is a negative association between part-time employment and academic success in university students: students who work part-time tend to have lower grades and are more likely to experience academic difficulties compared to students who do not work (Tessema, Ready, & Astani, 2014, James et al, 2007). Engaging in part-time employment may decrease the time a student would spend studying, which subsequently lowers academic success (Salamonson, & Andrew, 2006). A study by Richardson, Evans, & Gbadamosi (2014) shows that students who work more than 10 hours per week were more likely to report reduced academic performance, as well as difficulties in combining their employment with their studies.

Other studies however show a beneficial effect of part-time employment. For instance, research by Light (2001) and research by Molitor & Leigh (2004) shows that working while in school can have a beneficial influence on future engagement with the labour market. They show that part-time employment expands a student's qualities and skills such as time management and responsibility, communication, and problem-solving ability. Furthermore, the impact of part-time employment can vary depending on several factors, such as the number of hours worked, the type of job, and the individual student's personal characteristics (Callender, 2008). For example, some studies have found that students who work part-time in jobs that are related to their field of study tend to have better academic outcomes than students who work in unrelated jobs (Tessema, et al. 2014; Sekiguchi, 2012). Overall, the

literature shows that the relationship between part-time employment and academic success is complex and can be influenced by a number of factors. However, no previous study has systematically inquired whether this relationship is moderated by demographic factors, such as age, gender or being an international student

Previous data has shown that female students tend to perform better academically than males (Jayanthi, 2012), despite having similar rates of part-time employment – suggesting a differential impact of part-time employment on academic success across gender (Boll, Mergele, & Zierow, 2022). However, female students are more likely to face additional challenges and barriers in their academic and professional lives, such as discrimination, unequal pay, and being more likely to be overlooked for promotions (Boll, et al. 2022). As a result, women may have to work harder or work more hours, creating additional stress and diverting time and attention from their studies. Additionally, female students may face greater societal pressures to excel academically and may feel more pressure to balance their work and school responsibilities (Fiorilli, et al. 2022). Thus, there is reason to suspect that the relationship between part-time employment and academic success may be moderated by gender.

Research by Salamonson, & Andrew (2006) has reported a positive effect of age on academic performance meaning that older students tend to perform better academically than younger students. Older students' life experience and maturity can be beneficial for their academic performance (Richardson, 1994). However, younger students are often more adaptable and better able to learn and retain new information (Zeegers, 2001), which in turn can give them an advantage in the classroom. Also, in the Netherlands, people from the age of 23 years old can receive benefits from the Dutch government such as rent subsidies (*huurtoeslag*) (Rijksoverheid, n.d.). This might produce fewer financial difficulties, and therefore less need for sacrificing academic success for part-time employment. However,

whether age moderates the relationship between part-time employment and academic success is unknown.

Another possible moderator is being an international student. International students face additional challenges and stressors compared to Dutch students. These include adapting to a foreign country and culture, learning a new language, and adjusting to a different educational system (Zhai, 2002). These challenges can pose extra difficulties for international students to balance their academic responsibilities with other responsibilities, such as part-time employment, which can in turn negatively affect their academic performance (Sherry, Thomas & Chui, 2010). Additionally, students without Dutch citizenship do not have the same access to financial resources as Dutch nationals do. Foreign students must meet additional criteria (such as being employed a certain number of hours a month) to get access to *studiefinanciering*, which includes free or discounted public transport, as well as an interest-free student loan (DUO, 2022). This produces both a stronger need to take on part-time employment (to gain access to financial support), and to work more hours in part-time employment (to make ends meet). This possibly has a negative impact on their academic performance. Yet, there has not been any previous research that has specifically investigated the relationship between academic performance and part-time employment for international students of higher education in the Netherlands.

This study aims to investigate the relationship between part-time employment and academic performance in university students and to determine whether this relationship is moderated by age, gender, and being an international student in the Netherlands. We aim to answer four research questions in this study. These are: (1) Does part-time employment influence academic success? (2) Is the relationship between part-time employment and academic success moderated by gender? (3) Is the relationship between part-time employment

and academic success moderated by age? And (4). Is the relationship between part-time employment and academic success moderated by being an international student?

We hypothesize that students working more hours in part-time employment have decreased academic success compared to students who work fewer hours, as students who are in part-time employment have less time for their academic obligations. Furthermore, we hypothesize that the relationship between hours worked in part-time employment and academic success is stronger in women as compared to men, as women face discrimination and the gender pay gap. We further hypothesize that the relationship between hours worked in part-time employment and academic success is stronger in younger individuals as compared to older students because older students receive more government benefits. Moreover, we hypothesize that the relationship between hours worked in part-time employment and academic success is stronger in international students as compared to Dutch students because Dutch students have easier access to government financial resources.

The results of this study will be of relevance to students, educators, and policymakers alike. By examining the effect of part-time employment on academic performance, we hope to gain a better understanding of how students can effectively balance their work and academic responsibilities. Additionally, by exploring the potential moderating effects of gender, age, and international student status, we aim to identify who is most at risk of lower academic success due to part-time employment.

Method

Participants and procedure

A cross-sectional study was conducted to investigate the relationship between hours worked in part-time employment and academic success, and whether this relationship is moderated by age, gender and being an international student. A convenience sample of 276 students in higher education (*HBO* and *WO*), who volunteered to fill out an online questionnaire, was used. Participants were recruited through social media and advertising at several locations of the University of Groningen.

Participants were asked to only complete the questionnaire if they were currently enrolled in higher education. As the questionnaire was available only in English, participants were required to be sufficiently proficient in the English language to understand all the questions. The survey included control questions to test for response fatigue. Data of participants that did not answer these control questions correctly were removed from the analysis. The questionnaire took approximately 10 minutes to complete.

All participants consented to participate in the questionnaire. The study protocol was approved by the Ethics Committee of the University of Groningen, and all collected data were anonymized and treated confidentially according to the GDPR Guidelines (Crutzen, Peters & Mondschein, 2019). The questionnaire can be found in the appendix.

Measurements

Demographic variables

The demographic variables that were collected from participants were: age, gender, educational level, study faculty, and current living situation as well as if they identified as international students. Age was defined as the subjects' age when completing the questionnaire. Gender was asked to be indicated by three categories, male, female, and other. Participants could indicate if they were *HBO* or *WO* students. Participants could indicate their

study faculty from a list of faculties or enter their study faculty if not in the list, which were subsequently grouped into three study directions (alpha: behavioural and social sciences, theology and religious studies, arts, philosophy; beta: medical sciences, spatial sciences, science and engineering; gamma: economics and business, law, sport, communication).

Participants were asked if they consider themselves international students. For current living situation, participants could choose out of living alone, with parents, or with housemates.

Part-time employment

Participants were asked whether they were or were not in part-time employment next to their studies. Next, participants were asked to indicate how many hours per week they are working.

Income

Participants were asked to indicate how much money in euros they receive from part-time employment. Furthermore, they were asked to indicate how much money they receive per month from their parents, and governmental support or student loans. The questionnaire also asked participants to indicate their approximate total monthly income.

Academic Performance

The dependent variable is academic performance. Academic success was operationalized as self-reported average grade obtained in the student's current degree programme, which was assessed in the questionnaire as 'indicate your average grade'. Grades awarded in an educational programme are meant to reflect the student's functioning, as well as compare a student's performance to peers. Furthermore, as grades in higher education in the Netherlands are generally awarded on the same 1-10 scale across education levels and study direction, this makes comparison across different groups possible. While average grades are objectively quantifiable, it was assessed through self-report, which may be prone to social

desirability bias. Average grade as a measurement of academic success has previously been validated (Dariola, 2013).

Statistical methods

Dichotomous variables female gender, being an international student, part-time employment and educational level were coded as 0 or 1. Arbitrarily we assigned the educational level WO to a value of 1, and HBO to 0.

A correlation matrix was calculated. For the continuous variables average grade and hours of part-time employment, a Pearson correlation was calculated. For correlations between dichotomous and continuous variables, a point-biserial correlation (Tate, 1954) is reported. These correlations were tested for statistical significance.

To determine whether part-time employment is associated with academic success, a simple linear regression was performed with average grade as the dependent variable and part-time employment as the independent variable. Next, interaction terms were calculated between hours of part-time work and the three moderator variables age, female gender and being an international student. To assess moderator effects, a multiple linear regression was conducted, and three models were estimated with average grade as dependent variable, part-time employment as independent variable, the moderator variable, and the interaction term of hours worked in part-time employment \times moderator.

This analysis was repeated in a subsample of participants that reported being in part-time employment, with the independent variable hours worked in part-time employment, and the same dependent and moderator variables as mentioned above. A cut-off for significance of $\alpha = 0.05$ was used. All analyses were performed in SPSS version 24 (IBM Corp, 2016).

Quality control and missing data

Outlier values were removed from the dataset, and average grades entered that did not conform to the 1-10 scale were removed.

Due to a technical problem, questions on gender and being an international student were not assessed for the first 83 participants, and thus data on gender and being an international student was missing for these participants. No missing values were imputed, as no meaningful imputation is possible for the dichotomous variables gender and being an international student. Instead, only complete cases were used for the models including gender and being an international student, and these models were compared to univariate models (with only hours worked in part-time employment as independent variable) in the same sample.

Reliability and Validity

As the present study did not use any variables derived from an index or scale consisting of multiple subitems, we do not report a measure of reliability or validity such as Cronbach's alpha (Netemeyer, Bearden, & Sharma, 2003). However, the reliability and validity of average grade as measure of academic success have previously been reported by Dariola (2013).

Results

Description of the study population

The questionnaire was completed by 276 students in higher education who were included in the present study. Of the participants, 76% were female and 36% identified as international students. The mean age of the sample was 22.3 years old, with a range between 16 and 39 years.

A summary of the characteristics of the study population across study directions (alpha, beta & gamma) is presented in Table 1A. There were no significant differences in the age of the study participants across study directions. However, there were differences in the level of education across study directions, with 81% and 86% of students in the alpha and beta

direction attending WO, compared to only 44% for the gamma direction ($\text{Chi}^2= 34.2, p<.001$). Additionally, a Chi-squared test revealed significant differences in gender distribution across study directions ($\text{Chi}^2 = 12.8, p < .01$), with 83% of students being female in the alpha direction, compared to 52% in the beta direction and 68% in the gamma direction. Furthermore, there was a significant difference in the proportion of international students across study directions ($\text{Chi}^2 = 8.7, p < .05$), with 36% international students in the alpha direction, 14% in the beta direction, and 49% in the gamma direction.

There were no differences in average grades across study directions. There was however a difference in the number of contact hours ($F(2, 269)=7.5, p<.001$), with students in the alpha direction having on average 10.6 contact hours, while those in the gamma direction had 12.3 contact hours, and those in the beta direction had an average of 14.9 contact hours. Additionally, there were differences in the number of hours of self-study across study directions ($F(2, 267) = 3.9, p < .05$). Alpha and beta students spent more time on self-study (17.8 and 18.4, respectively), compared to gamma students, which spent an average of only 13.5 hours on self-study. There were no differences in the prevalence of part-time employment, or the hours spent in part-time employment across study directions. There were also no differences in money received from parents, money earned through part-time employment, or total income across study directions.

Table 1B provides a summary of the characteristics of the study population across students who are and are not in part-time employment. There were no differences in age, gender, study direction or level of education. There was however a difference in the proportion of international students ($\text{Chi}^2 = 9.7, p < .01$), as 29% of individuals in part-time employment were international students, compared to 57% of international students in the group of participants not in part-time employment.

Students who were not part-time employed spent significantly more hours on self-study, on average, compared to those who were part-time employed. Students without part-time employment spent an average of 20 hours on self-study, while those with part-time employment spent an average of 16.3 hours ($t(67.8) = -2.1, p < .05$). In addition, there was a significant difference between the two groups in terms of the amount of money received from parents ($t(55.9) = -2.9828, p < .01$). On average, students with part-time employment received €181 from their parents, while those without part-time employment received €423 from their parents. However, there were no differences in the amount of money received from governmental organizations. Lastly, students who are part-time employed have a higher average income, with an average total income of €1071. In contrast, students who are not part-time employed have a lower average income, with an average total income of €777 ($t(69.8) = 4.1, p < .001$).

There was a significant difference in average grades ($t(77.9) = -3.3, p < .001$) across part-time employment, with individuals in part-time employment reporting a mean average grade of 7.3, compared to 7.7 in students not in part-time employment. This finding supports hypothesis 1, that part-time employment is associated with lower academic success.

In Table 2, a correlation matrix is presented. The variables age and gender are strongly correlated ($r = -.23, p < .01$), indicating that female students were on average younger than male students. The data also shows that there is a positive correlation between age and being an international student ($r = .15, p < .05$). Also positively correlated are the variables age and being in part-time employment ($r = .12, p < .05$), suggesting that older students in the sample were more likely to be employed part-time. Another significant correlation is between age and average total income in our sample ($r = .34, p < .01$), showing that older students had a higher total income. Furthermore, a positive correlation was found between students in part-time employment and average total income ($r = .25, p < .01$) indicating that students with part-time

employment had a higher average total income. Additionally, it was found that there was a strong negative correlation between average grade and being part-time employed ($r = -.19$, $p < .01$), which also confirms hypothesis 1, that part-time employment is associated with lower academic success.

The data furthermore showed a positive correlation between hours worked in part-time employment and average income ($r = .36$, $p < .01$). This indicates that students who worked more hours in part-time employment had a higher income. Note that this correlation is calculated in a subsample that reported being in part-time employment ($n = 220$).

Is part-time employment associated with decreased academic performance?

A univariate linear regression was performed to assess the relationship between part-time employment and academic success. The independent variable was part-time employment and the dependent variable was average grade. The predictor variable was found to be significant, indicating that students in part-time employment had a -0.43 lower average grade ($p < .01$; Table 3, Model 1). The model was significant ($F(1,270) = 10.73$, $p < .01$) and explained approximately 3.8% of the variability in the data ($R^2 = .038$). Therefore, the null hypothesis is rejected and the alternative hypothesis, that students in part-time employment have lower academic success compared to students that do not work, is retained.

Does age moderate the association between part-time employment and academic success?

Multiple linear regression was used to evaluate whether the relationship between being in part-time employment and academic success is moderated by age. The model was first adjusted to include age as a predictor, but this did not improve the model fit ($R^2 = .039$) and age was not a significant predictor (Table 3, Model 2). The model was then further adjusted to include an interaction term of part-time employment and age, but this did not improve the model fit ($R^2 = 0.041$) and the interaction term was not significant (Table 3, Model 3).

Therefore, the hypothesis that the relationship between part-time employment and academic success is stronger in younger individuals compared to older students was not supported by the data.

Does being an international student moderate the association between part-time employment and academic success?

Multiple linear regression was used to determine whether the relationship between part-time employment and academic success is moderated by being an international student. As described in the Methods (section *Missing Data*), data on being an international student and gender was only available for $n=183$ participants. To make a valid comparison between models, we first repeated the univariate regression with only part-time employment as a predictor in a subsample with complete data on gender and being an international student. In this model, part-time employment was associated with lower average grades, with similar effect sizes. This model was significant ($F(1, 178)=6.8, p<.05$) and explained 3.7% of the variance ($R^2=.037$).

The model was first adjusted to include being an international student as a predictor, but this did not improve the model fit substantially ($R^2 = .042$) and being an international student was not a significant predictor (Table 3, Model 6). The model was then further adjusted to include an interaction term for part-time employment and being an international student, but this did not improve the model fit substantially ($R^2 = 0.048$) and the interaction term was not significant (Table 3, Model 7). Therefore, the hypothesis that the relationship between part-time employment and academic success is stronger in younger individuals compared to older students is rejected.

Does gender moderate the association between part-time employment and academic success?

As was the case for being an international student, we compare models including the predictor gender only to the model estimated with complete cases (see section above). Gender was added to the model, which did not improve model fit ($R^2 = .037$), and gender was not a significant term (Table 3, Model 4). Then, an interaction term of part-time employment \times gender was added. This did not improve model fit ($R^2 = 0.037$), and the interaction term was not significant (Table 3, Model 5). Thus, the alternative hypothesis that the relationship between hours worked in part-time employment and academic success is stronger in female as compared to male students is rejected.

Are the number of hours worked in part-time employment associated with lower academic success in students in part-time employment?

The same regression analysis as above was repeated in a subsample of students in part-time employment, with the independent variable hours worked in part-time employment. Here, however, hours of part-time employment was not a significant term, except in one model including age as a covariate (Table 4). None of the models were significant, and the univariate model explained only 1.6% of variability ($R^2 = .016$). All the moderator variables (gender, age, being an international student) were included in their respective models but none of the models or interaction terms were significant.

Discussion

The present study examined the relationship between hours worked in part-time employment and academic success in a sample of 276 students in the Netherlands. Our findings show that part-time employment is associated with lower academic success. However, the study did not find a moderating role of age, gender or being an international student on the relationship between hours worked in part-time employment and academic success. Furthermore, there was no relationship between the number of hours worked in part-

time employment and academic success in students who were in part-time employment. Hours worked in part-time employment are not associated with decreased academic performance in this subsample.

Comparison with previous studies and interpretation of findings

Some prior studies have investigated the relationship between (hours worked in) part-time employment and academic success. Yanbarisova (2015) performed a similar study to the present study, investigating the relationship between part-time employment and academic success in Russian university students. Their results were similar, however, students with a part-time job related to their academic field reported even higher academic success than students without a part-time job.

Wang et al (2010) investigated whether part-time employment or the number of hours worked is related to academic success in students in Macau. The results of this study are contradictory to ours, with part-time employment as a binary predictor not being associated with grade-point average (GPA) while working long hours was associated with lower GPA. The authors furthermore report that a job which is related to one's study field was associated with a higher GPA. Possibly, these differences are explained by the type of jobs that students have, which the present study did not include in the analysis.

Tessema, Ready, and Astani (2014) investigated the relationship between part-time employment across different brackets of hours worked, in university students in the USA. The authors reported that for students working less than 10 hours, there is a largely beneficial effect, while for students working more than 10 hours, there is a detrimental effect. These findings are contrasting with ours, as we found no effect of the number of hours, but we did find an effect of part-time employment overall. Differences may derive from this study using GPA extracted from the university database, which is less prone to bias from self-report measures (see *Strengths and limitations* below).

Dariola (2014) assessed the relationship between part-time employment and GPA. In line with other studies, the author reports that a limited number of hours worked in part-time employment is associated with a higher GPA, but working more hours is associated with a lower GPA.

These previous studies suggest that the relationship between hours worked in part-time employment and academic success is non-linear, with a low number of hours being beneficial, and many hours being detrimental. The present study however assessed number of hours worked in part-time employment in a linear relationship with academic success. If the relationship is non-linear, this may be an explanation for why the present study did not detect this relationship.

Some studies investigated the impact of part-time employment on other factors which are related to academic success. Hovdhaugen (2015) used survival analysis to assess whether term-time employment is associated with dropout rates. While dropping out is a different phenomenon than average grades, both are related to academic performance, the former likely corresponding to severely diminished academic performance. The paper reported that employment was associated with dropping out but only in students working over 20 hours. This is partially in line with the findings of this study however, unlike the study of Hovdhaugen, we did not find an additive effect of more hours of part-time employment. In the present study, participants with part-time employment worked 11.2 hours on average. Possibly, there were too few participants in our study, or too few participants working a very high number of hours, to detect an additive effect of more hours worked.

No previous studies specifically investigated a moderating role of age on the relationship between part-time employment and academic success. Possibly we did not detect an effect because there was little variance in age as most individuals had an age close to the mean, and the study may not have included enough older students to detect an effect of age.

Alternatively, the relationship between part-time employment and academic success could be stable across age.

Likewise, no previous studies investigated the moderating role of gender. The present study neither finds a moderating effect of gender, suggesting that the impact of part-time employment on academic success is similar between women and men. This is surprising, as gender differences exist across many traits. For instance, women may face social expectations and stereotypes while men may have more freedom and flexibility (Bloodhart et al., 2020)

The present study also did not detect a moderating effect of being an international student. Possibly, the present study was underpowered to detect such an effect, as a small number of students were international students ($n=66$), while a very small number of students with part-time employment were also international students ($n=42$). Or as seems to be the case for age and gender, the impact of part-time employment on academic success is stable, with a similar impact on international students and Dutch students.

Possibly, other factors moderate the relationship between part-time employment and academic success. Prior studies such as the one by Wang et al (2010) discussed previously, show that the type of job, and whether it is related to one's academic field, decides whether part-time employment has a positive or negative impact, and is thus a moderator of the relationship.

Strengths and limitations

The strengths of this study include the diversity of its sample, encompassing international students and a large proportion of women. This allows inferences to be drawn that are meaningful across different groups of people.

Limitations of the study include the fact that it used a convenience sample, which may not be representative of the broader population of students in higher education in the Netherlands. Furthermore, another limitation of the study is that it used self-report measures

to assess academic success. The high average grade in our sample may be an indication of social desirability bias, as individuals may be more likely to report higher grades than they received to present themselves in a more favourable light. The present study did not have measures to control or adjust for such bias.

Furthermore, as issues such as student finances are contingent on location (government financial support, wages, cost of living), our results are specific to the Netherlands and may not be generalized to other countries. However, studies conducted in other countries such as Macau (Wang et al, 2010) or the USA (Tessema et al, 2014), reached similar conclusions.

Future studies

As financial need is an important motivation for part-time employment in students (Richardson, Evans, & Gbadamosi, 2009). Our study suggests that a lack of financial resources for students may have an adverse impact on academic success through the need to take on part-time employment. Financial resources are importantly determined through policy (e.g., grants and loans). It would therefore be of interest if our results can be replicated in studies in other countries, with different policies surrounding part-time employment and student finance. For instance, in Sweden, students enjoy free tuition and more extensive financial support (Vossensteyn, 2004). If our study is repeated in such a country, and no effect of part-time employment on academic success is found, that suggests that financial issues may be the core of the problem.

The present study did not consider the previously found non-linear relationship between the number of hours worked in part-time employment and academic success, which may have influenced the results. Furthermore, the present study was cross-sectional, making it difficult to draw conclusions on causal relationships. By using more rigorous methods, such as longitudinal designs and statistical approaches to control for confounding (Hammerton and

Munafò, 2021), as well as by including students across countries with different financial support systems, and by using larger diverse samples, stronger conclusions could be drawn. Such an approach could assess part-time employment and academic success at multiple intervals, and test whether changes in part-time employment are followed by changes in academic success later, and vice versa.

Another possibility for further studies could be to investigate the role of the support provided by the employer in this relationship. This could include examining whether the employer provides flexible schedules or other support to help the student balance their work and academic responsibilities, or whether the work environment is conducive to academic success. By considering these and other factors, future studies could gain a more complete understanding of the relationship between part-time employment and academic success and identify other factors that may be important to consider when examining this relationship.

Currently, there is a paucity of data on possible interventions to prevent lower academic success. Especially as previous data suggest that this effect is mostly due to financial reasons (Richardson, Evans, & Gbadamosi, 2009; Gwosc et al, 2021), this problem would affect students from financially disadvantaged backgrounds the strongest. To ensure equity across students from different socio-economic backgrounds, it is important for policymakers and scientists to find and test interventions. Examples could include more extensive financial support for students or flexible university schedules.

Implications

On November 11th in 2014 the Dutch government profoundly changed their student finance system. For decades prior, the Dutch state provided students with a free monthly grant to finance their studies. The free grant was abolished, and instead, students were offered an interest-free loan. This was justified by the government on the basis that the money saved could be invested to increase the quality of higher education. Additionally, an argument based

on equity was made: students are profiting from their education in terms of future financial and societal success, and therefore should invest in their education themselves (Regeerakkoord, 2012). The consequence however is the prospect of accumulating a large debt. Many students, therefore, seek a part-time job to finance their studies, which means they can dedicate less time to their academic activities.

This need to take on part-time employment has likely had a negative effect on their academic performance (Hordósy, Clark, & Vickers, 2018). Our results support this idea and suggest that part-time employment has a negative impact on academic success. Even though the full sample, including the students in part-time employment, had a generally high average grade, our results suggest that part-time employment is negatively associated with academic success.

Our findings highlight the opportunity and need for institutions such as the Dutch government, as well as universities, to find solutions. The academic success of students in higher education is an important determinant of their ability to work in a knowledge economy. While abolishing the free grant leads to lower costs in the short term, its impact on academic success, may have higher economic and societal costs in the long term, as students may fail to realize their full potential. Therefore, it is also in the interest of governments to provide students with the means to finance their education. The Netherlands will reintroduce the "*basisbeurs*" in the upcoming academic year (2023) as part of an effort to address this issue (Rijksoverheid, 2022). This is a good development, as scholarships and grants can help students cover the cost of tuition and other expenses, allowing them to focus on their studies without worrying about how they will pay for their education (Cappelli, & Won, 2016).

Another solution could be, to give students the ability to structure their educational responsibilities in such a way to be compatible with work responsibilities. Institutions of higher education could offer flexible class schedules, academic support services and career

counselling to help students effectively manage their work and education (Martinez et al, 2013).

Conclusion

Overall, the present study adds to the growing body of literature on the relationship between part-time employment and academic success. Our findings show that part-time employment is associated with lower academic success, which is stable across age, gender and being an international student. Further research is needed to fully understand this relationship and to assess a possible non-linear effect of the number of hours worked in part-time employment. Additionally, it would be beneficial to consider other factors that may influence the relationship between part-time employment and academic success. To ensure students make the most of their education, policymakers should provide ample financial support to students, and universities should facilitate students' part-time employment.

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Table: 1A

Means and proportions in the full study sample and across study directions

Variable	Full sample, N = 272	Alpha, N = 181	Beta, N = 36	Gamma, N = 55	F / Chi2 *	p
Age	22.3	22.4	21.8	22.3	.5	.6
Female gender (%)	76	83	52	68	12.8	.002
Being an international student (%)	36	36	14	49	8.7	.013
Average grade	7.4	7.4	7.2	7.3	1.6	.2
Contact hours	11.5	10.6	14.9	12.3	7.5	<.001
Hours spent self-studying	17.0	17.8	18.4	13.5	3.9	.021
In part-time employment (%)	81	81	81	82	.0	>.9
Hours worked in part-time employment	11.2	10.9	9.8	13.1	2.3	.11
Income per month from part-time employment	589	551	609	698	2.6	.079
Money received from parents	228	218	256	241	.2	.8
Money from government organizations	389	445	293	261	.5	.6
Total income per month	1,017	995	1,025	1,081	.7	.5

Note: Total sample for reference. Significance tests refer to the sample split by study direction.

* One-way ANOVA; Pearson's Chi-squared test

Table: 1B

Characteristics of study population across part-time employment

Variable	In part-time employment, N = 220	Not in part-time employment, N = 52	t / Chi2 *	p
Age	22.5	21.5	1.9	.058
Female gender (%)	75	79	.1	.8
Being an international student (%)	29	57	9.7	<.01
Average grade	7.3	7.7	-3.2	<.01
Contact hours	11.5	11.4	.1	.9
Hours spent self-studying	16.3	20.0	-2.1	<.05
Money received from parents	181	423	-3.0	<.01
Money from government organizations	419	263	1.4	.2
Total income per month	1,071	777	4.1	<.001

Note: Total sample for reference. Significance tests refer to the sample split by study direction.

* Two sample t-test; Pearson's Chi-squared test

Table: 2

Correlation matrix

	Female gender† n=180	Being an international student† n=185	Average grade n=272	In part-time employment† n=272	Hours worked in part-time employment‡ n=220	Total income n=267
Age n=272	-.228**	.154*	0,017	.123*	.145*‡	.339**
Female gender† n=180	--	x	-0,009	x	-0,014‡	-0,047
Being an international student† n=185		--	0,132	x	0,130‡	0,051
Average grade n=272			--	-.196**	-0,129‡	-0,029
In part-time employment† n=272				--	x	.247**
Hours worked in part-time employment n=220					--	.358**
Average total income n=267						--

Note: **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). a. Not reported because both variables are dichotomous. †. Dichotomous variable coded as 0 and 1. Correlations reported with these variables are point-biserial correlations.

‡: Note that correlations are computed in a subsample of students in part-time employment (n=220).

Table 3:

Regression models with part-time employment as independent variable

	Term	B	SE	t	p	95% CI
Model 1 n= 272	Part-time employed	-0.43	0.13	-3.28	.001	[-0.69, -0.17]
Model 2 n= 272	Part-time employed	-0.44	0.13	-3.33	.001	[-0.70, -0.18]
	Age	0.01	0.02	0.69	.491	[-0.02, 0.05]
Model 3 n= 272	Part-time employed	-0.97	0.94	-1.02	.307	[-2.82, 0.89]
	Age	-0.01	0.04	-0.17	.862	[-0.08, 0.07]
	Part-time employed × Age	0.02	0.04	0.56	.574	[-0.06, 0.11]
Model 4 n= 180	Part-time employed	-0.43	0.16	-2.60	.010	[-0.75, -0.10]
	Female gender	-0.04	0.16	-0.22	.827	[-0.36, 0.28]
Model 5 n= 180	Part-time employed	-0.55	0.35	-1.58	.115	[-1.24, 0.14]
	Female gender	-0.16	0.35	-0.46	.644	[-0.86, 0.53]
	Part-time employed × Female gender	0.16	0.40	0.41	.684	[-0.62, 0.94]
Model 6 n= 180	Part-time employed	-0.36	0.17	-2.17	.031	[-0.69, -0.03]
	Being an international student	0.18	0.15	1.24	.215	[-0.11, 0.47]
Model 7 n= 180	Part-time employed	-0.18	0.24	-0.75	.453	[-0.64, 0.29]
	Being an international student	0.46	0.29	1.59	.114	[-0.11, 1.02]
	Part-time employed × Being an international student	-0.37	0.33	-1.11	.268	[-1.03, 0.29]

Note: Results of simple and multiple linear regression in the full sample, with dependent variable average grade, independent variable part-time employment, and with moderators age, female gender and being an international student. Regression model constants are not displayed.

Table 4

Regression models with hours worked in part-time employment as independent variable

	Term	B	SE	t	p	95% CI
Model 1 n=220	Hours worked in part-time employment	-0.02	0.01	-1.93	.055	[-0.03, 0.00]
Model 2 n=220	Hours worked in part-time employment	-0.02	0.01	-2.08	.039	[-0.04, -0.00]
	Age	0.02	0.02	1.17	.244	[-0.02, 0.06]
Model 3 n=220	Hours worked in part-time employment	0.01	0.07	0.13	.895	[-0.13, 0.15]
	Age	0.04	0.05	0.82	.411	[-0.06, 0.15]
	Hours worked in part-time employment × Age	-0.00	0.00	-0.40	.688	[-0.01, 0.00]
Model 4 n=138	Hours worked in part-time employment	-0.02	0.01	-1.41	.159	[-0.04, 0.01]
	Female gender	-0.00	0.19	-0.03	.979	[-0.37, 0.36]
Model 5 n=138	Hours worked in part-time employment	0.00	0.02	0.13	.899	[-0.05, 0.05]
	Female gender	0.36	0.42	0.86	.391	[-0.47, 1.20]
	Hours worked in part-time employment × Female gender	-0.03	0.03	-0.97	.333	[-0.08, 0.03]
Model 6 n=138	Hours worked in part-time employment	-0.02	0.01	-1.49	.138	[-0.04, 0.01]
	Being an international student	0.12	0.17	0.69	.494	[-0.23, 0.46]
Model 7 n=138	Hours worked in part-time employment	-0.02	0.01	-1.30	.197	[-0.05, 0.01]
	Being an international student	0.08	0.41	0.20	.840	[-0.73, 0.89]
	Hours worked in part-time employment × Being an international student	0.00	0.03	0.10	.920	[-0.05, 0.05]

Note: Results of simple and multiple linear regression in a subsample of participants with part-time employment, with dependent variable average grade, independent variable hours worked in part-time employment, and with moderators age, female gender and being an international student. Regression model constants are not displayed.

Appendix: Questionnaire Student Life

Dear participant,

This study is conducted within the third-year course Bachelor Thesis of the Psychology Programme of the University of Groningen. In this course, students conduct a study on a psychological topic under supervision of a teacher of the psychology programme.

Within this course, we conduct a study on the effect of a part-time job on the academic performance and perceived stress of students. We do this in order to gain more knowledge on how combining a job with studying may impact students.

In this study you will fill in a questionnaire with questions about different topics related to your study and your part-time job. There are no correct or incorrect answers. For each question, please choose the answer that is closest to your opinion.

Filling in this questionnaire will take about 10 minutes.

The student-researchers conducting this study keep to the ethical guidelines as specified by the the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen.

The data for this study are collected anonymously. During the study, we will ask demographic questions regarding age, gender, and year of education. This information will be used to describe our group of participants (for example mean age or distribution male/female/other).

The student-researchers adhere to the Dutch code of conduct for scientific integrity and university policy regarding the storage and management of personal and research data when conducting this research.

Below, you can find detailed information about how we will process the research data that we collect.

The research data obtained will not be viewed from a medical and/or clinical perspective. Therefore, your participation in the study cannot be considered a medical/clinical test.

Since the current study is completely anonymous, any scores that are worrying and/or that may be of personal clinical significance cannot be related back to you. If you are concerned about your health as a result of the questions, we advise you to contact the student advisor, the student psychologist or your general practitioner.

For questions, remarks or concerns about this study, you can contact the researchers in charge via n.blom.2@student.rug.nl.

If you have questions, remarks or concerns that you rather not share with the researchers in charge, you can contact the coordinators of Bachelor Thesis (Hedy Greijdanus & Else Havik, bachelortheses.psy@rug.nl).

We now ask you to consider whether you want to participate in our study.

Your participation in this study is entirely voluntary. If you decide not to participate, there will be no adverse consequences. If during the course of the research, you wish to withdraw your consent and terminate your participation, you have every right to do so at all times. Again, there will be no adverse consequences for you. If you decide you do not want to participate in this study, we thank you for your time. If you indicate that you want to participate in this study, we will ask you to sign an informed consent form. By signing this informed consent form, you indicate that you are sufficiently informed about the study, that you want to participate in the study and that you voluntarily do so.

Thank you for your participation in advance!

On behalf of thesis group 37,

Tsveta, Vera, Nynke, Erick, Annette and Judith

* Required

Informed Consent

The information you provide for the current research purposes is treated with the utmost care and is accessible to the student-researchers who conduct this study only. In addition, the research data are accessible to the teacher(s) of these students and the examiners of the course for which this study is conducted.

The research data that are collected in this study will be saved by the student-researchers for the course in which they conduct this study. To fulfill this course, the student-researchers have to submit the research data to the programme Psychology of the University of Groningen during the course. The programme

Psychology of the University of Groningen keeps the research data for education purposes (for example, appraisal, verification and audits).

The research data will be kept by the student-researchers until the course for which they conduct this study is completed (February 2023). After that, the research data will be deleted by the student-researchers from their own storage.

The online consent form will be deleted by the student-researchers at the same time as the research data.

Some persons and organizations must have access to your research data. This is necessary in order to test whether the research has been carried out properly and reliably. These persons and supervisory authorities inspecting your data for verification include: authorized persons within the programme Psychology of the University of Groningen (for example a dean, director or data officer) and (inter) national supervisory authorities (for example the Dutch Data Protection Authority and the Netherlands Board on Research Integrity). They are held to inspect your data on a strictly confidential basis.

You will be asked to grant permission for this access. If you refuse to do so, you cannot participate in the study.

University of Groningen is responsible for compliance with the General Data Protection Regulation (GDPR) when processing your personal data. The researchers ensure that your privacy and the conditions attached to it are safeguarded and they adhere to the Dutch code of conduct for scientific integrity and university policy regarding the storage and management of personal and research data when conducting this research. You have the right to withdraw your consent for the processing of your personal data at any time. Your personal data will then be deleted.

If you have any questions or concerns regarding your rights as a research participant, you may contact the Ethics Committee of the Department of Psychology of the University of Groningen via email (ecp@rug.nl). Do you have questions or concerns regarding your privacy, or regarding the handling of your personal data? For this you may also contact the Data Protection Officer of the University of Groningen: privacy@rug.nl.

As a research participant you have the right to a copy of this research information.

Informed consent

Consent form for participation in scientific research for the course Bachelor Thesis: Studying With a Part-Time Job.

I hereby confirm that:

I have been informed that the current study is conducted by psychology students as part of their third-year course Bachelor Thesis;

I have been satisfactorily informed about the study in writing;

I have read the written information;

I have been given the opportunity to ask questions about the study;

my questions have been answered satisfactorily;

I have been given ample opportunity to think carefully about participating in the study;

I participate in the study entirely on a voluntary basis.

I understand that:

I have the right to withdraw my consent to participate at any time during the study without having to state reasons and without fear of adverse consequences;

my personal data are processed in accordance with the applicable European privacy regulations;

my personal data are processed in accordance with the privacy statement of University of Groningen

(<https://www.rug.nl/about-ug/organization/rules-and-regulations/general/20211129-general-policy-on-protection-of-personal-data-ug-2-0.pdf>)

the tests and questionnaires used are not medical / clinical tests. Since the data are collected anonymously, the researchers cannot inform me about scores that may be of personal clinical interest.

I agree that:

the online consent form is kept until the end of February 2023 at the latest;

my personal and research data within this research are obtained for education purposes and will be kept until September 2023 at the latest and will be available for appraisal, verification and audits until that date; supervisory authorities may inspect my personal and research data for the purpose of auditing research.

Please indicate your preference below.

1. Do you consent to participate in this study? * Mark only one oval. Yes/No

Demographics

The first few questions will be about demographics

2. How old are you? **open question**

What is your gender?

Female

Male

Prefer not to say

Do you consider yourself an international student?

Yes

No

3. Please indicate your current educational level

Mark only one oval

MBO/Technical or Vocational

School HBO/Higher Education

WO/University

Other

4. At which faculty do you study

Check all that apply.

Economics and Business

Behavioral and Social Sciences

Theology and Religious Studies

Arts

Medical Sciences

Law

Spatial Sciences

Science and Engineering

Philosophy

Sport

Other:

Academic Performance

The next questions are about academic performance.

Note that the questions below refer to your normal study week. (not to the exam period)

5. How many contact hours do you have in your study? * *open question**
6. How many hours per week do you spend self-studying? * *open question**
7. What is your average grade? (Please specify with one decimal) * *open question**
8. What is the average of your last three grades? (Please specify with one decimal) * *open question**
9. How many courses did you fail on the first try? * *open question**

Parttime Job

The next part of the survey will be about your parttime job. Note that these questions are also about your average week.

10. Do you have a parttime job? *Mark only one oval* Yes/No
11. In what sector do you work * *Check all that apply.*

Hospitality Delivery

Retail

Education

Freelancing

On-campus jobs

Caregiver

other:

12. How many hours a week do you work? * *open question**
13. What is your (average) hourly wage before deduction of taxes? * *open question**
14. What is your average income per month from your part-time employment? * *open question**
15. Do you have a study related job ? *Mark only one oval* Yes/No
16. Does your job affect your studies in a positive way? * *Mark only one oval*

5 All of the time

4 Most of the time

3 More than half of the time

2 Less than half of the time

1 Some of the time

0 Not at all

17. Does your job affect your studies in a negative way? * *Mark only one oval*

5 All of the time

4 Most of the time

3 More than half of the time

2 Less than half of the time

1 Some of the time

0 Not at all

Well- being

The following questions are about well-being. The answer range will be:

All of the time (5), most of the time (4), more than half of the time (3), less than half of the time (2), some of the time (1) and at no time (0).

18. Over the past 2 weeks I have felt cheerful and in good spirits. * *Mark only one oval*

- 5 All of the time
- 4 Most of the time
- 3 More than half of the time
- 2 Less than half of the time
- 1 Some of the time
- 0 Not at all

19. Over the past 2 weeks I have felt calm and relaxed. * *Mark only one oval*

- 5 All of the time
- 4 Most of the time
- 3 More than half of the time
- 2 Less than half of the time
- 1 Some of the time
- 0 Not at all

20. Over the past 2 weeks I have felt active and vigorous. * *Mark only one oval*

- 5 All of the time
- 4 Most of the time
- 3 More than half of the time
- 2 Less than half of the time
- 1 Some of the time
- 0 Not at all

21. Over the past 2 weeks I woke up feeling fresh and rested. * *Mark only one oval*

- 5 All of the time
- 4 Most of the time
- 3 More than half of the time
- 2 Less than half of the time

1 Some of the time

0 Not at all

22. Over the past 2 weeks my daily life has been filled with things that interest me * *Mark only one oval*

5 All of the time

4 Most of the time

3 More than half of the time

2 Less than half of the time

1 Some of the time

0 Not at all

Stress

The following questions will be about stress in the last month.

The rating scale is as follows:

0 Did not apply to me at all

1 Applied to me to some degree, or some of the time

2 Applied to me to a considerable degree or a good part of time 3 Applied to me very much or most of the time

23. I found it hard to wind down. * *Mark only one oval.* 0-3

24. I tended to over-react to situations. * *Mark only one oval* 0-3

25. I felt that I was using a lot of nervous energy. * *Mark only one oval.* 0-3

26. I found myself getting agitated. * *Mark only one oval.* 0-3

27. I found it difficult to relax. * *Mark only one oval.* 0-3

28. I was intolerant of anything that kept me from getting on with what I was doing. * *Mark only one oval.*
0-3

29. I felt that I was rather touchy. * *Mark only one oval.* 0-3

Ways to spend time

The following questions are about how you spend your time.

How much time do you approximately spend in a week doing the following activities? (**In full hours**)

30. How much time do you approximately spend in a week doing sport? ***open question**
31. How much time do you approximately spend in a week doing voluntary work? ** *open question**
32. How much time do you approximately spend in a week doing cultural activities or trips? ** *open question**
33. How much time do you approximately spend in a week doing activities with friends and ** *open question** family?
34. How much time do you approximately spend in a week doing informal care duties? (like taking care of a family member) ** *open question**
35. How much time do you spend doing any other obligatory duties? ** *open question**

Motivation

The following questions will be about motivation.

Scale the answer of the following question: Why do you go to school? The scale is from 1 (not at all) to 7 (exactly)

36. Because I need at least a bachelor diploma in order to find a high-paying job later on ** Mark only one oval. 1-7*
37. Because I experience pleasure and satisfaction while learning new things ** Mark only one oval. 1-7*
38. Because I think that an education will help me better prepare for the career I have chosen ** Mark only one oval. 1-7*
39. Honestly, I don't know; I really feel that I am wasting my time in school. ** Mark only one oval. 1-7*
40. To prove to myself that I am capable of completing my bachelor diploma. ** Mark only one oval. 1-7*
41. In order to obtain a more prestigious job later on. ** Mark only one oval. 1-7*
42. For the pleasure I experience when I discover new things never seen before. ** Mark only one oval. 1-7*
43. Because eventually it will enable me to enter the job market in a field that I like. ** Mark only one oval. 1-7*
44. I once had good reasons for going to school; however, now I wonder whether I should continue. ** Mark only one oval. 1-7*

45. Because of the fact that when I succeed in school I feel important. * *Mark only one oval.* 1-7
46. Because I want to have “the good life” later on. * *Mark only one oval.* 1-7
47. For the pleasure that I experience in broadening my knowledge about subjects which appeal to me. * *Mark only one oval.* 1-7
48. Because this will help me make a better choice regarding my career orientation. * *Mark only one oval.* 1-7
49. I can’t see why I go to school and frankly, I couldn’t care less. * *Mark only one oval.* 1-7
50. To show myself that I am an intelligent person. * *Mark only one oval.* 1-7
51. In order to have a better salary later on * *Mark only one oval.* 1-7
52. Because my studies allow me to continue to learn about many things that interest me. * *Mark only one oval.* 1-7
53. Because I believe that my education will improve my competence as a worker. * *Mark only one oval.* 1-7
54. I don’t know; I can’t understand what I am doing in school. * *Mark only one oval.* 1-7
55. Because I want to show myself that I can succeed in my studies. * *Mark only one oval.* 1-7

Government Aid and Parents

The following questions are about government aid, income ,and parents education.

The income questions are about your average income per month.

56. Do you get any additional money from the government or other organisations? * *Mark only one oval.*

No

DUO

BAFÖG

Erasmus

Other

57. If yes, how much money do you get from the government or organisations in euros? (including loans and funds) ***open question***

58. What is the highest education one of your parents has finished? * *Mark only one oval.*

Did not finish high school

High school diploma

Vocational school (MBO)

Bachelor degree (HBO)/(WO)

Master degree

PHD

Not applicable

Other

59. What is the highest education your other parent has finished? * *Mark only one oval.*

Did not finish high school

High school diploma

Vocational school (MBO)

Bachelor degree (HBO)/(WO)

Master degree PHD

Not applicable

Other:

60. If so, how much money do you receive from your parents in euros? ***open question***

61. What is your income per month in total(from parents, job, government, loans)? * *Mark only one oval.*

Less than €200

200-400

400-600

600-800

800-1000

1000-1200

1200-1400

1400-1600

1600-1800

1800-2000

Other

You have reached the end of the questionnaire. At this point you can change your answers if you want to. If you click on 'next' the questionnaire will be submitted and you won't be able to change your answers.

Thank you for your participation!

If you still have questions you can send an email to n.blom.2@student.rug.nl