# Understanding the Impact of Debt Aversion on Student Borrowing Behaviour in Times of Crisis: The COVID-19 Pandemic and its Indirect and Direct Effects on Students in Dutch Higher Education

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# Understanding the Impact of Debt Aversion on Student Borrowing Behaviour in Times of Crisis:

*The COVID-19 Pandemic and its Indirect and Direct Effects on Students in Dutch Higher Education*


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## Table of Contents

# 1. Introduction

The COVID-19 pandemic and the measures to minimize the spread of the coronavirus have had, and continue to have, severe impact on societies around the world. National governments and policy makers urgently developed strategies to protect the population. In the Netherlands, the government took measures such as social distancing, a curfew and, most drastically, several lockdowns that involved the temporary closure of offices, non-essential shops and venues, as well as schools and universities. The closure of educational institutions and the consequent accelerated transition to online learning reflect the "unprecedented impact on higher education" that the pandemic has had (Farnell et al., 2021, p. 6). This transformation of the educational sphere has been detrimental to students, as many of them experienced or are still experiencing difficulties in continuing their studies or graduating within the expected study duration. Moreover, along with the closure of other public facilities, the lack of real-time interaction with fellow students and teaching staff deprived students of any opportunity to maintain or further develop their social and academic lives. This may lead to 'negative emotions' such as anger and loneliness, raising concern about students' well-being (Farnell et al., 2021; Aristovnik et al., 2020; van Dongen, 2020;).

In addition to the impact on their well-being and study progress, students face uncertainty and hardship regarding their financial position and related behaviour as a result of the pandemic. Not only does study delay lead to financial distress as it imposes additional costs, but due to lockdowns and the associated closure of non-essential venues, many students lose their job and thus a major, if not their main, source of income (UNESCO, 2020; RTL Z, 2021b). By way of explanation, the transformation of education, study delays and rising youth unemployment, which are direct and indirect effects of the pandemic, bring about financial distress that may drive students to alter their financial behaviour such that they become dependent on borrowing money. For example, by taking out a student loan or, if they already have one, increasing the monthly amount (van der Aa, 2021b). In the Netherlands, borrowing is a common tool among students to finance postsecondary education (Ministerie van Onderwijs, Cultuur en Wetenschap, 2021a). However, not every student is willing to borrow to invest in their education. This could be because they receive parental financial support, they have the means to pay for education themselves or because they are simply not willing to get into debt i.e., they are debt-averse (Oosterbeek & van den Broek, 2009; Cunningham & Santiago, 2008; Eckel et al., 2007). However, times of crisis and financial distress may cause individuals to think and act differently (Fan & Chatterjee, 2019).

Therefore, it is insightful to examine the borrowing behaviour of students in light of the effects of the COVID-19 pandemic, which can be considered a global crisis and economic shock, and especially in relation to the notion of debt aversion. In this thesis, the focus is on students enrolled in higher education in the Netherlands, meaning students enrolled at a 'hogeschool' or university of applied sciences (HBO) and students enrolled at an academic university (WO). The reason for this is that these education systems are most similar in structure, as the annual tuition fees are the same amount, and both offer bachelor and master programs (Ministerie van Onderwijs, Cultuur en Wetenschap, 2020). Accordingly, this thesis addresses the following research question: 'How does the degree of debt aversion impact borrowing behaviour of students enrolled in Dutch higher education in times of the COVID-19 crisis?'. The aim of this study is to provide valuable insights that contribute to the overall understanding of the impact of the pandemic on students and their borrowing behaviour. The data needed to arrive at these insights will be obtained by means of a survey.

Although much research has been done on the direct relationship between debt aversion and student borrowing behaviour, little to no attention has been paid to this relationship in the context of the COVID-19 pandemic and its effects on both students' academic and financial standing. By examining exactly this aspect, this thesis fills a gap in the academic literature. Moreover, this subject matter is socially relevant as students in the Netherlands have become increasingly dependent on both their parents and the use of student loans in the wake of the pandemic. These developments and their possible long-term consequences, such as high debt levels and the inability to support oneself without help from others, raise concerns about students' immediate and especially future financial prospects (Nibud, 2021, pp. 3-4). In terms of societal relevance, these concerns demonstrate the need for research into the borrowing behaviour of students in higher education in times of crisis. These insights could be of value in future policymaking, specifically regarding the provision of public financial support in times of crisis, given that the pandemic is still ongoing and this will likely not be the last pandemic or the last crisis that society will have to face.

This thesis addresses the research problem in the following way. Firstly, the theoretical framework explains the current student loan system and outlines some of the effects of the pandemic on higher education to contextualize. Furthermore, this section discusses the existing literature on financial literacy, economic socks and crises and, most importantly, the notion of debt aversion and how this affects students' financial conduct, particularly their borrowing behaviour. This identifies the gap in academic research. Moreover, it develops multiple hypotheses that serve as the basis for the methodology and the

empirical analysis. Secondly, the methodology describes the type of research, explains the data collection process and justifies the choice of sample. Additionally, it operationalizes the data and explains the method of analysis. Thirdly, the empirical results and the analysis present, interpret and scrutinize the collected data in light of the theoretical framework. This is done through descriptive statistics and the quantification of potential correlations between a variety of variables, using a correlation matrix and the method of linear regression analysis. Finally, the conclusion and discussion reflect on the findings obtained, answer the main research question, discuss the limitations, make recommendations for potential further research and reflect on the significance of this study in relation to policy-making.

## 2. Theoretical Framework: Review of Academic Literature and Theory

Before reviewing the existing literature, it is necessary to define the overarching notion of financial behaviour. Financial behaviour can be defined as "a set of observable financial activities by economic agents" that are usually carried out with rational objectives in mind, namely to "maximize their utility, profit and wellbeing" (Mudzingiri et al., 2018, p. 3). In this thesis, students in Dutch higher education are the economic agents who engage in financial activities such as borrowing money to finance their education. Therefore, with regard to the research question, borrowing behaviour is considered part of students' financial behaviour which is generally conducted in a rational manner. However, as will be touched upon later, students will not always be able to think rationally, especially in times of crisis and turmoil.

Furthermore, it is essential to outline the current study financing system in the Netherlands as the use of public financial aid, such as taking out a student loan, is also part of student borrowing behaviour. Any public financial assistance that students need to pay for postsecondary education is provided by the Dutch executive agency for education (DUO) in the form of, for example, a supplementary grant or the so-called social student loan (Dienst Uitvoering Onderwijs, n.d.-b). The following explanation of the study financing system focuses on higher education students and the options available to them. This is because this thesis concentrates on the notion of debt aversion and how this financial preference affects the borrowing behaviour of students in enrolled in higher education in the Netherlands.

### 2.1. Study Financing in the Netherlands

The current study financing system, also known as the social loan system, was introduced on 1 September 2015 for students who started a bachelor or master program for the first time (Landelijke Studentenvakbond, 2020a). The social loan system abolished the basic grant that all students used to receive for the nominal duration of their studies, roughly between 3 and 6 years, and replaced it with a social student loan. The main reason for this reform was the idea that studying increases one's chances on the labour market to such an extent that the government felt that a greater investment by students, and possibly their parents, was justified (van den Berg & van Gaalen, 2021). For students in higher education, study financing consists of a supplementary grant for students from relatively low-income households, the student travel product which enables students to travel for free or at a reduced rate, and the student loan. Both the supplementary grant and the travel product were not reformed and remained part of the system to ensure accessibility to higher education. Additionally, students

have access to a tuition fee credit, allowing them to borrow extra money to pay their tuition fees. The exact amount of credit depends on whether the student pays the statutory or institutional tuition fee (Dienst Uitvoering Onderwijs, n.d.-a). Moreover, considering debt aversion and the use of debt avoiding mechanisms such as part-time work, the conditions of the social loan system allow students to earn an unlimited amount in addition to their student loan and/or supplementary grant, without affecting the monthly amounts of these aids. However, this is not the case for students to whom the former study financing system applies as they are subject to an additional-earnings limit (Dienst Uitvoering Onderwijs, n.d.-b).

As mentioned in the introduction, borrowing money is a widely used instrument to finance postsecondary education among students enrolled in the Netherlands. This is largely due to the low interest rate, currently at 0.00%, and to the duration of the repayment phase. The interest rate is fixed for 5 years after the completion of the study. Moreover, the maximum amount students can borrow as of January 2022 is €1023 per month, but this is subject to change or exceptions such as access to the additional tuition fee credit (Ministerie van Onderwijs, Cultuur en Wetenschap, 2021a; Dienst Uitvoering Onderwijs, n.d.-b). As for the repayment phase, students do not have to repay their debt immediately after completing their studies. DUO assigns a two-year 'start-up phase' starting on 1 January of the following year after graduation. Although no debt has to be repaid during this period, the actual interest continues to accrue. After these two years, the 35-year repayment phase commences during which the debtors must make monthly payments that depend on the total amount of debt and the interest rate. However, not all debt has to be repaid at all times. Both the supplementary grant and the student travel product are converted by the government into a 'gift', if a student obtains their diploma within 10 years from the first month in which the student received study financing (Dienst Uitvoering Onderwijs, n.d.-b; van den Berg & van Gaalen, 2021).

### 2.2. The Impact of the Pandemic on Higher Education and Youth Unemployment

Since the outbreak of the coronavirus, the pandemic has severely disrupted the international education sphere and the previously intact labour markets. Two overarching effects are of concern to students in higher education, namely the transition to online education and the increasing nature of youth unemployment. Both effects are explained in more detail below.

Firstly, the transformation to online education disrupted the organization of education in such a way that, together with the restrictions on internships and studying abroad, students are no longer able to meet the obligations of their study curriculum. This does not only affect their mental health but it especially hinders their study progress (van Engelshoven & Slob,

2021, pp. 1-2). Qompas, a Dutch company specialized in study and career development, conducted a survey showing that 85% of the 1000 first-year participating students named online education due to the pandemic as the main factor in their decision to stop studying. Additionally, these students attributed their decision to factors such as the lack of motivation and the inability to keep up with their courses as a result of online education (van der Aa, 2021a). ResearchNed, an independent research institute, conducted research among circa 11.500 students which revealed similar results, namely that a quarter of the students are not content with the quality of online education and that most students experience a lack of concentration and motivation as well as socio-emotional problems. This is largely due to lack of socialization and interaction with fellow students and teaching staff (NOS, 2021). These findings are in line with those of Statistics Netherlands (CBS), which show that 51.5% of WO students and 40.4% of HBO students strongly miss going to their educational institutions. Additionally, more than half of HBO students aged 18 to 22 (53.7%) and around 42% of WO students in the same age group state that they are more stressed due to the pandemic and its effect on education (Kloosterman et al., 2021).

Furthermore, the Dutch Education Inspectorate issued a report on the consequences of the corona crisis for higher education which shows that 31.3% of the participating students suffered study delays as a result of the pandemic and related measures. The Inspectorate concluded that HBO students suffered more study delay than WO students, namely 34.2% of HBO students compared to 25.7% of WO students (Inspectie van het Onderwijs, 2021, pp.31-34). Moreover, 46.6% of HBO students maintained their study progress while 55% of WO students did so (Inspectie van het Onderwijs, 2021, p. 34). This conclusion may point to the difference in teaching methods between HBO and WO studies. Whereas HBO studies are more practice-oriented and require more hours on campus, WO studies focus more on doing actual research, which requires more independence, and therefore offer less guidance and less on-site teaching (Stichting Studiekeuze 123, n.d.-a). Additionally, both the abovementioned restrictions and the travel restrictions imposed by a multitude of countries have limited or temporarily eliminated the chances for students to gain experience: two thirds of students in Dutch higher education have either postponed, cancelled or shortened their plans for their mobility period abroad (OECD, 2021; Nuffic, 2021). These limitations not only hamper their study progress but also their (future) transition from being a student to starting their career.

Secondly, although youth unemployment in the Netherlands fell significantly in the first and second quarters of 2021, young people and therefore also students are disproportionately affected by the pandemic, both short-term and long-term (Statistics

Netherlands, 2021). This is largely due to lockdowns and the associated closure of business sectors, such as the hospitality industry, which have significantly reduced the number of available jobs and led to students being laid off (RTL Z., 2021b). The reason for this is that students are often active in a labour market "characterised by the prevalence of short-term contracts (gigs) or freelance work" and thus flexibility (Webb et al., 2020, p. 1010). Because of this flexibility, students, who balance their study obligations with work and private life, often work on a temporary or part-time basis, which happen to be the jobs that are part of the sector most affected by the pandemic, namely hospitality (RTL Z., 2021b; OECD, 2021). Moreover, many employers are "reluctant to hire young people at a time when economies are weak and profits are down, mirroring patterns seen during most economic downturns" (OECD, 2021). Thus, youth unemployment must be tackled because the social and individual costs of unemployment are considerably high, in particular long-term unemployment could deprive students of the skills and knowledge essential for their future careers (van Engelshoven & Slob, 2021; Erken, 2011; RTL Z, 2021a).

The abovementioned developments lead to considerable financial pressures, such as the loss of income, forcing students to adapt their financial behaviour (NOS, 2020). On average, students have lost a monthly income of €530 as a result of job loss (Landelijke Studentenvakbond, 2020b). Moreover, Nibud (2021) found that 31% of the students who participated in their research on the financial affairs of students in higher education (N=1505) were able to work less due to the pandemic (p. 46). Furthermore, it appears that 12% of students in higher education have lost their jobs, 7% borrow less because they spend less, and 6% borrow more to compensate for their loss of income (Nibud, 2021, p. 46). Taking into account these consequences, which could worsen over time, it is vital to provide recovery and perspective for students and other youth, especially in terms of their educational and financial well-being (Moxon et al., 2021, pp. 31-32). The Dutch Ministry of Education, Culture and Science has taken action to mitigate the effects of the closure of educational institutions through the implementation of a support program for education. The aim of this program is to financially compensate students of different educational levels for the inconveniences they experienced in not being able to fully enjoy their education due to external circumstances i.e., the pandemic. The compensation is granted through measures such as a 50% reduction in *statutory* tuition fees for the 2021-2022 academic year, which is granted in advance. The only eligibility criterion is to apply for or be enrolled in publicly funded higher education (Van Engelshoven & Slob, 2021; Ministerie van Onderwijs, Cultuur en Wetenschap, 2021b).

### 2.3. Existing Academic Literature

To examine the relationship between debt aversion and student borrowing behaviour in times of crisis, i.e., the pandemic, the notion of economic shocks must be set out. This is because there is much concern about the impact of the pandemic, which can be classified as an economic shock, and "whether there will be any structural legacy" resulting from it (Carlsson-Szlezak et al., 2020). Despite the lack of a general consensus in academia, an economic shock can be defined as "any unexpected event that has a large-scale, unexpected impact on the economy" that is principally exogenous i.e., due to external factors originating outside the economy (Reed, 2020). Moreover, as the term "large-scale" indicates, economic shocks affect large parts of the economy or the economy as a whole (Reed, 2020). Therefore, it is vital to draw a comparison between the pandemic and the 2008 financial crisis. These crises are similar in that they "damage an economy's supply side, and more specifically, capital formation" which includes the labour market and its workers (Carlsson-Szlezak et al., 2020). This comparison is addressed later, focusing on the influence on borrowing behaviour.

The pandemic classifies as an economic shock due to the aforementioned rising youth unemployment and the general massive decrease in both national and international employment. That said, given the focus of this thesis, this section concentrates on the events in the Netherlands. In the first quarter of 2020, there was an increase in the number of available jobs and a decrease in the unemployment rate. However, in the second quarter, right after the outbreak of the coronavirus in the Netherlands, these developments reversed with a 26% increase in the number of unemployed people compared to the first quarter, representing an additional 72.000 unemployed. Similarly, the number of unfilled vacancies decreased by 30% by the end of the second quarter as some jobs could only be filled partially or not at all. These developments are mainly evident in the hospitality sector which, as mentioned, is one of the sectors most affected by the pandemic, especially in terms of job losses (Centraal Bureau voor Statistiek, 2020). Hence, these events affect the position of students on the labour market, which in turn affects their financial situation and thus their financial behaviour. However, it should be emphasized that the way in which students react to times of crisis and financial turmoil depends primarily on other determinants, namely their (financial) skills and preferences. Therefore, the following sections focus on the role of financial literacy and the influence of financial distress and hardship on overall financial behaviour. This, in view of the research question and students' financial preferences, is followed by an in-depth exploration of the notion of debt aversion in relation to student borrowing behaviour.

### 2.3.1. The Level of Financial Literacy

A study by Lusardi et al. (2020) shows that financial literacy, which denotes the possession of knowledge and skills to make sound financial decisions, determines the ability "to deal with the financial decisions needed to navigate through a financial crisis" (p. 181). The authors show that the level of financial literacy is particularly low among groups such as the unemployed, the less educated and lower-income individuals. This could be due to a lack of access to necessary information, but especially due to existing financial vulnerability. In times of crisis and financial turmoil, this vulnerability makes it more difficult to make sound financial decisions, as such circumstances create further turmoil (Lusardi et al., 2020, pp. 182-184). The correlation between financial literacy and future financial distress is robust after having "[controlled] for confounding variables, such as income and education" which affect both financial literacy and financial prospects (p. 185). Accordingly, Lusardi & Mitchell (2014) show that education is a key determinant of financial literacy (p. 20). As the level of education increases, so does the degree of financial literacy. This showcases a positive correlation. However, this correlation not only depends on the skills needed to make financial decisions, but on demographics such as gender and domicile as well (Lusardi & Mitchell, 2014; Klapper & Panos, 2011; McArdle et al., 2009).

The positive correlation is affirmed by De Bassa Scheresberg (2013) who highlights that, even though "financial literacy is shown to increase with education", the results suggest otherwise as graduates with a higher education degree "display very low levels of financial literacy" (p. 1). Nevertheless, in relation to financial behaviour, it appears that higher education graduates are "less likely to use high-cost methods of borrowing and more likely to have a stock of precautionary savings", which is determined by the level of financial literacy (de Bassa Scheresberg, 2013, p. 17).This shows a positive correlation between financial literacy and taking precautions, and a negative correlation between financial literacy and the use of high-cost borrowing methods. Moreover, with income being a predictor of financial behaviour and financial literacy, young adults are more likely to use borrowing methods and less likely to take precautionary measures if they recently experienced a shock in income (p. 17). Hence, there is a positive correlation between the educational level and financial literacy, which in turn positively correlates with taking precautions. However, these correlations are unlikely to hold in times of crisis and economic shocks, given the financial pressures these events create. In terms of academic relevance, however, the author's approach of solely studying the 25-34 age group leaves a gap in the literature. This thesis aims to fill this gap by also examining the financial behaviour of higher education students, often under 25.

### 2.3.2. Times of Crisis and Financial Distress

Fan and Chatterjee (2019) emphasize that not only financial literacy affects people's financial behaviour but financial "stressors", causing financial hardship, ought to be taken into account as well, especially when considering how someone might alter their financial behaviour to cope with such events (p. 76). An example of a financial stressor is loss of income due to a layoff. The experience of such stressors is likely to lead to unfavourable financial behaviour such as not partaking in debt avoiding mechanisms and refraining from taking precautions. Hence, crises, which likely lead to financial troubles, are positively correlated with 'negative' financial behaviours (Fan & Chatterjee, 2019; Fan, 2017; Kahn & Pearlin, 2006). To explore how students respond financially to crises such as the pandemic, it is essential to compare the pandemic with a previous crisis in terms of economic and financial impact. Li et al. (2021) stress that the corona crisis differs greatly from previous pandemics in its "unprecedented impact on the labour market and consumer market", making it similar to the Great Recession of 2008 (p. 1). Although the pandemic may be considered worse in terms of overall economic impact, as it is called "de-globalization in the making" due to border restrictions, both the pandemic and the financial crisis can be classified as economic shocks. In fact, both caused a sharp rise in unemployment, showcasing an indicator for an economy in in recession (p. 2).

O'Neill and Xiao (2012) studied the financial behaviour of Americans before and after the 2008 financial crisis by relying on crisis theory (p. 35). This theory defines a crisis as "a threat to homeostasis or baseline functioning where an individual's equilibrium and normal and familiar coping mechanisms are overwhelmed by the circumstances" (O'Neill & Xiao, 2012, p. 35). It is a temporary and unruly situation that generates financial distress which may affect an individual, a specific group or a population and their behaviour as they face problems beyond their ability to cope (O'Neill & Xiao, 2012; Caplan, 1964). The latter forces individuals to adapt their financial behaviour. Study shows that the 2008 recession and its aftermath had a notable impact on people's financial behaviour, especially in terms of the use of 'positive' financial behaviours (O'Neill & Xiao, 2012, pp. 42-43). This is supported by Bricker et al. (2011) who show that people are more cautious in the post-crisis period. This is evidenced by their "desire for less risk and for higher reserve savings" (p. 18). Moreover, these positive financial behaviours put individuals in a less vulnerable position should they encounter financial distress again. They do so by considering the importance of long-term and future impact on their financial position, especially in view of potential crises (O'Neill & Xiao, 2012, p. 43). In other words, students who have experienced times of crisis "bear more individual responsibility for securing their financial future" (Serido et al., 2014, p. 310).

McEwen (1998) argues that responses to crises differ from person to person and depend on someone's perception of the situation at hand. For example, the aftermath of the Great Recession of 2008 caused great financial strain on students. Developments such as the sharp rise in unemployment, associated job uncertainty and students facing "mounting college loan debt" can be interpreted as a threat to which students must respond (Serido et al., 2014; McEwen, 2008). Such threats are a decisive factor for students to adapt their financial behaviour to navigate through a crisis. Financial behaviour to deal with financial distress is conceptualized into three categories, namely reactive, preventive and proactive behaviour. Reactive behaviours focus on "[managing] immediate changes in financial conditions" such as instantly cutting expenses, preventative behaviour "[minimizes] future financial strain" through money management and budgeting whereas proactive behaviour "[promotes] future goals" by saving and investing (Serido et al., 2014, pp. 311-312).

Similarly, Serido et al. (2014) found that financial distress is the main determinant for students to alter their financial behaviour (p. 313). Correspondingly, they found a positive correlation between the experience of financial strain and the use of reactive behaviour, and a negative correlation between financial strain and proactive behaviour (p. 313). Thus, in financially stressful situations, students are most likely to focus on the present and adjust their behaviour accordingly, even though this "may not be adaptive in the long-run" (p. 314). A potential response, to cope with financial turmoil, is to cut back or borrow money without considering the consequences, such as the conditions attached to taking out a student loan. However, as briefly mentioned in the introduction, not every individual is willing to borrow money. For example, some students do not have the resources or financial support to pay for their education and would rather work than borrow to finance their studies, while other students in a similar situation do not share this perspective and would take out student loas. This stems from their financial preferences, such as their attitude towards future uncertainty, risk and specifically debt. This is where the notion of debt aversion comes into play.

### 2.3.3. Debt Aversion and Student Borrowing Behaviour

Cunningham and Santiago (2008) state that governments offer students the option to take out student loans with the aim to "make post-secondary education more affordable and accessible to all students" (p. 8). Although the authors focus on students about to enter higher education, there are common determinants for students to decide whether or not to take out student loans. The main factor is aversion to borrowing which is defined as the "unwillingness to take a loan to pay for college, even when that loan would likely offer a positive long-term

return" (Cunningham & Santiago, 2008, p. 10). This notion is based on the idea that some individuals are risk averse and/or "shortsighted" loss averse, meaning that they are unwilling to invest in something if there is no future guarantee or immediate benefits (p. 10). When it comes to investing in an academic career, there is no guarantee that students will graduate, find a job and become successful. Moreover, the benefits of a higher education degree usually only appear in the future. Consequently, loss averse students are likely to compare the benefits of a higher education degree with "the immediate cost of a student loan" (p. 10).

Similarly, Eckel et al. (2007) examine the role of debt aversion and the experience with debt "in the decision to take up subsidized loans for postsecondary education" (p. 233). In view of the research question, this concerns students and their attitudes towards debt and investment in human capital i.e., their educational foundation. Most importantly, they state that debt-averse people "may underinvest in human capital" even when the opportunities to borrow money are readily available (Eckel et al., 2007, p. 234). However, they emphasize that the underinvestment in human capital, in this case not taking out a student loan, could be due to other reasons as well. These include the lack of information and future guarantees, existing liquidity constraints or the fact that some people are simply unwilling to borrow for the sole purpose of "[acquiring] additional human capital" (p. 235).

The notion of debt-aversion is central to their study and is composed of two aspects: the simple aversion to any form of debt and the fact that people might already have debt which means that "additional debt is not desirable to them, regardless of the return to investment in education" (p. 235). Strikingly, in contrast to the other literature about debt aversion, Eckel et al. (2007) argue that "debt aversion is not a barrier to investing in postsecondary education" and thus "plays little or no role in the demand for postsecondary education finance in the form of a loan" (pp. 258-259). Furthermore, the authors conclude that highly indebted individuals are more likely to take out a loan, which they view as another reason why debt aversion is not considered a barrier to investing in one's educational foundation (p. 258). Based on these findings, it could actually be concluded that, if not carrying the burden of a large debt were a measure of debt aversion, debt aversion is a determinant of student-loan take up (Oosterbeek & van den Broek, 2009, p. 171). Henceforth, to examine the relationship between debt aversion and students' borrowing behaviour in times of crisis, this thesis employs the additive index developed by Eckel et al. to measure one's degree of debt aversion. This particular method will be outlined in the methodology.

Cunningham and Santiago (2008) argue that not all students decide not to take out a loan because they are averse to borrowing, but because they have obtained or could obtain

other means to fund their education (p. 26). This could be achieved by debt avoiding acts such as working part-time or full-time during their studies, living with their parents for the duration of their studies and/or, if they are eligible, applying for a study grant or scholarship. For example, students who are older than the average higher education student – "age 30 and above" – are likely to use other means than borrowing. This is because they can pay for their education themselves with their current income and savings (p. 17). Furthermore, although borrowing is common among students in the Netherlands, lots of students prefer to work part-time or full-time to borrow as little as possible or not borrow at all (Booij et al., 2012, p. 36).

However, there is a negative correlation between the number of working hours and students' academic achievement as well as a negative correlation between the number of working hours and the probability of obtaining "a good degree" (Callender, 2008, pp. 371-372). Kalenkoski and Pabilonia (2010) build on these results by stressing the negative correlation between term-time employment and academic achievement could lead to a study delay longer (pp. 486-487). This is because students spend part of their time working which "reduces time available for attending classes, studying, or participating in other schooling-related activities" (p. 470). Hence, although working provides students with the means to fund their education, student employment has a detrimental effect on their academic performance and, consequently, on their study duration. This entails additional costs that may lead students to take out loans or, if they already have one, to increase the monthly amount.

Callender and Jackson (2008) examine the influence of financial constraints, for example due to the lack of parental wealth, and the fear of debt on student enrolment in higher education (p. 405). When addressing the notion of debt aversion, the authors argue that "students from lower-income families are more sensitive to the costs of higher education than students from wealthier backgrounds", which makes the former more likely to view higher education "in terms of unacceptable debt accrual rather than a beneficial investment" (p. 406). This argument is reinforced by their observations, which exhibit that the financial decisions of students from low(er)-income households are driven by their preferences towards debt (Callender & Jackson, 2008, p. 426). Hence, this shows that debt aversion is higher among low(er)-income students than among students from affluent backgrounds. This argument is strengthened by Oosterbeek and van den Broek (2009) who analysed the borrowing behaviour of students in Dutch higher education before the current social loan system (p. 170). They also concluded that students from high(er)-income households and those who receive parental financial support are less likely to borrow compared to the students who are not in such a position (Oosterbeek & van den Broek, 2009, pp. 172-173).

Furthermore, Oosterbeek and van den Broek (2009) emphasize that standard economic theory offers a plausible but limited explanation for the relatively low level borrowing behaviour among students at that time (pp. 170-171). This is because "even students who are certain about study completion and job prospects, who are prepared to take risks and who have sufficiently high discount rates, have a low probability to borrow" (p. 171). Because of this limitation, they stress the need to consider individuals' attitude towards borrowing and the uncertainty associated with investing in the future (p. 173). Accordingly, they employ the behavioural economics model that "assumes that causality runs from debt aversion to borrowing behaviour", meaning that it can rule out the possibility that "having debts affects individuals' attitudes" (p. 174). This reinforces that debt aversion is a significant determinant of financial behaviour. Moreover, when considering demographic characteristics other than parental wealth, they found that students with a university degree are more likely to borrow money. This is because their level of education provides "better earnings prospects" and thus a sense of security about their future ability to repay the debt (p. 176).

De Gayardon et al. (2019), who examine the determinants of student loan take-up in the UK, strengthen the abovementioned arguments by highlighting the significance of "students' family characteristics" and demographics such as parental wealth, living at home and gender for one's degree of debt aversion (pp. 969-971). The study confirms that students from a financially comfortable household are able to "escape the burden of student loans" (de Gayardon et al., 2019, p. 973). This is supported by Long (2021), who finds that "family income is an important predictor of willingness to borrow", with the willingness to borrow used as a proxy for debt aversion (p. 11). This reaffirms that the degree of debt aversion is higher among low(er)-income students than among students from wealthy backgrounds. Furthermore, with regard to gender, female students are less willing to borrow and therefore less likely to take out student loans compared to their male counterparts (Long, 2021, de Gayardon et al., 2019, Oosterbeek & van den Broek, 2009). These individual characteristics will be accounted for in the methodology and the subsequent empirical analysis.

Moreover, as students may choose to live at home to minimize their student debt, research has shown that there is a negative correlation between living at home and student loan take-up. The probability of students who live with their parents taking out a student loan is "11.5 percentage points lower than those of their peers who never lived at home" (de Gayardon, 2019, p. 975). Hence, these results suggest that students' backgrounds play an important role in the use of debt avoiding mechanisms and therefore in their borrowing behaviour. However, it must be emphasized that due to excessive travel distances, not all

students are able to stay home. This makes it difficult for these students to minimize the cost of their education, especially if they do not receive parental support.

In view of the current social loan system, van den Berg (2019) draws a comparison between the situation before and after the 2015 study financing reform, showing that the probability of students deciding to leave their parental home "decreased by approximately 45%" (p. 10). This probability is averaged out as it depends on the income group, with the probability of leaving their parents decreasing more for lower-income students than for middle- to higher-income students. This suggests that students who use debt avoiding mechanisms do so to minimize the "financial costs and risks of studying" (van den Berg, 2019, pp. 10-11). Hence, the introduction of the social loan system has led students to adjust their financial behaviour to be more mindful of their current spending and their financial future, regardless of their financial background. Some, however, more than others. The question remains as to how these findings and arguments apply in examining how debt aversion impacts student borrowing behaviour in times of crises, specifically the pandemic.

As mentioned earlier, the study delays caused by the pandemic have imposed additional costs on many students in higher education, namely paying tuition fees and living expenses for a longer period than anticipated. For those students who already had student loans, this may have resulted in even higher debts (Ministerie van Onderwijs, Cultuur en Wetenschap, 2021b, p. 15). In spite of the fact that debt-averse students are not likely to borrow money and that the majority of students currently in publicly funded higher education have enjoyed a halving of their tuition fees as a result of the national support program, this series of events and the associated effects brought about by the pandemic are expected to encourage debt-averse students to engage in 'unfavourable' reactive behaviour. This is contrary to the purpose of financial compensation, which is to alleviate the financial distress of these students and thus supress the effect of the pandemic. In the following section, the expectations and predictions are presented in the form of tentative statements i.e., hypotheses.

### 2.4. Setting Out the Hypotheses

Following the exploration of the current study financing system, the direct and indirect effects of the pandemic and the review of the existing academic literature, which jointly form the theoretical basis for this thesis, the subsequent empirical analysis is guided by the following hypotheses.

**Hypothesis 1:**

> *$H_0$: The level of debt aversion among students in higher education has no impact on their borrowing behaviour in times of the pandemic.*
>
> *$H_1$: The level of debt aversion among students in higher education has a negative impact on their borrowing behaviour in times of the pandemic.*

According to the academic literature and the theory, the most important factor for individuals when deciding whether or not to borrow money, for example by taking out a student loan, is the concept of debt aversion. Some people are simply unwilling to invest in something that yields no immediate benefits or future guarantees, such as investing in their educational base (Cunningham & Santiago, 2008; Eckel et al., 2007). Accordingly, hypothesis 1 indicates that this thesis expects a negative correlation between debt aversion among students and their borrowing behaviour. In other words, students who are debt-averse, and therefore more likely to adopt debt avoiding strategies and take precautionary measures such as saving, borrow less than students who are indifferent towards debt. Whilst this hypothesis is mainly confirmatory in nature, hypotheses 2 and 3 add to the existing literature by focusing on the effects of a current phenomenon, namely suffering from a study delay and being fired as a result of the COVID-19 pandemic.

**Hypothesis 2:**

> *$H_0$: Having suffered a study delay as a result of the COVID-19 pandemic has no impact on the effect of the degree of debt aversion on student borrowing behaviour.*
>
> *$H_1$: Having suffered a study delay as a result of the COVID-19 pandemic moderates the effect of the degree of debt aversion on student borrowing behaviour.*

**Hypothesis 3:**

*$H_0$: Having been laid off as a result of the COVID-19 pandemic has no impact on the effect of the degree of debt aversion on student borrowing behaviour.*

*$H_1$: Having been laid off as a result of the COVID-19 pandemic moderates the effect of the degree of debt aversion on student borrowing behaviour.*

Both Hypothesis 2 and 3 are concerned with the impact of the pandemic and are based on the assumption, grounded in the academic literature, that times of crisis generate financial stress and turmoil that can influence students' financial behaviour (Fan & Chatterjee, 2019; Serido et al., 2012; O'Neill & Xiao, 2012). Although students in higher education are assumed to be financially literate and thus capable of making responsible financial decisions, unfortunate occurrences such as a loss of income due to external circumstances cause these individuals to resort to the use of borrowing methods instead of taking precautions to save themselves financially (de Bassa Scheresberg, 2013; Lusardi & Mitchell 2014). Accordingly, these hypotheses presume that the financial turmoil and the direct experience of its consequences will offset these students' preferences and attitudes towards debt. Therefore, whether or not students have suffered a study delay and whether or not they have been laid off as a result of the pandemic are incorporated as moderating variables in the relationship between debt aversion and student borrowing behaviour. According to Hefner (2018), a moderating variable is "a variable that can strengthen, diminish, negate, or otherwise alter the association between independent and dependent variables" (p. 1).

Hence, in view of the second and third hypotheses, the experience of a study delay or layoff is expected to mitigate the effect of debt aversion on student borrowing behaviour i.e., as the degree of debt aversion increases, students who have suffered a study delay or layoff are expected to borrow relatively more than when they have not. Thus, assuming that there is a negative correlation between the degree of debt aversion and student borrowing behaviour, the negative effect is expected to become smaller. Nevertheless, there are other factors that are not of direct relevance to the aim of this study, but ought to be taken into account as they may be of influence on the result, such as the receipt of parental financial support. The way in which these factors are incorporated is explained in the next section on the methodology.

# 3. Methodology

This thesis examines how the degree of debt aversion impacts the borrowing behaviour of students enrolled in Dutch higher education in times of the ongoing COVID-19 pandemic. In order to answer the research question, this thesis employs a pragmatic quantitative approach. The purpose of this approach is to collect the necessary data by means of a survey, to provide descriptive statistics that describe and summarize the collected data in relation to the research problem, to perform a regression analysis to see if there are any correlations, ideally statistically significant, and to draw conclusions from these findings. Before going into detail about the method of analysis, the following sections discuss the survey and its implementation, consisting of the process of distribution and data collection, followed by an explanation of the target sample of this study and how the survey accounts for this.

## 3.1. Survey Implementation and the Sample

Bearing in mind that the pandemic is ongoing, the most appropriate method to collect the necessary data is a web-based survey. This is not only because the survey can be distributed via a weblink easily accessible to the respondents, but also because it does not require any direct form of interaction with the respondents. This makes the survey contactless and therefore safe to conduct. Furthermore, an online survey allows for the data to be directly stored in an online database in compliance with the General Data Protection Regulation. Hence, respondents' answers are not linked to their personal data to ensure that their identity remains confidential in accordance with the protection of personal data as specified by law.

A total of 125 respondents participated in the survey. Since the survey is distributed via a weblink, this is an effective method to maximize the number of respondents. The survey distributed through various online student groups by using social media platforms such as LinkedIn, Facebook and Instagram, and communications platforms such as WhatsApp and Messenger. Additionally, respondents are asked to share the survey with their peers to ensure that the total number of respondents is as a large as possible. As the response rate also depends on the duration of the period of publication, the survey is published for a period of circa two weeks, specifically from 18 January to 2 February 2022. This is to give potential respondents the time and space to complete the survey.

With respect to the target sample of this thesis, it is important to first clarify the target population as the sample is drawn from this population. The population of this study consists of students who are currently enrolled in higher education in the Netherlands, irrespective of

their demographic characteristics, such as age, gender and country of origin, as well as their individual characteristics surrounding their enrolment in higher education e.g., type of study program and field of study. Despite the broad nature of the target population, there are some conditions that the participants must fulfil to be part of the representative sample. To ensure that the 'desired' respondents complete the survey and thus become part of the sample, the survey includes three questions to filter out those students who do not meet the criteria for inclusion in the sample, referred to as the "target group" in the survey itself. The following section elaborates on these filtering questions and the corresponding conditions. Nevertheless, the aim is to have a sample as evenly distributed as possible to safeguard its representative nature. This is to ensure that the conclusions drawn from this survey initiative, and the study as a whole, can be generalized across all students in Dutch higher education. Given the fact that the population concerned is fairly wide, the obtained sample is representative to a certain extent. It is representative in the sense that it is a subset of the total population of students enrolled in higher education in the Netherlands. However, as will be highlighted by the descriptive statistics later, the sample portrays a skewed image of the population as the composition is not evenly distributed with regard to certain characteristics, such as gender and type of study program, which reduces its representativeness.[1]

### 3.2. Survey Design and Restricting the Sample

In terms of structure, the survey is made up of 40 questions which includes dichotomous questions, multiple-choice questions with both single and multiple answer possibilities as well as questions using a 5-point Likert scale. These types of questions are used to be easily understood by the respondents and, for the purpose of conducting the empirical analysis, easily quantifiable. Moreover, some questions require students not only to select the applicable answer option, but also to fill in a text entry field related to that particular answer, for example, to specify a monetary amount or an option that is not among the answer options prescribed by the question itself.

Furthermore, to answer the research question, it is essential to base the survey questions on the existing literature and the theory. Therefore, the survey covers a variety of topics ranging from general demographic data and the direct and indirect effects of the pandemic, such as study delays and layoffs, to specific data on students' financial behaviour. The latter mainly concerns borrowing behaviour, the attitude towards debt, the resulting

[1] See Section 4.1.

degree of debt aversion and the use of debt avoiding mechanisms such as term-time employment. All questions included in the survey can be found in the overview of the published survey in Appendix A. Moreover, the notions of financial behaviour, borrowing behaviour and debt aversion will be operationalized in sections 3.3. and 3.4. below.

As mentioned, the survey contains three questions to filter out the students who do not belong to the sample (see questions 3 to 5 in Appendix A). These questions relate to their enrolment in higher education in the Netherlands and to the type of program they are enrolled in. Because of the focus on student borrowing behaviour in times of the pandemic, this thesis restricts the sample to include only those students who are at least "currently enrolled at a Dutch higher education institution" or were enrolled for "at least 1 month in both academic years of 2019-2020 and 2020-2021" (see question 3 and 4 in Appendix A). These criteria are included to ensure that the respondents were studying during the pandemic and may have suffered a study delay as a result. If a respondent does not meet either of these requirements, they are not included in the sample and directed to the end of the survey.

In addition to these restrictions, the sample does not include students who spend their Erasmus or exchange mobility period at an institution of higher education in the Netherlands (see question 5 in Appendix A). The reason for this is that, as mentioned earlier, one of the requirements to be eligible for student financing and the compensatory measures of the support program is to be enrolled in publicly funded higher education in the Netherlands. This does not apply to Erasmus or exchange students as they are exempted from enrolling at the host institution, which must be in a different country from their home institution, and thus from paying the corresponding tuition fees (European Commission, n.d.). Hence, they are not included in the sample because they are not 'officially' enrolled at this Dutch institution.

### 3.3. Operationalization

In view of the research question and the accompanying hypothesis, students' financial behaviour, with emphasis on their borrowing behaviour, must be examined in detail. The use of operationalization is essential in this phase as it stipulates how the concept in question will be measured by specific indicators selected to represent that concept in the best and most accurate way (Toshkov, 2016, pp. 100-102). Table 3.3. below provides an overview of the abstract notions, their encompassing measurement variables and by which indicators they are going to be measured. Moreover, for each of the indicators, the table specifies which question in the designed survey is used to question the respondents about these particular indicators.

**Table 3.3. Operationalization**

| Notion | Measurement Variable | Indicator[2] | Survey Question |
|---|---|---|---|
| Effects of the Pandemic | Study Delay | Whether or not the student/respondent experienced a study delay as a result of the COVID-19 pandemic and the corresponding measures (e.g., lockdowns) | 8 |
| | Layoff | Whether or not the student/respondent was laid off or fired as a consequence of the pandemic | 18 |
| Financial Behaviour[3] | Borrowing Behaviour | Whether or not the student/respondent borrows for non-educational purposes | 24 |
| | | Whether or not the student/respondent borrows for educational purposes (e.g., tuition, books, housing etc.) | 25 |
| | | Monthly amount borrowed in Euros (€) | 27 |
| | | Whether or not the student/respondent currently has a student loan | 28 |
| | | Current amount of student loan in Euros (€) | 29 |
| | | Whether or not the student/respondent had a student loan before the pandemic | 30 |
| | | Former amount of student loan in Euros (€) | 31 |
| | | Whether or not the student/respondent receives the supplementary grant* | 32 |
| | | Whether or not the student/respondent makes use of the student travel product* | 33 |
| | Employment Status | Whether or not the student/respondent currently has a paid job, which can either be part-time or full-time | 14 |
| | | Whether or not the student/respondent had a paid job before the outbreak of COVID-19, which can either be part-time or full-time | 15 |

[2] Each indicator (survey question) is marked as a variable in the dataset.
[3] Although the focus of the research question is on students' borrowing behaviour, borrowing behaviour remains part of the overarching notion of financial behaviour. Therefore, the notion of financial behaviour is mentioned as the abstract concept/notion with borrowing behaviour being one of the encompassing measurement variables.

| | | | |
|---|---|---|---|
| | Parental Financial[4] Support | Whether or not the student/respondent receives/has received parental financial support for their postsecondary education | 19 |
| | | The monthly amount of parental support in Euros (€) | 20 |
| | | Whether or not the tuition fee was paid by parent(s)/legal guardian(s) | 21 |
| | Living Situation[5] | Type of accommodation (e.g., on-campus housing, off-campus housing etc.) | 13 |
| Financial Literacy | Familiarity with National Support Program | The extent to which the student/respondent is familiar with the measures implemented by the Dutch government to financially compensate students for the inconveniences they suffered as a result of the pandemic, based on a 5-point Likert scale | 1 |
| | Awareness of DUO | The extent to which the student/respondent is aware of DUO and what it does for students, based on a 5-point Likert scale | 22 |
| | Knowledge of Study Financing System | Whether or not the student/respondent knows the difference between the social student loan and the supplementary grant provided by DUO | 23 |

*****The grant and the student travel product are included in the operationalization because they may be considered another form of borrowing, or ultimately debt, if the student in question does not complete their education within the period prescribed by DUO. In that case, both forms of study financing will no longer be regarded as 'gifts' from the government and must therefore be repaid in full.

[4] In view of the existing academic literature, both 'Parental Financial Support' and 'Living Situation' are individual characteristics that are of influence on student borrowing behaviour, but they can also be considered debt avoiding mechanisms that are part of their financial behaviour which is why they are included in Table 3.3.
[5] "…"

### 3.4. The Operationalization of Debt Aversion

The last part of the survey addresses the concept of debt aversion (see questions 36 to 40 in Appendix A). This section is based on the work of Eckel et al. (2007) who developed an "additive index" consisting of 7 "questions designed to measure the person's attitude toward borrowing" (p. 246). The index is used to determine whether a student is debt-averse based on a scale from 0 to 7 and the rule that "the higher the value, the more the respondent feels uncomfortable with holding debt" i.e., the more debt-averse the student is (Eckel et al., 2007, p. 253). The questions focus on the "willingness to take on additional debt" with elements such as credit card ownership and borrowing money in case of unexpected expenditures of a specified amount (pp. 246-247). However, contrary to the authors, this thesis distinguishes between borrowing from a private financial institution and from a public institution to be more nuanced. Furthermore, considering debt avoidance, the use of savings is added as an option in case of unexpected expenditures (see questions 39 and 40 in Appendix A).

In the academic article, all questions except the one on paying off monthly credit card balances are reversed items, which means that the scores for the answers are assigned in reverse. However, in this thesis, the sub-questions on the use of savings are not reversed items either. The reason for this is that the use of precautions, such as saving and the use of savings, is a way of avoiding debt and therefore an indicator of debt aversion as highlighted in the theory. Table 3.4. below provides an overview of the additive index and the corresponding questions used in this thesis to measure debt aversion, indicates which questions are reversed items and lists the scores assigned to each answer option.

**Table 3.4. Additive Index of Debt Aversion**

| **Debt Aversion: Questions** | **Assigned Score in Dataset** |
|---|---|
| Do you have a credit card?[6] * | Yes = 0, No = 1 |
| Do you usually pay off your credit card balances/debt each month? (Conditional on having any)[7] | Yes =1, No = 0 |
| In total, how many credit cards with a different bank account do you use? (Conditional on having any)[8] (1 card = 0.25, 2 = 0.5, 3 = 0.75, 4 or more = 1) * | 1 card = 0.75, 2 = 0.5 3 = 0.25, 4 or more = 0 |
| If you had to make an unexpected expenditure of €**500**, - or more, would you do the following?[9] | |

[6] See question 36 in Appendix A.
[7] See question 37 in Appendix A.
[8] See question 38 in Appendix A.
[9] See question 39 in Appendix A.

| | |
|---|---|
| Borrow from a private financial institution (e.g., bank) * | Yes = 0, No = 1 |
| Borrow money from a public financial institution (e.g., student loan provided by government, DUO) * | Yes = 0, No = 1 |
| Use a credit card * | Yes = 0, No = 1 |
| Use your savings | Yes = 1, No = 0 |
| If you had to make an unexpected expenditure of €5000, - or more, would you do the following?[10] | |
| Borrow from a private financial institution (e.g., bank) * | Yes = 0, No = 1 |
| Borrow money from a public financial institution (e.g., student loan provided by government, DUO) * | Yes = 0, No = 1 |
| Use a credit card * | Yes = 0, No = 1 |
| Use your savings | Yes = 1, No = 0 |

*Indicates a reversed item.

In view of the scoring, it must be emphasized that some of the participating students may not own a credit card. Therefore, the questions on paying off monthly credit card balances and the number of credit cards owned by the respondent are conditional on the respondent having a credit card (see Table 3.4. above). The survey automatically redirects these students to the questions about unexpected expenses (see question 36 in Appendix A). Accordingly, students who indicate that they do not have a credit card are assigned a score of 1 in the dataset for both questions. This is based on the assumption that someone who is averse to debt is less likely to own a credit card, and if they do own a credit card, they are likely to pay off the associated monthly debt on time. Therefore, these individuals should score higher on the debt aversion scale.

Moreover, due to the amendments, the additive index of debt aversion contains a total of 11 questions – 3 questions without sub-questions and 2 questions with 4 sub-questions each– as can be seen in Table 3.4. This results in a scale from 0 to 11 and, as with the scale used by Eckel et al., the same rule applies: the higher the value, the more debt-averse the student in question is. That said, to be able to carry out the empirical analysis, this thesis generates a new variable, called "*debtaversion*", which comprises all the questions in the additive index and the corresponding variables in the dataset that constitute the measurement of debt aversion. The use of this validated list of questions and thus the additive index is intended to strengthen the validity and reliability of this study, so that the conclusions can be drawn with confidence and the results reproduced under the same conditions.

[10] See question 40 in Appendix A.

### 3.5. Method of Analysis

Before going into detail about the actual method of analysis, it is important to draw attention to the measurement of the dependent variable, namely student borrowing behaviour. Unlike the measurement of the independent variable, the degree of debt aversion, the measurement of the dependent variable is not as straightforward as there are several variables that reflect student borrowing behaviour. Therefore, to be able to conduct the empirical analysis, a correlation matrix is used to determine which variable(s) from the dataset best reflect and measure borrowing behaviour in light of the research question at hand. Since the dataset contains both categorical and continuous variables, two types of correlation can be used, namely Pearson and Spearman correlation. Hence, depending on the selected variables, it is vital to use the correct correlation method, which will be addressed in section 4.3. below.

To analyse the relationship between the independent variable and the main dependent variable, this thesis defined three hypotheses as laid out in section 2.4. These expectations about the potential correlations between the degree of debt aversion and student borrowing behaviour may or may not be confirmed by means of linear regression analyses performed in Stata. As the name suggests, the regression assumption of linearity must be fulfilled. Further regression assumptions are normality, which means a normal distribution of the residuals or errors, and no multicollinearity. Hence, the data must not exhibit multicollinearity i.e., the independent variable must not strongly correlate with one or more independent variables (UCLA, n.d.-a). Nonetheless, regression is a suitable method to test the hypotheses as it decides "whether or not to reject or provisionally accept" them (Muijs, 2011, p. 7). Accordingly, in view of the three hypotheses, the empirical analysis consists of 7 multiple linear regression models. Each of these models incorporates the dependent variable, the independent variable as well as a multitude of control variables. The latter are variables that are not of direct interest to the research question but should be considered because they might influence the result. In accordance with the theoretical framework, these variables include demographic characteristics, such as gender, as well as characteristics that may influence one's financial decision-making, such as the receipt of parental financial support.

Given that the first hypothesis concerns a bivariate relationship, the first regression model shows the effect of the degree of debt aversion on the borrowing behaviour of students in higher education with the inclusion of demographic control variables. The second model is an addition to the first as it extends the model with financial control variables. The same approach is taken for the second and third hypotheses which address two effects of the pandemic. As briefly mentioned before, these hypotheses involve moderating variables,

namely the experience of study delay and of being laid off. These moderating variables allow for interaction effects between the degree of debt aversion, which is continuous in nature, and the experience of either effect of the pandemic, which are both categorical variables.

Accordingly, the third model incorporates the main effects of the independent variable and the moderating variable, i.e., having or not having suffered a study delay as a result of the pandemic, on the dependent variable. Moreover, it includes the interaction term between debt aversion and the experience of a study delay as well as the demographic control variables. As with the second model, model 4 is complementary to model 3 in that it extends the model to include the financial control variables. The same applies to the fifth and sixth models, apart from the fact that these models replace the experience of a study delay with whether students have been laid off or not. Additionally, the seventh and final model performs a multiple linear regression showcasing the correlation between, on the one hand, student borrowing behaviour and, on the other hand, the degree of debt aversion, the experience of a study delay and being laid off or not. Section 4.4. discusses the regression models and the corresponding correlation coefficients in more detail.

# 4. Empirical Results and Analysis

To reiterate, the aim of this thesis is to examine the relationship between the degree of debt aversion and how this preference towards debt impacts students' borrowing behaviour amid the ongoing COVID-19 pandemic. Accordingly, in the next section, the empirical analysis begins with descriptive statistics with the purpose of summarizing and organizing the dataset – the collected responses from the sample – and its characteristics.

## 4.1. Descriptive Statistics

A total of 125 respondents participated in the survey over the course of approximately two weeks. However, not all respondents and their survey responses are fit to be used in this empirical analysis, as some of them are not included in the target sample. By using the three filter questions regarding their enrolment in higher education and the relevant study program, Tables B1 and B2 in Appendix B jointly show that, of the 125 completed surveys, 118 (=N) are usable. For that reason, the non-useable observations of the respondents excluded from the sample were removed from the dataset. Tables B3 and B4 in Appendix B summarize all relevant characteristics of the sample and describe the dataset in light of financial behaviour and, given the dependent variable of the research question, their borrowing behaviour. Table 4.1. below focuses on the main variables used in the analysis, excluded those related to and included in the debt aversion index. These will be discussed in the next section.

To ensure a high level of representativeness, the aim is to have an evenly distributed sample. However, as shown in Table B3, this is not the case as female students in higher education make up the majority of the sample, namely 66.95%. Furthermore, regarding age as a categorical variable, the vast majority of the sample consists of students under 25 years old. As stated in the theoretical framework, the intention is to enrich the academic literature by analysing exactly that age group. This is certainly possible given that 90.86% of the sample falls within this age group. However, although the other age categories are included as well, the lack of observations for these age categories reduces the representativeness of the sample. Moreover, the majority of the sample, 66.95% (N=79), is currently enrolled in a WO master's program and more than half of the sample, 59.32% (N=70), is enrolled in the study discipline "Law, Legal Studies, Political Science, Public Administration and Governance", reducing the representativeness of the sample.[11] Moreover, students were asked about their country of origin to which only a small fraction of 4.24% (N=5) indicated that they come

[11] See Table B3 in Appendix B.

from a country outside of the EEA. Hence, it can be concluded that almost the whole sample is eligible to pay the statutory tuition fee, the amount of which is much lower than the rate set by the educational institutions themselves, meaning that the vast majority of the sample received a compensatory 50% discount on the tuition fee for the 2021-2022 academic year. This means that the influence on students' borrowing behaviour can be generalized given that the vast majority pays the same amount (N=113).[12] However, one exception remains, namely a female respondent who is currently enrolled in a pre-master's program, meaning that she may be partially or fully exempt from paying the statutory tuition. This depends on the institution and the number of credits (ECTS) to be earned (Universiteit Leiden, n.d.).

In addition to these characteristics, the theoretical framework highlights the importance of factors such as parental wealth, living situation, (term-time) employment and gender for their attitudes and behaviour towards borrowing money, particularly in terms of debt avoidance. Table 4.1. below shows that a majority of 71.19% do not live with their parent(s) or legal guardian(s) and that a large majority receive financial support from their guardians (N=79), with an average monthly amount of €436 excluding tuition fees. It is striking that of these financially supported students, only 64 (81.01%) had their tuition fees paid by their parental figures, as shown in Table B4 in Appendix B. Furthermore, in view of possessing the necessary information to make sound financial decisions, in this case borrowing money, Table B3 shows that students are to a certain extent aware of the compensatory measures of the Dutch government and of the existence of DUO and its operations, particularly the implementation of study financing.

Moreover, because this thesis focuses on student borrowing behaviour in the context of the COVID-19 pandemic, the experience of study delay and layoff as a result are also included in Table 4.1. below. Especially in light of the hypotheses and the corresponding interaction effect of these variables set out in the methodology, it appears that a minority of the sample experienced these effects. 41.53% (N=49) of the sample experienced a study delay and 31.40% (N=27) were laid off as a result of the pandemic and the accompanying measures. The latter percentage is relative as the experience of being laid off does not apply to everyone in the sample as some respondents did not have a job to begin with.

Lastly, since borrowing behaviour is part of the overall financial behaviour of students, Table 4.1. describes the dataset in view of this premise. The survey revealed that

[12] One of these respondents is a woman who is currently enrolled in a pre-master's program, which means that she may be exempt from paying the statutory tuition fee or part of it (see Table B5 in Appendix B).

students borrow for both educational and non-educational purposes, leading to a mean of €880,21 a month. Together with the observation that 62 students (52.54%) currently have a student loan and 65 students (55.08%) had a student loan before the outbreak of the pandemic, this reflects and confirms that borrowing money is common among students in the Netherlands. Strikingly, the average monthly amount of student loan has increased by roughly 100 euros since the outbreak of the coronavirus in the Netherlands, as shown in Table 4.1. The mean has risen from €689,38 to €781,02. This is a valuable indicator of the impact of the pandemic on students' borrowing behaviour. However, as the descriptive statistics merely presents the distribution and features of the variables in the dataset, but not any actual effects or correlations between variables, regression analyses will be conducted in section 4.4. in order to show, or reject, a potential relationship between the independent, dependent and moderating variable. Nevertheless, before doing so, the following section considers the distribution of debt aversion among the students included in the sample. This is followed by a correlation matrix to determine which variables can best be used to measure the borrowing behaviour of students in Dutch higher education i.e., the dependent variable.

**Table 4.1. Main Descriptive/Summary Statistics of the Dataset**

| Variable | Frequency | Relative freq. (%) | Mean (*SD*) |
|---|---|---|---|
| **Gender** | | | |
| Male | 38 | 32.20 | |
| Female | 79 | 66.95 | |
| Prefer not to answer | 1 | 0.85 | |
| **Parental support**[13] | | | 436.11 (*379.74*) |
| Yes | 79 | 66.95 | |
| No | 39 | 33.05 | |
| **Current Living Situation**[14] | | | |
| Living with parent(s)/legal guardian(s) | 34 | 28.81 | |
| Not living with parent(s)/legal guardian(s) | 84 | 71.19 | |
| **Current Employment Status**[15] | | | |
| Employed | 76 | 64.41 | |
| Unemployed | 42 | 35.59 | |
| **Study Delay** | | | |
| Yes | 49 | 41.53 | |

[13] The mean and standard deviation (*SD*) are based on 53 respondents. This is because 26 of the 79 respondents who receive parental support preferred not to disclose the monthly amount (see Table B6 in Appendix B).
[14] See Table B3 in Appendix B: Current Living Situation is based on Type of Accommodation.
[15] See Table B4 in Appendix B: Current Employment Status is based on Current Job.

| | | | |
|---|---|---|---|
| No | 69 | 58.47 | |
| **Layoff**[16] | | | |
| Yes | 27 | 31.40 | |
| No | 59 | 68.80 | |
| **Monthly Borrowing Amount**[17] | | | 880.21 (*903.47)* |
| **Current Student Loan**[18] | | | 781.02 (*264.74)* |
| Yes | 62 | 52.54 | |
| No | 56 | 47.46 | |
| **Student Loan Before the Pandemic**[19] | | | 689.38 (*306.21*) |
| Yes | 65 | 55.08 | |
| No | 53 | 44.92 | |

### 4.2. Debt Aversion Index

Since the degree of debt aversion is the independent variable of this study, it is essential to examine the composition and distribution of the dataset in terms of the additive index and its questions. As mentioned in the methodology, respondents were asked a total of 11 questions that collectively determine the respondent's level of debt aversion on a scale of 0 to 11. The higher the score on this scale, the more debt-averse the student in question is. Table B10 in Appendix B shows how each of the questions in the index were answered by the sample. It is notable but expected that as the specified amount of unexpected expenditure increases from 500 to 5000 euros, the willingness to borrow increases. For example, Table B10 shows that for an unexpected expense of €500, only 4 students are willing to borrow from a private financial institution, whereas 39 students are willing to borrow from a public institution. In the case of an unexpected expenditure of €5000, the number of students willing to borrow privately rises to 40 and the number of students willing to borrow publicly rises to 57.

With respect to the degree of debt aversion, Table 4.2. below indicates that the lowest perceived score of debt aversion among the respondents is 3.75 and the highest is a score of 11. Based on the full sample (N=118), the average debt aversion score amounts to 8.963. Table B11 in Appendix B shows that an overwhelming majority of the sample scores higher

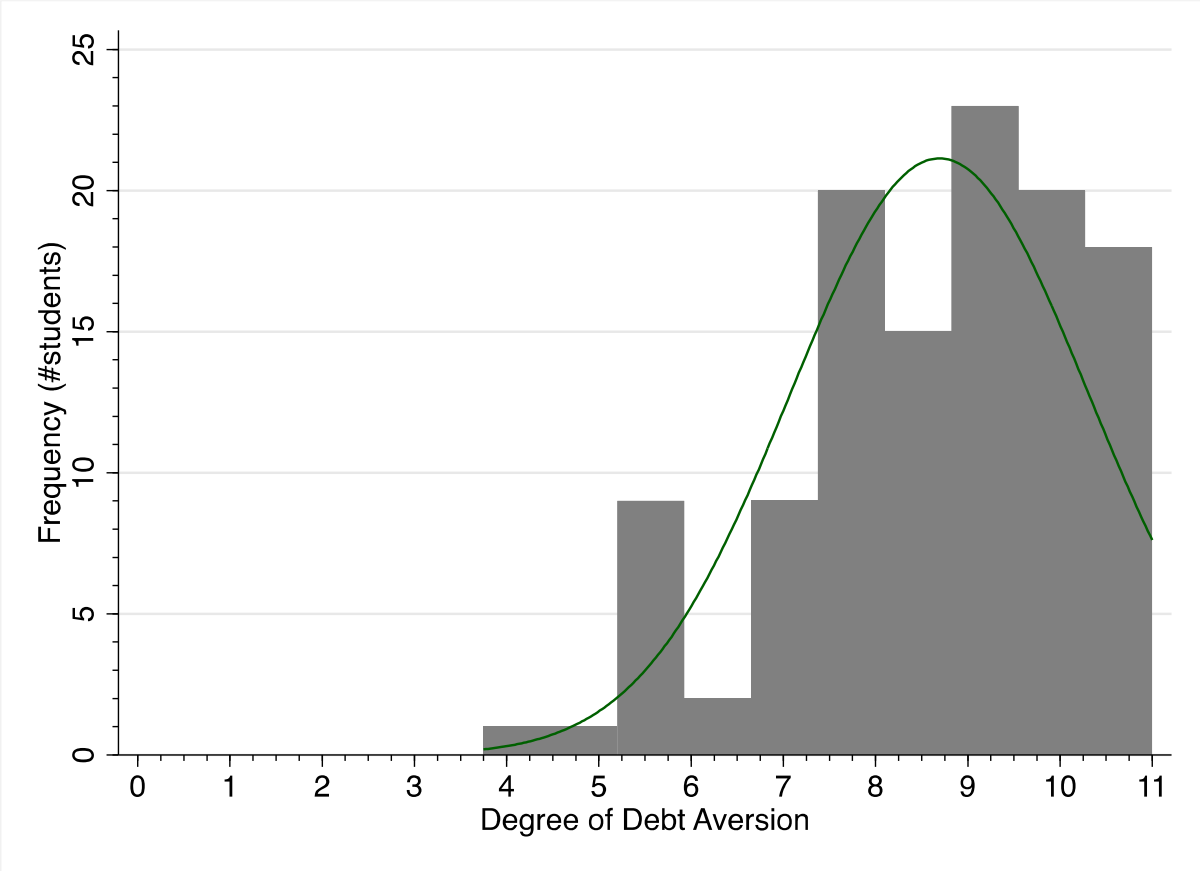
[16] Of the 118 respondents included in the sample, 32 indicated that the question was not applicable to them as they did not have a job prior to the outbreak of COVID-19 (see question 18 in Appendix A).
[17] The mean and standard deviation (*SD*) are based on 57 respondents. This is because 14 of the 71 respondents that borrow(ed) money for non-educational purposes, educational purposes or both preferred not to disclose the monthly amount of parental support (see Tables B4 and B7 in Appendix B).
[18] The mean and standard deviation (*SD)* are based on 56 respondents. This is because 6 of the 62 respondents who currently have a student loan preferred not to disclose the monthly amount (see Table B8 in Appendix B).
[19] The mean and standard deviation (*SD)* are based on 56 respondents. This is because 9 of the 65 respondents who had a student loan before the outbreak of COVID-19 preferred not to disclose the monthly amount (see Table B9 in Appendix B).

than 7.5 on the debt aversion scale. This is also reflected in the visual representation of the degree of debt aversion among the participating students, as illustrated in Figure 4.2. below. Given the scale from 0 to 11, these observations show that the students have a moderate to strong aversion to debt. Moreover, the relatively low standard deviation of 1.614 and the normal density plotted in Figure 4.2. jointly show that, with a few exceptions, the respondents do not differ greatly in their ratings on the debt aversion scale.

**Table 4.2. Univariate Statistic of the Degree of Debt Aversion**

| Variable | Obs. | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Debtaversion | 118 | 8.693 | 1.614 | 3.75 | 11 |

**Figure 4.2. Degree of Debt Aversion: Distribution of the Dataset**



### 4.3. Correlations: Determining the Dependent Variable

Table 4.3. below shows the pairwise correlation coefficients, obtained through Pearson correlation, between the variable for the degree of debt aversion and several variables that each represent borrowing behaviour of students in higher education in the Netherlands in a different manner. To clarify, the first variable, *amountborrowing*, represents the overall monthly amount in euros that students borrow for both educational and non-educational purposes. The second variable, *currentamount,* is more specific as it denotes the current monthly amount of student loans in euros, whereas the third variable, *formeramount,* represents the monthly amount of student loans in euros before the outbreak of COVID-19. Each of these variables is included in the matrix because of their continuous nature, which allows a concept such as borrowing behaviour to be accurately measured, justifying the choice of Pearson correlation. In addition, the reason for selecting the continuous variables is that variables of this nature "are very desirable in inferential statistics", making it possible to draw conclusions that apply to target population as a whole (McCue, 2007, p. 70).

The pairwise coefficient for each of the variables representing borrowing behaviour, whether it be *amountborrowing*, *currentamount* or *formeramount,* takes on a negative value in relation to the independent variable *debtaversion*. The correlations between the independent variable and the different dependent variables are in accordance with the theoretical framework. This is particularly true for the inference that as a person's degree of debt aversion increases, the individual is less likely to borrow money and will therefore borrow less. A closer look at these coefficients reveals that there is a weak negative correlation between *debtaversion* and *amountborrowing*, as shown by the Pearson coefficient (*r*) of -0.1894. This correlation is not statistically significant as the p-value is higher than 0.05. In contrast, Table 4.3.1. shows that there is a moderate negative correlation between the degree of debt aversion and the current monthly amount of student loans, as indicated by the Pearson coefficient (*r*)=-0.3026, which is statistically significant at $p < 0.05$.

To determine why the first correlation is significant and the second correlation not, the observations for the borrowing behaviour variables must be examined. As can be seen in Table 4.3.2., the summary statistics indicate that there is anomaly in the observed sample for *amountborrowing*. Correspondingly, Table B12 in Appendix B shows that there are two outliers, namely the monthly amounts of €2500 and €7000. To conclude that the presence of outliers is the reason for the statistical insignificance of the correlation coefficient between *debtaversion* and *amountborrowing*, the outliers must be addressed directly. When the outliers are removed from the correlation (*amountborrowing* <= 2499), it becomes clear that

it is these two outliers that cause the correlation between *debtaversion* and *amountborrowing* to not be statistically significant. As shown in Table B13 in Appendix B, the correlation between *debtaversion* and *amountborrowing* becomes statistically significant at $p < 0.05$ after having removed the outliers. The presence of outliers is the reason why in the empirical analysis student borrowing behaviour will not be represented and measured by *amountborrowing*. Moreover, *formeramount* is not selected because, as the name suggests, it solely measures the borrowing behaviour of students before the pandemic.

Henceforth, the variable *currentamount* is used to represent and measure the dependent variable, student borrowing behaviour. The reason for this is that this variable best captures the borrowing behaviour of students in higher education in view of the pandemic, given its effect on the educational sphere and the financial well-being of students, as well as the accessibility of the social loan system and student loans being a common borrowing tool. Moreover, there appear to be no outliers and, most notably, the moderate negative correlation between *debtaversion and currentamount*, as found in the correlation matrix, is most consistent with the expectations formulated in the theoretical framework. The determination of this variable is necessary to perform linear regressions in light of each of the hypotheses, and thus to provisionally accept or reject them, which will be done in the following section.

**Table 4.3.1. Pairwise Correlation Matrix: Debt Aversion and Borrowing Behaviour**

| | Debtaversion | Amountborrowing | Currentamount | Formeramount |
|---|---|---|---|---|
| **Debtaversion**[20] | 1.0000 | | | |
| **Amountborrowing**[21] | -0.1894 | 1.0000 | | |
| **Currentamount**[22] | -0.3026* | 0.1734 | 1.0000 | |
| **Formeramount**[23] | -0.0647 | 0.1348 | 0.6703** | 1.0000 |

*Note: *p<0.05; **p<0.01*

**Table 4.3.2. Summary Statistics for Variables 'currentamount and 'amountborrowing'**

| Variable | Obs. | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| Amountborrowing | 57 | 880.211 | 903.474 | 20 | 7000 |
| Currentamount | 56 | 781.018 | 264.741 | 200 | 1130 |

[20] Variable *debtaversion* signifies the degree of debt aversion (continuous)
[21] Variable *amountborrowing* signifies the monthly amount in Euros (€) that the respondent/student borrows in general (for both educational and non-educational purposes) (continuous).
[22] Variable *currentamount* signifies the current monthly amount of student loan in Euros (€) (continuous).
[23] Variable *formeramount* signifies the former monthly amount of student loan in Euros (€) (continuous).

### 4.4. Regression

To answer the main research question by means of the three hypotheses formulated, multiple linear regression analyses are carried out. However, before delving into the actual regression models, it is important to elaborate on one of incorporated demographic control variables. As shown in Table B3 in Appendix B, the respondents who make up observed sample are enrolled in various study programs, including a pre-master. This is a bridging program for students who, due to their academic background in another discipline or their enrolment in an HBO Bachelor's program, do not immediately meet the admission requirements for a certain university master's program (Stichting Studiekeuze123, n.d.-b). Accordingly, in the interest of preserving the raw data obtained through the survey, all study programs are brought under a newly generated categorical variable named "*levelofeducation*". As the name suggests, this variable is determined by the level of higher education, namely HBO Bachelor, HBO Master, WO Bachelor or WO Master. A pre-master's program can be considered an exception to the prescribed categorization. Therefore, together with the fact that such a program is offered by academic educational institutions, a pre-master's program is classified as 'WO Bachelor'.

#### 4.4.1. Models 1 and 2

In view of hypothesis 1, two linear regressions are conducted, the first of which comprises the dependent – *currentamount* – and independent variable – *debtaversion* – as well as demographic control variables *gender*, *age* and *levelofeducation*. The second model includes not only the abovementioned variables, but also the control variables that, in accordance with the theoretical framework, may influence financial decisions and overall financial behaviour, namely the receipt of parental support, students' current living situation and their current employment status. Both models are presented in Table 4.4.1. below.

The first model shows the effect of the degree of debt aversion on the borrowing behaviour of students in higher education, with the latter being measured by *currentamount.* As shown in Table 4.4.1., given that the demographic characteristics are controlled for or held constant, the regression coefficient of -59.412 shows a negative correlation between debt aversion and student borrowing behaviour. This means that as the degree of debt aversion increases with a score of 1, the current monthly amount of student loans decreases by €59,41. This effect is statistically significant at $p < 0.05$. Additionally, the intercept also known as the constant, has a value of 1395.986, statistically significant at $p < 0.001$. This means that when all variables are held constant, including *debtaversion*, meaning that a student is not debt-averse, the predicted amount of student loans will be approximately €1396. Moreover, the R-

squared value is 0.148, which signifies that a mere 14.8% of the variance in student borrowing behaviour can be explained by debt aversion and the 'independent' demographic variables. Based on model 1 alone, one would assume it possible to reject the first null hypothesis and say that the coefficient is significantly different from 0. However, this model does not account for the variables that may influence a person's financial decision-making.

The second model is an extension of the first model as it incorporates the financial control variables. Table 4.4.1. shows that, after controlling for these additional variables as well, the coefficient of debt aversion remains negative at -53.392, showing a similar effect to model 1. As the degree of debt aversion increases with a score of 1, the monthly amount of student loans reduces by roughly €53,40. This effect is statistically significant at $p < 0.05$. Moreover, the constant has a value of 1300.85, statistically significant at $p < 0.01$. This implies that when debt aversion equals 0, like all other variables, the expected amount of monthly student loans will be €1300,85. Furthermore, the R-squared value is 0.201, denoting that 20.1% of the variation in borrowing behaviour can be explained by the second model.

The inclusion of the financial control variables indicates that, in accordance with the theoretical framework, receiving parental financial support can be considered a mechanism to minimize debt. This is suggested by the regression coefficient of -42.821, which shows that the receipt of parental support is negatively correlated with the monthly amount of student loans. However, since the correlation is not statistically significant, this cannot be concluded. This also holds for the correlation between current employment status and *currentamount.* As shown in Table 4.4.1., the coefficient of -98.898 indicates that having a job is correlated with a decrease in the monthly student loans. This effect is not statistically significant. Moreover, there is a positive correlation between not living with parental figures and student borrowing behaviour, as shown by the coefficient of 116.958 in Table 4.4.1. This effect is in conformity with the academic literature, but not statistically significant. Lastly, it is notable that, after controlling for financial characteristics, the sign of coefficient *male* becomes positive implying that, contrary to model 1, male students borrow more than their female counterparts when the degree of debt aversion is 0. However, this effect is not statistically significant.

In short, both models show that, after controlling for both demographic characteristics and variables that may be of influence on financial decision-making, there is a negative effect of the degree of debt aversion on the borrowing behaviour of students in higher education. This effect is statistically significant at $p < 0.05$ in both models. Hence, with regard to the hypotheses, it can be concluded that the first null hypothesis can be rejected.

## Table 4.4.1. OLS-regression Results of Models 1 and 2

| **Variable** | **(1)**<br>**Currentamount** | **(2)**<br>**Currentamount** |
|---|---|---|
| **Debtaversion** | -59.412* | -53.392* |
| | (23.653) | (25.407) |
| **Gender** | | |
| Male | -13.293 | 6.387 |
| | (77.043) | (80.089) |
| Female[24] | 0 (base) | 0 (base) |
| Prefer not to say | -247.527 | -271.007 |
| | (288.882) | (291.770) |
| **Age** | | |
| 18-21 | 0 (base) | 0 (base) |
| 22-25 | -75.905 | -76.253 |
| | (170.610) | (174.206) |
| 26-29 | 137.702 | 190.613 |
| | (212.523) | (218.773) |
| **Level of Education[25]** | | |
| HBO Bachelor | 0 (base) | 0 (base) |
| WO Bachelor | -59.359 | -9.179 |
| | (172.909) | (181.012) |
| WO Master | -49.760 | -27.506 |
| | (160.896) | (166.660) |
| **Parental Support** | | |
| No | | 0 (base) |
| Yes | | -42.821 |
| | | (75.252) |
| **Current Living Situation** | | |
| Living with parent(s)/legal guardian(s) | | 0 (base) |
| Not living with parent(s)/legal guardian(s) | | 116.958 |
| | | (94.320) |
| **Current Employment Status** | | |
| Unemployed | | 0 (base) |
| Employed | | -98.898 |
| | | (84.448) |

[24] 'Female' is selected as the base/reference group for the factor variable, as the majority of the sample consists of female respondents/students.
[25] 'HBO Master' is not included in the regression as there are no students currently enrolled in an HBO Master's program who currently have a student loan. Therefore, there are no observations for variable 'currentamount' (see Table B14 in Appendix B).

| | | |
|---|---|---|
| **Intercept** | 1395.986***<br>(365.597) | 1300.85**<br>(376.854) |
| **N: Observations** | 56 | 56 |
| **$R^2$: R-squared** | 0.148 | 0.201 |

*Notes: standard errors in parentheses*

**p<0.05; **p<0.01; ***p<0.001*

### 4.4.2. Models 3 and 4

For the second hypothesis, two multiple linear regression models with an interaction effect are conducted. Models 3 and 4 both include the effects of *debtaversion and studydelay* on student borrowing behaviour, as well as the continuous by categorical interaction term between *debtaversion* and *studydelay*. Moreover, both models control for demographic characteristics. Additionally, the fourth model includes the financial control variables.

As shown in Table 4.4.2., the third model shows that the intercept, presenting the predicted current monthly amount in student loans when the degree of debt aversion equals 0, has a value of 1470.521 which was found to be statistically significant at $p < 0.001$. However, because the model includes *study delay* as a moderating variable with students who have not experienced a study delay as the reference group, the predicted amount of approximately €1470,52 only applies to the reference group at hand. Moreover, the simple effect or, because it is a continuous variable, the simple slope of the degree of debt aversion on borrowing behaviour is negative, as indicated by the regression coefficient of -74.681. This means that as the degree of debt aversion increases with a score of 1, the monthly amount of student loans reduces by about €74,68. Due to the inclusion of the moderating variable *study delay* and the corresponding reference group, this is the predicted change in the amount of student loans for students who have not experienced a study delay. This effect is statistically significant at $p < 0.05$. Furthermore, in regard to the simple effect of *study delay*, it appears that having suffered from a study delay has a negative effect on borrowing behaviour. As shown in Table 4.4.2., the coefficient has a value of -231.617, which denotes that a student who suffered a study delay borrows approximately €231,62 less than a student who has not when the degree of debt aversion is equal to 0. This effect is not statistically significant.

With regard to the interaction, the question is whether students who have suffered a study delay and students who have not suffered such a delay show differences in the relationship between *debtaversion* and *currentamount.* Accordingly, the interaction term *Debtaversion x Study Delay* shows “the difference in the simple slopes” of the degree of debt

aversion for students who have versus who have not experienced a study delay (UCLA, n.d.-b). Hence, it measures the change in the debt aversion coefficient for students who have experienced a study delay relative to the reference group. As can be seen in Table 4.4.2., the interaction coefficient has a value of 33.960, which, given the simple slope of debt aversion for the reference group, is the additional slope for students who have incurred a study delay. This means that the simple slope for a student who has experienced a study delay is (-74.681 + 33.960 =) -40.721. Thus, for students who have incurred a study delay, this means that as the degree of debt aversion increases with a score of 1, the current monthly amount of student loans decreases by approximately €40,72. This effect indicates that experiencing a study delay moderates the relationship between the degree of debt aversion and student borrowing behaviour, which is in line with the second hypothesis. However, the interaction *Debtaversion x Study Delay* is not significant, which suggests that the relationship of debt aversion on borrowing behaviour does not vary by having experienced a study delay.

Nevertheless, the interaction effect cannot be interpretated solely on the basis of its coefficient. Therefore, Figure 4.4.2.1. below presents a visual representation in the form of a so-called margins plot. Firstly, note that for students who have not incurred a study delay, the current monthly student loan amount seems to decrease steadily as the degree of debt aversion increases, while the amount seems to decrease less for students who have incurred a study delay. As with the interaction coefficient, this is in line with the second hypothesis. Secondly, there seems to be an interaction effect at the point of intersection i.e., when the degree of debt aversion equals a score of 7. However, for each degree of debt aversion, there are large overlaps in the confidence intervals, indicating that the slope of *debtaversion* does not differ between having and not having had a study delay, even though it appears to do so. Hence, holding the demographic characteristics constant, the interaction term was found not statistically significant. This is a first indication that the second null hypothesis cannot be rejected and that there does not seem to be any moderation by the experience of a study delays. The R-squared of 0.170 indicates that 17% of the variance in *currentamount* can be explained by the independent variables, including the demographic control characteristics and the interaction effect. Nevertheless, before definitively rejecting the second null hypothesis, it is important to control for the variables that may influence financial decision-making.

The fourth model shows that, holding both the demographic characteristics and the financial control variables constant, the simple slope or 'effect' of *debtaversion* on the borrowing behaviour of students who have not experienced a study delay remains negative, as indicated by the coefficient of -67.040 in Table 4.4.2. This effect is statistically significant

at $p < 0.05$. Furthermore, the simple effect of (having a) *study delay* on the monthly amount of student loans is negative and not statistically significant, which is also similar to the third model. However, the coefficient of -169.179 shows that the effect has become significantly smaller compared to model 3. Thus, when the degree of debt aversion equals 0, a student who has suffered a study delay borrows approximately €169,18 less than a student who has not. Moreover, when *debtaversion* equals 0, the predicted monthly amount of student loans for the reference group – the constant – has a value of 1348.027 or approximately €1348,03. The constant was found to be significant a $p < 0.01$.

As far as the interaction effect is concerned, *Debtaversion x Study Delay* takes on a value of 27.579, which, given the simple slope of debt aversion for the reference group, indicates that there is a difference between students who have and who have not experienced a study delay. Consequently, the simple slope for a student who has incurred a study delay is (-67.040 + 27.579 =) – 39.461, which is very similar to the result in the third model and thus consistent with the second hypothesis. However, like the result in model 3, the interaction coefficient is not statistically significant, indicating that the relationship of debt aversion on borrowing behaviour is not moderated by the experience of a study delay. Lastly, the R-squared of 0.225 indicates that a mere 22.5% of the variance in current monthly student loans can be explained by the 'independent' variables and the interaction effect in the fourth model.

As can be seen in Figure 4.4.2.2. below, the margins plot is very similar to the predictive or adjusted margins of the third model. The line showing the negative relationship between the current monthly student loan and the degree of debt aversion for the 'No'-group – students who have not experienced a study delay – is much steeper than the line showing the development of borrowing behaviour for the 'Yes'-group. Furthermore, there also seems to be an interaction between having a study delay and the degree of debt aversion when debt aversion equals a score of 6. However, as with the third model, there are large overlapping confidence intervals which explain the statistical insignificance of the interaction effect. Hence, as the interaction effects in both models 3 and 4 are not statistically significant, the second null hypothesis can be rejected. Consequently, it can be concluded that the experience of a study delay does not moderate the effect of the degree of debt aversion on current monthly student loans i.e., student borrowing behaviour.

## Table 4.4.2. OLS-regression Results of Models 3 and 4

| **Variable** | **(3)**<br>**Currentamount** | **(4)**<br>**Currentamount** |
|---|---|---|
| **Debtaversion** | -74.681*<br>(30.860) | -67.040*<br>(32.054) |
| **Study Delay** | | |
| No | 0 (base) | 0 (base) |
| Yes | -231.617<br>(398.378) | -163.179<br>(403.138) |
| **Debtaversion x Study Delay** | | |
| No | 0 (base) | 0 (base) |
| Yes | 33.960<br>(45.961) | 27.579<br>(46.268) |
| **Gender** | | |
| Male | -2.041<br>(80.138) | 12.422<br>(83.424) |
| Female | 0 (base) | 0 (base) |
| Prefer not to say | -183.626<br>(324.173) | -239.603<br>(330.111) |
| **Age** | | |
| 18-21 | 0 (base) | 0 (base) |
| 22-25 | -55.935<br>(173.260) | -60.791<br>(176.823) |
| 26-29 | 146.555<br>(214.486) | 196.220<br>(220.509) |
| **Level of Education** | | |
| HBO Bachelor | 0 (base) | 0 (base) |
| WO Bachelor | -59.002<br>(174.583) | -11.495<br>(182.406) |
| WO Master | -46.636<br>(163.127) | -25.685<br>(168.198) |
| **Parental Support** | | |
| No | | 0 (base) |
| Yes | | -39.928<br>(75.867) |
| **Current Living Situation** | | |
| Living with parent(s)/legal guardian(s) | | 0 (base) |
| Not living with parent(s)/legal guardian(s) | | 129.137<br>(97.526) |

| | | |
|---|---|---|
| **Current Employment Status** | | |
| Unemployed | | 0 (base) |
| Employed | | -94.389<br>(85.236) |
| **Intercept** | 1470.521***<br>(400.138) | 1348.027**<br>(411.041) |
| **N: Observations** | 56 | 56 |
| **$R^2$: R-squared** | 0.170 | 0.225 |

*Notes: standard errors in parentheses*

**p<0.05; **p<0.01; ***p<0.001*

**Figure 4.4.2.1. The Expected Current Monthly Amount of Student Loans in Model 3**

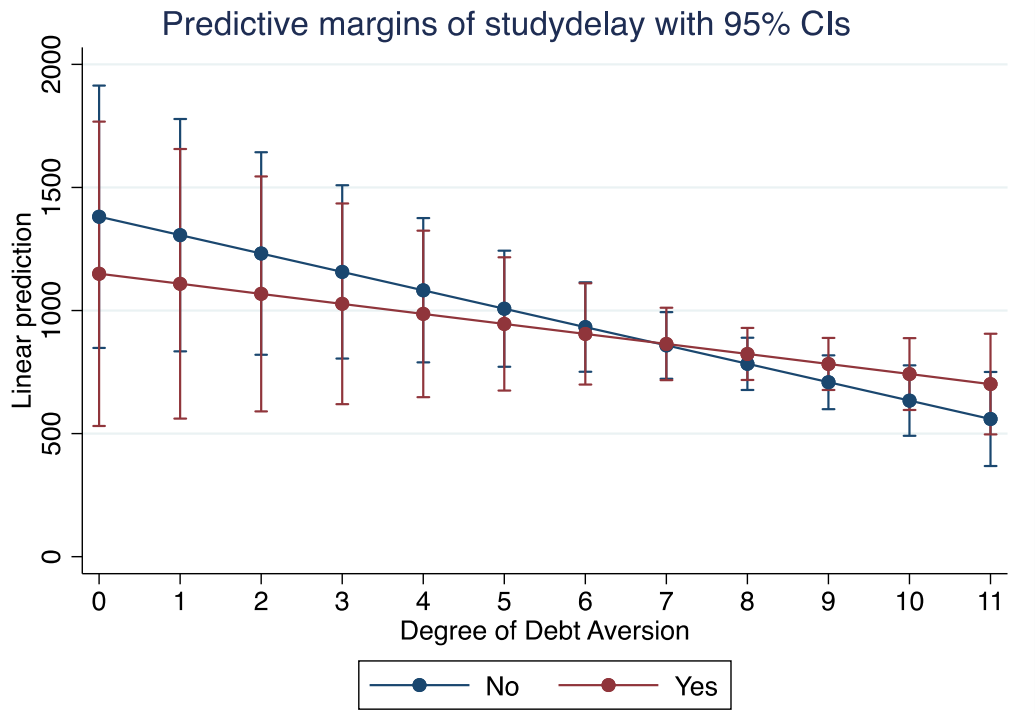
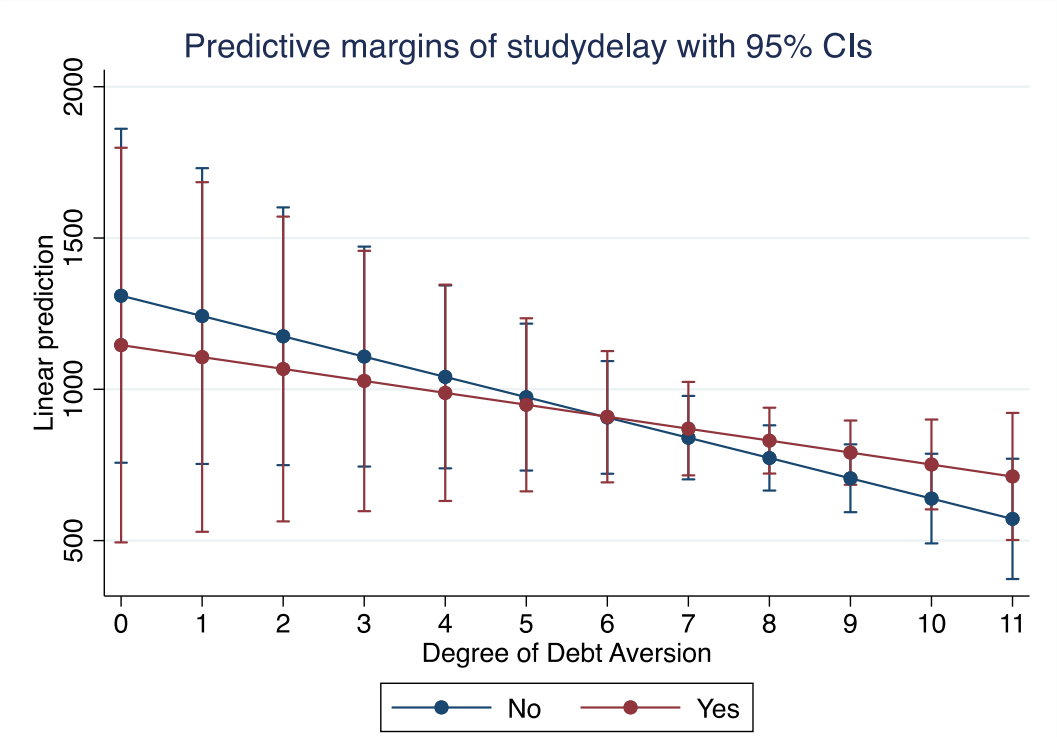


**Figure 4.4.2.2. The Expected Current Monthly Amount of Student Loans in Model 4**




### 4.4.3. Models 5, 6 and 7

A similar approach is taken with respect to the third hypothesis, as it features the experience of being laid off instead of having a study delay. Accordingly, models 5 and 6 both include the effects of *debtaversion* and *layoff*, the interaction term of *debtaversion* by *layoff* and the demographic control variables. Moreover, the sixth model complements the fifth by adding the control variables that may influence one's financial decisions. Finally, model 7 performs a multiple linear regression between the dependent variable and the main independent variable, incorporating both the experience with a study delay and with a layoff. Model 5 suggests that after controlling for gender, age and level of education, the effect of *debtaversion* on *currentamount* is negative, as indicated by the coefficient of -56.089 in Table 4.4.3. below. Due to the inclusion of *layoff* as the moderating variable with students who have not been laid off as the reference group, this is only the case for the reference group in question. This effect or simple slope is not statistically significant. Moreover, regarding the simple effect of *layoff*, it appears that having been laid off has a positive effect on student borrowing behaviour. As shown in Table 4.4.3., the coefficient has a value of 482.834 which denotes that, when the degree of debt aversion equals a score of 0, a laid off student borrows approximately €482,83 more than a student who was not fired. This effect is not statistically

significant. Additionally, the constant of 1395.544 was found to be statistically significant at $p < 0.05$ and a mere 25.9% of the variation in the dependent variable can be explained by the fifth model, as indicated by the R-squared of 0.259.

With regard to the interaction effect, the question is whether students who have been laid off and those who have not show differences in the relationship between the degree of debt aversion and borrowing behaviour in the form of monthly student loans. The interaction term *Debtaversion x Layoff* has a value of -77.898, which, knowing the slope of debt aversion for the reference group, indicates a difference between the slopes of students who were and were not fired. The simple slope for a student who has experienced a layoff is (-56.089 – 77.898 =) -133.987, which shows that for this group, the *currentamount* decreases by approximately 134 euros as the degree of debt aversion increases a with a score of 1. As shown in Table B15 in Appendix B, this 'effect' is statistically significant at $p < 0.05$. However, the interaction effect is not statistically significant, suggesting that the relationship of debt aversion on student borrowing behaviour is not moderated by having been laid off.

As can be seen in Figure 4.4.3.1. below, the margins plot shows that there is a negative effect of debt aversion on borrowing behaviour, but contrary to the expectations formulated in the third hypothesis, the experience of a layoff seems to reinforce rather than mitigate this effect. The line of the 'Yes'-group, representing students who have been laid off, is steeper than that of the 'No'-group. Furthermore, there seems to be an interaction effect when the degree of debt aversion equals a score of 6. However, due to great overlaps in the confidence intervals, especially at the point of intersection, it can be concluded that the interaction effect is not statistically significant. Thus, holding the demographic characteristics constant, this denotes that the being laid off does not moderate the effect of debt aversion on the borrowing behaviour of students in higher education. Nevertheless, to definitively reject the third null hypothesis, the financial characteristics must be controlled for.

The sixth model shows that, controlling for the demographic and financial control variables, the simple slope of the degree of debt aversion on borrowing behaviour for students who have not been laid off remains negative at -26.185. This effect is not statistically significant. Moreover, as with the fifth the model, the simple effect of having experienced a *layoff* is positive, as shown by a much larger coefficient of 646.738. This effect also turned out not to be statistically significant. Furthermore, the constant of 1091.096 is much lower and no longer significant. The R-squared of 0.359 shows that 35.9% of the variance in borrowing behaviour, *currentamount,* can be explained by the model in question.

As for the interaction, *Debtaversion x Layoff* has a value of -93.849, which, given the

effect of debt aversion for the reference group, indicates that there is a large difference between students who have and who have not been laid off. The interaction term provides the additional slope for students who experienced a *layoff*, making the simple slope of *debtaversion* for this group of students more negative than the slope of their counterparts who have not been laid off, namely (-26.185 – 93.849 =) -120.034. This effect was found to be statistically significant at $p < 0.05$, as shown in Table B16 in Appendix B. However, as with the fifth model, the interaction coefficient is not statistically significant, suggesting that there is no moderation by the experience of a layoff. When checking the regression assumptions, the statistical non-significance could be due to the fact that there are small, but statistically significant, correlations between *studydelay*, *layoff* and other independent variables, as shown in Table B17 in Appendix B. The same goes for the other interaction effects in models 3 to 5. Figure 4.4.3.2. below shows for both groups a similar effect of debt aversion on the amount of student loans. There also seems to be visual interaction effect when the degree of debt aversion equals 7. However, the large overlap of the confidence intervals, especially at the seemingly cross-over interaction, showcase that the difference between the two slopes of the two groups is not statistically significant. Thus, after holding all control variables constant, it can be concluded that there is no moderation by the experience of a layoff and that the third null hypothesis can therefore be rejected. It is striking that, due to the inclusion of *layoff* and the corresponding interaction term, the coefficients for *levelofeducation* change direction compared to the models related to hypotheses 1 and 2.

The seventh model runs a multiple linear regression solely showing the main effects of *debtaversion*, *studydelay* and *layoff* on the borrowing behaviour of students in higher education. Firstly, the *debtaversion* coefficient of -56.967 shows that the amount of current monthly student loans is expected to decrease by approximately €56,97 as the degree of debt aversion increases, given that all other variables in the model are held constant. This effect is statistically significant at $p < 0.05$ and thus supports the first hypothesis established in the theoretical framework. Secondly, the *studydelay* coefficient of 62.975 suggests that there is a positive correlation between having a study delay and student borrowing behaviour, provided that the other independent variables are controlled for. In other words, the amount of student loans is expected to be approximately €62,96 higher for students who have experienced a study delay than the predicted amount of those who have not. However, this effect is not statistically significant. Thirdly, the effect of having experienced a *layoff* is negative but not statistically significant, as shown by the coefficient of -181.369, which is striking as it works in the opposite direction of *studydelay.* Finally, the constant or the predicted amount of

student loans, when all other variables are held constant, has a value of 1302.095 and is statistically significant at $p < 0.001$. The R-squared of 0.172 signifies that 17.2% of the variance in student borrowing behaviour can be explained by the degree of debt aversion, the experience of a study delay and of a layoff.

**Table 4.4.3. OLS-regression Results of Models 5, 6 and 7**

| **Variable** | **(5) Currentamount** | **(6) Currentamount** | **(7) Currentamount** |
|---|---|---|---|
| **Debtaversion** | -56.089 | -26.185 | -56.967* |
| | (38.248) | (42.012) | (24.577) |
| **Study delay** | | | |
| No | | | 0 (base) |
| Yes | | | 62.975 |
| | | | (81.236) |
| **Layoff** | | | |
| No | 0 (base) | 0 (base) | 0 (base) |
| Yes | 482.834 | 646.738 | -181.369 |
| | (552.983) | (559.087) | (91.496) |
| **Debtaversion x Layoff** | | | |
| No | 0 (base) | 0 (base) | |
| Yes | -77.898 | -93.849 | |
| | (66.498) | (68.114) | |
| **Gender** | | | |
| Male | 15.815 | 88.078 | |
| | (93.065) | (98.235) | |
| Female | 0 (base) | 0 (base) | |
| Prefer not to say | -466.501 | -512.574 | |
| | (362.272) | (356.283) | |
| **Age** | | | |
| 18-21 | 0 (base) | 0 (base) | |
| 22-25 | -133.436 | -53.732 | |
| | (183.831) | (189.269) | |
| 26-29 | 64.725 | 197.646 | |
| | (230.887) | (236.850) | |
| **Level of Education** | | | |
| HBO Bachelor | 0 (base) | 0 (base) | |
| WO Bachelor | 23.720 | 201.786 | |
| | (216.902) | (232.860) | |

| | | | |
|---|---|---|---|
| WO Master | 24.011<br>(207.044) | 143.167<br>(214.714) | |
| **Parental Support** | | | |
| No | | 0 (base) | |
| Yes | | -48.589<br>(94.198) | |
| **Current Living Situation** | | | |
| Living with parent(s)/legal guardian(s) | | 0 (base) | |
| Not living with parent(s)/legal guardian(s) | | -15.977<br>(125.271) | |
| **Current Employment Status** | | | |
| Unemployed | | 0 (base) | |
| Employed | | -225.222<br>(109.937) | |
| **Intercept** | 1395.544*<br>(524.338) | 1091.096<br>(543.873) | 1302.095***<br>(226.047) |
| **N: Observations** | 40 | 40 | 40 |
| **$R^2$: R-squared** | 0.259 | 0.359 | 0.172 |

*Notes: standard errors in parentheses*

**p<0.05; **p<0.01; ***p<0.001*

**Figure 4.4.3.1. The Expected Current Monthly Amount of Student Loans in Model 5**

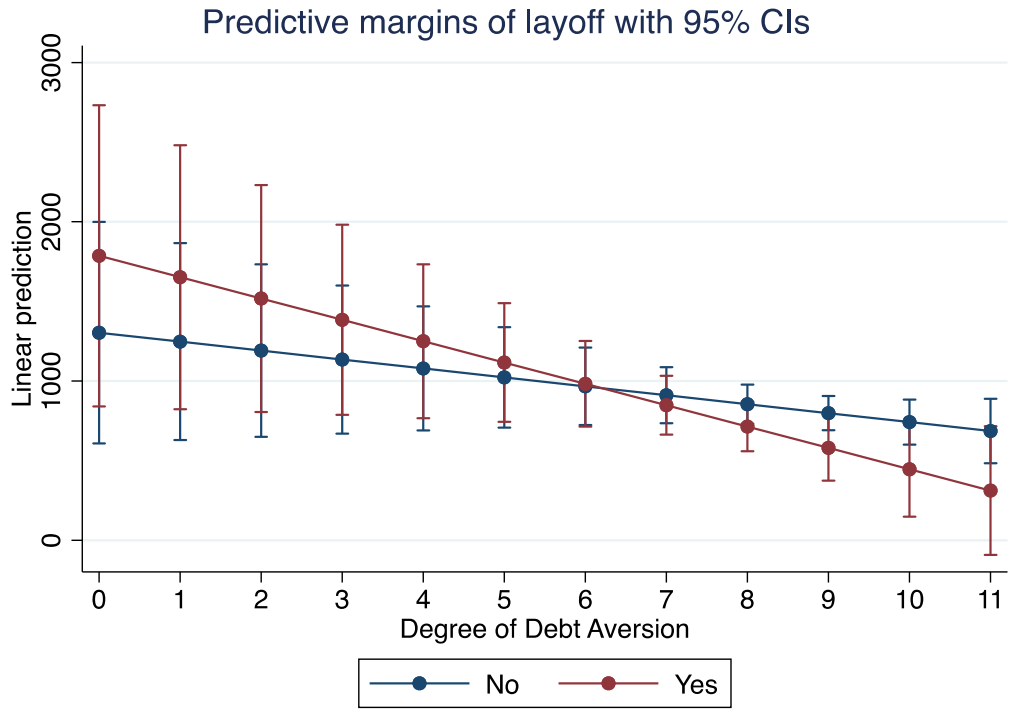
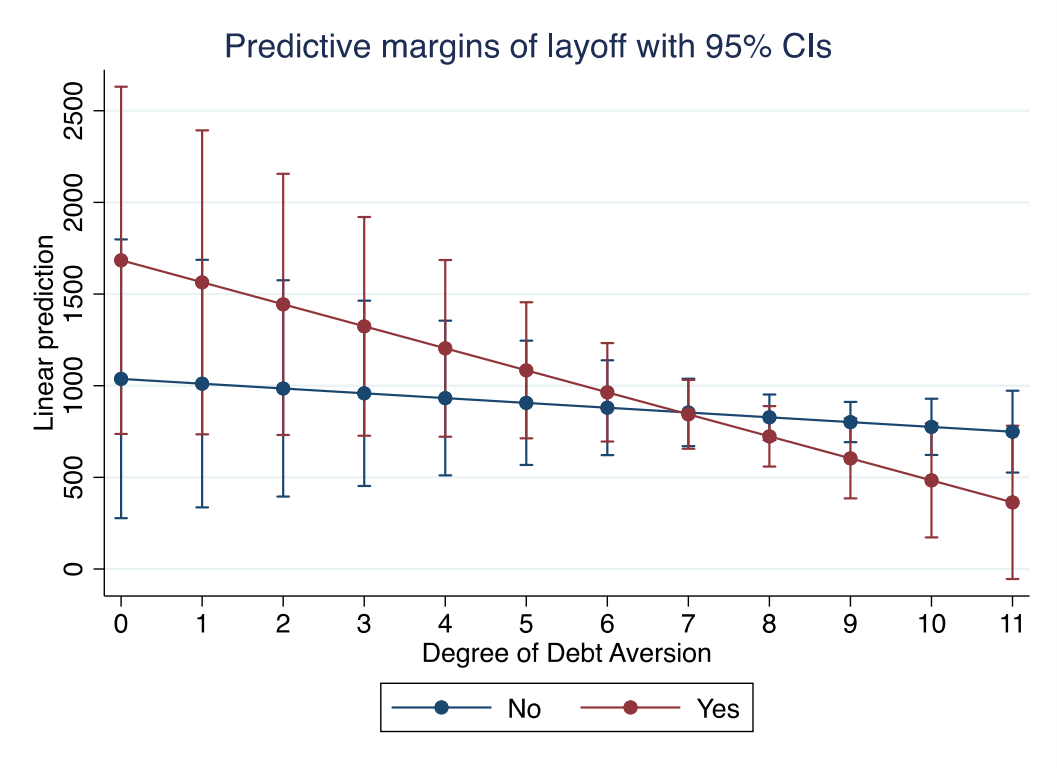


**Figure 4.4.3.1. The Expected Current Monthly Amount of Student Loans in Model 5**



## 5. Conclusion and Discussion

This thesis has sought to fill the existing gap in the academic literature regarding the effect of financial preferences on financial behaviour, specifically the relationship between debt aversion and student borrowing behaviour. For this purpose, the influence of such debt preferences on the borrowing behaviour of students enrolled at institutions of higher education in the Netherlands, during the COVID-19 pandemic, was examined. Accordingly, the research question 'How does the degree of debt aversion impact borrowing behaviour of students enrolled in Dutch higher education in times of the COVID-19 crisis?' was central to this study. To answer this question, three hypotheses were formulated, setting out the predictions for the relationship in question, based on the existing literature and theory. The first null and alternative hypothesis are the following:

> *$H_0$: The level of debt aversion among students in higher education has no impact on their borrowing behaviour in times of the pandemic.*
>
> *$H_1$: The level of debt aversion among students in higher education has a negative impact on their borrowing behaviour in times of the pandemic.*

Scholars argue that aversion to debt, together with the unwillingness to invest in something without immediate benefits or future guarantees such as studying, is one of the key determinants of whether or not to borrow. Accordingly, the hypothesis expects a negative correlation between the independent variable, measured by the developed debt aversion index, and the dependent variable, measured by the current monthly amount of student loans in euros. Furthermore, they argue that debt avoiding acts, such as receiving parental financial support, living at home and having a full-time or part-time job during the study period, allow students to partially or completely escape the burden of having to take out a student loan and accumulate debt over time i.e., they are expected to borrow less.

After conducting two multiple linear regressions, controlling for demographic and financial control variables, it can be concluded that the H0 can be rejected. Additionally, even though the correlations between the financial control variables, representing the use of debt avoiding mechanisms, and student borrowing behaviour were found to be statistically insignificant, the indicated effect by the regression coefficients is in conformity with existing literature. Hence, the fact that $H_0$ can be rejected signifies that it can be assumed that the level

of debt aversion among students in higher education has a negative impact on their borrowing behaviour during the pandemic. Nevertheless, the pandemic is has had certain 'effects' or consequences on both the academic career and financial situation of this group of students. The second null and alternative hypothesis address the experience of a study delay:

> *$H_0$: Having suffered a study delay as a result of the COVID-19 pandemic has no impact on the effect of the degree of debt aversion on student borrowing behaviour.*
>
> *$H_1$: Having suffered a study delay as a result of the COVID-19 pandemic moderates the effect of the degree of debt aversion on student borrowing behaviour.*

As highlighted in the theoretical framework, times of crisis bring about financial stressors to which each individual responds differently. This depends on their financial preferences and the severity of the financial hardship. As students themselves usually do not have a significantly high income, regardless of whether they receive financial aid, experiencing study delays can be considered a significant threat to their financial position. This is because it leads to additional study costs such as paying tuition fees for a longer period than anticipated. The descriptive statistics show that the average monthly amount of student loans of students in higher education has increased by approximately €100 since the outbreak of COVID-19 in the Netherlands. This suggests that the pandemic, the associated measures and their consequences may have had a negative effect on the borrowing behaviour of students. Therefore, having experienced a study delay is expected to moderate, in this case mitigate, the effect of debt aversion on borrowing behaviour.

After conducting two multiple linear regression models with an interaction effect between debt aversion and the experience of study delay, with all other variables assumed constant, the correlation between the degree of debt aversion and student borrowing behaviour remains negative and statistically significant. This outcome supports that the first null hypothesis can be rejected. Moreover, although not statistically significant, the results indicate a negative correlation between the financial control variables and borrowing behaviour, which is in line with the existing theory. Furthermore, the interaction effect was found not to be statistically significant, meaning that the experience of a study delay does not moderate the effect of the degree of debt aversion on the borrowing behaviour of students in higher education. A similar approach was applied to the experience of a layoff, i.e., being fired, as a result of the pandemic. The third null and alternative hypotheses are as follows:

*$H_0$: Having been laid off as a result of the COVID-19 pandemic has no impact on the effect of the degree of debt aversion on student borrowing behaviour.*

*$H_1$: Having been laid off as a result of the COVID-19 pandemic moderates the effect of the degree of debt aversion on student borrowing behaviour.*

The reason for incorporating *layoff* as the moderating variable is the same as for *studydelay*, based on the existing literature. Both experiences represent effects of the pandemic that could have or actually did cause significant financial pressure for students in higher education, forcing them to adjust their financial behaviour. In this context, a layoff involves the loss of a source of income, if not their largest source of income. Accordingly, it is hypothesized that being laid off prompt debt-averse students to resort to 'negative' financial behaviour i.e., borrow more relative to not having been fired. Strikingly, the results indicate the opposite and suggest that layoffs as a result of the pandemic do not offset but rather seem to reinforce debt preferences. However, as the interaction effect is not statistically significant, the third null hypothesis cannot be rejected and this newfound moderating effect cannot be concluded.

The last regression model shows that there is statistically significant negative correlation between the degree of debt aversion and student borrowing behaviour, which is consistent with the existing literature and in support of the first null hypothesis being rejected. Moreover, although not statistically significant, there is a positive effect of having experienced a study delay and a negative effect of being fired on the borrowing behaviour of students in higher education. While the former effect is consistent with the academic literature, the latter is not. As a matter of fact, scholars argue that during a crisis, people tend to focus on the immediate benefits, which may be less advantageous in the long run. Thus, students are expected to borrow more to subsist financially. Hence, in an attempt to answer the research question, it can be concluded that the financial preference of debt aversion 'negatively' impacts the borrowing behaviour of students enrolled in Dutch higher education. The higher the degree of a debt aversion of a student, the lower their monthly amount of student loans in times of the ongoing COVID-19 pandemic. However, it cannot be concluded that this relationship varies by whether or not a student has directly experienced a consequence of the pandemic, namely a study delay or layoff.

In terms of limitations, some of the above statistically non-significant results show certain trends or suggest certain relationships between variables. However, because they are not statistically significant, they cannot be assumed to be true. Although the total sample size

seems adequate, the statistical non-significance could be attributable to the fact that the number of observations for each of the regression models is rather low. Depending on the variables incorporated, the regression models included 40 or 56 observations. Moreover, the sample in question is not evenly distributed in terms of gender, age and level of education, which may affect the statistical significance of the correlations and of the regression models as a whole. The size and distribution of the sample also affect the ability of this study to truly generalize its findings across the target population.

Furthermore, with regard to the methodology, the necessary data was obtained by using a web-based survey. The initial plan was to conduct the survey online, on the campuses of various Dutch 'hogescholen' and universities and in public libraries, to maximize the number of respondents. However, conducting the survey offline was not possible due to a significant increase in the number of COVID-19 infections, which prolonged the lockdown for educational institutions. Therefore, in the absence of pandemic-related measures, it is recommended to drastically increase the number of respondents, thereby increasing the sample and the number of observations to be used in the regression models. This might allow the non-significant effects to be found statistically significant after all. As for the survey itself, neutral answer options, such as "neither agree nor disagree" or "not applicable", should be limited as it is important that respondents read each question thoroughly, think about it and answer accordingly. However, such options make it easier for respondents to be passive. Additionally, the variable *age* should be included as a continuous rather than categorical variable as this would allow the main effect of age to be determined more accurately.

Finally, recommendations can be made regarding government policy and further research. This study contributes to previous studies by examining the effect of debt aversion on student borrowing behaviour in times of crises, with particular emphasis on the COVID-19 pandemic. This is of particular relevance given the persistent nature and widespread social and financial impact of the pandemic. It is likely that this pandemic will not be the last crisis as the trajectory of crises, ranging from financial to humanitarian, are occurring more frequently. Therefore, the insights from this research effect could serve as ex-ante advice when making future policies concerned with crises that affect individuals' financial positions and related behaviour. Moreover, since this study shows that debt aversion makes student borrow less, which denotes that they are less inclined to take out student loans, it suggests that it might be counterproductive to make students borrow as part of study financing policy. In fact, it could discourage students from studying at all or encourage them to study abroad, which in itself could be an insightful future study in times of crisis. Such a development

could be to the detriment of Dutch higher education institutions and, most importantly, to the students themselves, particularly in terms of their academic potential. Furthermore, it could also be detrimental to the economic development of the Netherlands or Dutch State as highly educated people, on average, pay larger amounts of income taxes as a result of better paid jobs. In the context of the pandemic and future crises, the social loan system and the recent policy of reintroducing the basic grant as of the 2023-2024 academic year, which is lower than its former equivalent, some form of (additional) financial benefit, such as a higher basic grant, could increase the equality of opportunity among students. Another recommendation for further research could be, in light of the 'Dutch Education Support Program for Recovery and Perspective' and its compensation measures, to examine the direct impact of public financial compensation on the financial behaviour of students in higher education.

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# 7. Appendices

## Appendix A: Survey

Standard: Introduction
Standard: Dutch National Education Program for Recovery and Perspective (2 Questions)
Standard: Questions to filter out specific students (2 Questions)

Branch: New Branch
If
If Question 3: Are you currently enrolled at a Dutch higher education institution? (HBO, WO) HBO = H... No Is Selected
And Question 4: Were you enrolled at a Dutch higher education institution (HBO, WO) for at least 1 m... No Is Selected

EndSurvey: Advanced → Custom message *

Branch: New Branch
If
If Question 3: Are you currently enrolled at a Dutch higher education institution? (HBO, WO) HBO = H... Yes Is Selected
And Question 4: Were you enrolled at a Dutch higher education institution (HBO, WO) for at least 1 m... Yes Is Selected

Or Question 3: Are you currently enrolled at a Dutch higher education institution? (HBO, WO) HBO = H... Yes Is Selected
And Question 4: Were you enrolled at a Dutch higher education institution (HBO, WO) for at least 1 m... No Is Selected

Or Question 3: Are you currently enrolled at a Dutch higher education institution? (HBO, WO) HBO = H... No Is Selected
And Question 4: Were you enrolled at a Dutch higher education institution (HBO, WO) for at least 1 m... Yes Is Selected

Standard: Third question to filter out respondents (1 Questions)

Branch: New Branch
If
If Question 5: You are enrolled in higher education in The Netherlands. In what kind of higher education... Erasmus/Exchange (i.e., your main institution is not located in the Netherlands) Is Selected

EndSurvey: Advanced → Custom message *

Branch: New Branch
If
If Question 5: You are enrolled in higher education in The Netherlands. In what kind of higher education... Erasmus/Exchange (i.e., your main institution is not located in the Netherlands) Is Not Selected

Block: Continuation of Demographics 1: Education, Gender, Age and Nationality (6 Questions)
Block: Continuation of Demographics 2: Living conditions (3 Questions)
Standard: Financial Behaviour: Work (5 Questions)
Standard: Financial Behaviour: Parental Support (3 Questions)
Standard: Financial Behaviour: Borrowing Money 1 (2 Questions)
Standard: Financial Behaviour: Borrowing Money 2 (2 Questions)

Branch: New Branch
If
If Question 24: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... No Is Selected
And Question 25: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... No Is Selected

Standard: Financial Behaviour: Student Loan (6 Questions)
Standard: Borrowing/debt aversion (13 Questions)

**EndSurvey: Advanced → "Thank you for your time spent taking this survey. Your response has been recorded".**

Branch: New Branch
If
If Question 24: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... Yes Is Selected
And Question 25: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... Yes Is Selected
Or Question 24: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... Yes Is Selected
And Question 25: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... No Is Selected
Or Question 24: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... No Is Selected
And Question 25: Do you borrow money, or have you borrowed money by, for example, taking on a loan to... Yes Is Selected

Standard: Financial Behaviour: Borrowing Money 3 (2 Questions)
Standard: Financial Behaviour: Student Loan (6 Questions)
Standard: Borrowing/debt aversion (13 Questions)

**EndSurvey: Advanced → "Thank you for your time spent taking this survey. Your response has been recorded".**

***Custom message:**

**"Unfortunately, you are not part of the target group.
Thank you for your time spent taking this survey.

Your response has been recorded."**

Start of Block: Introduction

Welcome Dear Respondent,

Thank you for taking the time to participate in this survey!

For the completion of my MSc in Public Administration - Economics and Governance, I am conducting research about the impact of the Dutch education support program for recovery and perspective on the financial behaviour of students enrolled in Dutch higher education (HBO and WO).

Due to the outbreak of the Coronavirus and the corresponding measures, a large number of students have experienced an average study delay of six months. To provide you with a prominent example, one of the measures set out to compensate students for the extra costs incurred by a study delay is the 50% discount on the statutory tuition fee for the academic year of 2021-2022.

I strongly value and appreciate your input as your contribution aids in the overall understanding of how students alter their financial behaviour. Do not hesitate to share this survey with fellow students who are or were enrolled in an HBO or WO program during the COVID-19 pandemic.

In light of the General Data Protection Regulation (GDRP), it must be emphasized that by participating in this survey, you agree to your answers being recorded and used for research purposes. However, your responses are never linked to your personal data, and cannot be traced back to you as your IP address will not be stored. Thus, your identity is treated confidentially, and this research effort adheres to the protection of personal data as specified by law.

It will take approximately 5 to 7 minutes to complete the survey.

Kind regards,
Bart de Greef

*Click on the arrow-button to start the survey*

End of Block: Introduction

Start of Block: Dutch National Education Program for Recovery and Perspective

Question 1:
Are you familiar with the measures implemented by the Dutch government to **financially compensate students** for their potential study delay and the extra costs incurred as a result of the pandemic?

- ○ Not at all familiar (1)
- ○ Somewhat familiar (2)
- ○ Moderately familiar (3)
- ○ Quite familiar (4)
- ○ Very familiar (5)

Page Break

Question 2:
How did you find out about the financial compensation measures implemented by the Dutch government?
*__Multiple__ answers are possible*

- ☐ News (1)
- ☐ Social Media (2)
- ☐ Family, Friends and/or Fellow Students (3)
- ☐ Government Publication (e.g., DUO) (4)
- ☐ Higher Education Institution (e.g., Hogeschool, University) (5)
- ☐ Other, please specify: (6) _____
- ☐ Not applicable (7)

End of Block: Dutch National Education Program for Recovery and Perspective

Start of Block: Questions to filter out specific students

Demographic Characteristics: Education

Question 3:
Are you **currently** enrolled at a Dutch higher education institution? (HBO, WO)
HBO = Hoger Beroepsonderwijs or Higher Vocational Education (Fontys Hogescholen, Avans Hogeschool etc.)
WO = Wetenschappelijk onderwijs or University Education (Universiteit Leiden, Maastricht University etc.)

- ○ Yes (1)
- ○ No (0)

Question 4:
Were you enrolled at a Dutch higher education institution (HBO, WO) for **at least 1 month in both academic years of 2019-2020 and 2020-2021**?

- ○ Yes (1)
- ○ No (0)

**End of Block: Questions to filter out specific students**

**Start of Block: Third question to filter out respondents**

Demographic Characteristics: Education

Question 5:
You are enrolled in higher education in The Netherlands.
In what kind of higher educational program?

- ○ Associate degree* (1)
- ○ HBO Bachelor (2)
- ○ HBO Master (3)
- ○ Pre-Master (4)
- ○ WO Bachelor (5)
- ○ WO Master (6)
- ○ Erasmus/Exchange (i.e., your main institution is not located in the Netherlands) (7)
- ○ Other, please specify: (8) _____

***What is an associate degree?**
An associate degree is a two-year higher vocational education program that is usually developed in cooperation with MBO (vocational education) and the professional field. The final attainment level is between an MBO-4 and an HBO Bachelor. This program is intended for MBO-4 students and for people in employment. However, students with a secondary education diploma in HAVO or VWO are admissible as well.

After obtaining an associate degree, you will be able to enter an HBO bachelor's program immediately or at a later stage. Depending on how closely related the bachelor's program is to the associate degree, you will be able to graduate from an HBO bachelor's program after two or more years of study.

**End of Block: Third question to filter out respondents**

**Start of Block: Continuation of Demographics 1: Education, Gender, Age and Nationality**

Demographic Characteristics: Education

Question 6:
What is your general area of study?

- ○ Arts, Culture, Design and History (1)
- ○ Language and Communication (2)
- ○ Economics, Econometrics, Business, Management and Marketing (3)
- ○ Social and Behavioural Sciences (e.g., anthropology, psychology) (4)
- ○ Health (e.g., medicine, dentistry, physiotherapy) (5)
- ○ Life and Environmental Sciences, Agriculture and Nature (e.g., biology, geography) (6)
- ○ Teacher, Educational Sciences (7)
- ○ Law, Legal Studies, Political Science, Public Administration and Governance (8)
- ○ Technical and Exact Sciences (e.g., mathematics, chemistry, physics) (9)
- ○ Pilot, Military etc. (10)
- ○ Other, please specify: (11) _____

Question 7:
What year are you currently in?

- ○ First year (1)
- ○ Second year (2)
- ○ Third year (3)
- ○ Fourth year (4)
- ○ Other, please specify: (5) _____

Question 8:
Did you experience a study delay as a result of the COVID-19 pandemic and the corresponding measures (e.g., lockdowns)?

- ○ Yes (1)
- ○ No (0)

Page Break

Demographic Characteristics: General

Question 9:
What gender do you identify as?

- ○ Male (1)
- ○ Female (2)
- ○ Other (non-binary, etc.) (3)
- ○ Prefer not to answer. (4)

Question 10:
How old are you?

- ○ 17 or younger (1)
- ○ 18-21 (2)
- ○ 22-25 (3)
- ○ 26-29 (4)
- ○ 30 or older (5)

Page Break

Demographic Characteristics: Nationality

EEA The European Economic Area (EEA) is composed of the Member States of the European Union (EU) and the member countries of the European Free Trade Association (EFTA), except for Switzerland:

*Austria (AT), Belgium (BE), Bulgaria (BG), Cyprus (CY), Czechia (CZ), Germany (DE), Denmark (DK), Estonia (EE), Greece (EL), Spain (ES), Finland (FI), France (FR), Croatia, (HR), Hungary (HU), Ireland (IE), Iceland (IS), Italy (IT), Liechtenstein (LI), Lithuania (LT), Luxembourg (LU), Latvia (LV), Malta (MT), Netherlands (NL), Norway (NO), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovenia (SI), Slovakia, (SK)*

Question 11:
Where are you from?
*If you have **dual nationality**, answer the question in view of the nationality used to enrol in Dutch higher education*

- ○ Within the EEA, Switzerland, Suriname, Aruba, Curaçao, St. Maarten, or Caribbean Netherlands (1)
- ○ Outside the EEA (2)

Page Break

**End of Block: Continuation of Demographics 1: Education, Gender, Age and Nationality**

Start of Block: Continuation of Demographics 2: Living Conditions

Demographic Characteristics: Living Conditions

Question 12:
What is your current living situation?

- ○ Living with parent(s)/legal guardian(s) (1)
- ○ Living with partner/spouse (2)
- ○ Living with friend(s)/fellow student(s) (3)
- ○ I live alone (4)
- ○ Other, please specify: (5) _____

Question 13:
In what type of accommodation do you live?

- ○ House of parent(s)/legal guardian(s) (1)
- ○ On-campus housing (e.g., student dormitory, residence halls) (2)
- ○ Off-campus housing (e.g., rented/bought room, studio, apartment, house) (3)
- ○ Other, please specify: (4) _____

End of Block: Continuation of Demographics 2: Living Conditions

Start of Block: Financial Behaviour: Work

Financial Behaviour: Work

---

Question 14:
Do you **currently** have a paid job?

- ○ Yes, part-time (1)
- ○ Yes, full-time (2)
- ○ No (0)

---

Question 15:
Did you have a paid job **before** the outbreak of COVID-19?

- ○ Yes, part-time (1)
- ○ Yes, full-time (2)
- ○ No (0)

---

Question 16:
Why do you/did you have a paid job?
*Multiple answers are possible*

- [ ] To pay for tuition and other education-related expenses (1)
- [ ] To pay for housing, insurance and other basic necessities (2)
- [ ] To earn extra money to spend freely (3)
- [ ] To save money (4)
- [ ] To minimize student loan debt (5)
- [ ] To gain work experience (6)
- [ ] To network and gain connections (7)
- [ ] Other, please specify: (8) _____

Question 17:
Do you still have the **same** job as you did before the pandemic and the consequential lockdowns?

- ○ Yes (1)
- ○ No (0)
- ○ Not applicable (.)

Question 18:
Were you laid off or fired as a consequence of the pandemic?

- ○ Yes (1)
- ○ No (0)
- ○ Not applicable (.)

Page Break

**End of Block: Financial Behaviour: Work**

**Start of Block: Financial Behaviour: Parental Support**

Financial Behaviour: Parental Support

Question 19:
Do you receive or have you received **parental financial support** in your educational endeavours?

- ○ Yes (1)
- ○ No (0)

*Skip To: End of Block If Question 19 = 2*

Question 20:
You (have) receive(d) financial support from your parent(s) and/or legal guardian(s).
How much do/did you receive a month in Euros (€)?
*This amount does not include tuition fees*

- ○ € (1) _____
- ○ Prefer not to answer. (2)

Question 21:
Is/was your **tuition fee** paid by your parent(s)/legal guardian(s)?

- ○ Yes (1)
- ○ No (0)

Page Break

**End of Block: Financial Behaviour: Parental Support**

**Start of Block: Financial Behaviour: Borrowing Money 1**

Financial Behaviour: Borrowing Money

Question 22:
To what extent do you agree with the following statement:
I am aware of Dienst Uitvoering Onderwijs (DUO) and what it does for students.

- ○ Strongly agree (1)
- ○ Somewhat agree (2)
- ○ Neither agree nor disagree (3)
- ○ Somewhat disagree (4)
- ○ Strongly disagree (5)

Question 23:
Do you know the difference between the current student loan and the supplementary student grant provided by DUO?

- ○ Yes (1)
- ○ No (0)

Page Break

**End of Block: Financial Behaviour: Borrowing Money 1**

**Start of Block: Financial Behaviour: Borrowing Money 2**

Financial Behaviour: Borrowing Money

Question 24:
Do you borrow money, or have you borrowed money by, **for example**, taking on a loan to pay for **non-educational purposes**?

- ○ Yes (1)
- ○ No (0)

Question 25:
Do you borrow money, or have you borrowed money by, ***for example***, taking on a loan to pay for **educational purposes**? (e.g., tuition, books, housing)

- ○ Yes (1)
- ○ No (0)

Page Break

**End of Block: Financial Behaviour: Borrowing Money 2**

**Start of Block: Financial Behaviour: Borrowing Money 3 (based on branch for question 24 and 25) → provided at the end of this survey overview in Appendix A.**

**Start of Block: Financial Behaviour: Student Loan**

Financial Behaviour: Student Loan

Question 28:
Do you **currently** have a student loan?

- ○ Yes (1)
- ○ No (0)

*Skip To: Question 30 If Question 28 = 2*

Question 29:
You **currently** have a student loan.
How much **is** your student loan a month in Euros (€)?

- ○ € (1) _____
- ○ Prefer not to answer. (2)

Page Break

Question 30:
Did you have a student loan **before** the outbreak of COVID-19?

- ○ Yes (1)
- ○ No (0)

*Skip To: Question 32 If Question 30 = 2*

Question 31:
You had a student loan **before** the outbreak of COVID-19.
How much **was** your student loan a month in Euros (€)?

- ○ € (1) _____
- ○ Prefer not to answer. (2)

Page Break

Question 32:
Some students are eligible to receive a supplementary study grant which is dependent on their parents' income data.
Do you receive the supplementary student grant provided by DUO?

- ○ Yes (1)
- ○ No (0)

Question 33:
Do you make or have you made use of the 'Studentenreisproduct' i.e., student OV-chipcard or student travel product during your studies?

- ○ Yes (1)
- ○ No (0)

Page Break

**End of Block: Financial Behaviour: Student Loan**

Start of Block: Borrowing/debt aversion

Risk and Debt Mentality towards Borrowing and Debt

Question 34:
Which of the following reasons do you think are good reasons to borrow money?
*Multiple answers are possible*

- ☐ Education (1)
- ☐ Housing (2)
- ☐ Nutrition and other basic necessities (3)
- ☐ Monthly Bills (e.g., insurances, electricity etc.) (4)
- ☐ Emergencies (5)
- ☐ Entertainment (6)
- ☐ Buying a car or another form of transportation (apart from public transport) (7)
- ☐ To pay off other debts with a higher interest rate (8)
- ☐ Other, please specify: (9) _____

Page Break

The difference between a **debit** and **credit** card:

With the use of a **debit** card, someone is spending money which is directly taken from their **own bank account/funds.**

When one uses a **credit** card, this person is essentially **borrowing** money as **credit** cards charge purchases using a line of credit. These purchases are first paid by the bank and put on your bill. These bills eventually, usually at the end of the month, need to be paid back to the bank. If someone does not pay in time, this person needs to pay interest.

---

Question 35:
Do you have a debit card?

- ○ Yes (1)
- ○ No (0)

---

Question 36:
Do you have a credit card?

- ○ Yes (1)
- ○ No (0)

*Skip To: Question 39A If Question 36 = 2*

---

Page Break

Question 37:
Do you usually pay off your credit card balances/debt each month?

- ○ Yes (1)
- ○ No (0)

---

Question 38:
In total, how many credit cards with a **different bank account** do you use?

- ○ 1 credit card (1)
- ○ 2 credit cards (2)
- ○ 3 credit cards (3)
- ○ 4 or more credit cards (4)

---

Page Break

Question 39:
If you had to make an unexpected expenditure of €**500**,- or more, would you do the following?

A. **Borrow from a private financial institution** (e.g., bank)

- Yes (1)
- No (0)

---

B. **Borrow money from a public financial institution** (e.g., student loan provided by government, DUO)

- Yes (1)
- No (0)

---

C. **Use a credit card**

- Yes (1)
- No (0)

---

D. **Use your savings**

- Yes (1)
- No (0)

---

Question 40:
If you had to make an unexpected expenditure of €**5000**,- or more, would you do the following?

A. **Borrow from a private financial institution** (e.g., bank)

- ○ Yes (1)
- ○ No (0)

---

B. **Borrow money from a public financial institution** (e.g., student loan provided by government, DUO)

- ○ Yes (1)
- ○ No (0)

---

C. **Use a credit card**

- ○ Yes (1)
- ○ No (0)

---

D. **Use your savings**

- ○ Yes (1)
- ○ No (0)

**End of Block: Borrowing/debt aversion**

Start of Block: Financial Behaviour: Borrowing Money 3 (based on branch for question 24 and 25)

Question 26:
From whom or where do/did you borrow this money?
*__Multiple__ answers are possible*

- ☐ Parent(s)/Legal Guardian(s) (1)
- ☐ Friends/Fellow Students (2)
- ☐ Public Institutions (e.g., Government, DUO) (3)
- ☐ Private Institutions (e.g., Bank) (4)
- ☐ Other, please specify: (5) _____

Question 27:
How much do/did you borrow a month in Euros (€)?

- ○ € (1) _____
- ○ Prefer not to answer. (2)

Page Break

End of Block: Financial Behaviour: Borrowing Money 3

## Appendix B: Tables

### Table B1. Two Filter Questions about Students' Enrolment in Higher Education

| | Enrolled for at least 1 month in both academic years of 2019-2020 and 2020-2021 | | Total |
|---|---|---|---|
| **Currently enrolled in higher education in the Netherlands** | **Yes** | **No** | |
| **Yes** | 109<br>87.20% | 10<br>8.00% | 119<br>95.20% |
| **No** | 1<br>0.80% | 5<br>4.00% | 6<br>4.80% |
| **Total** | 110<br>88.00% | 15<br>12.00% | 125<br>100.00% |

### Table B2. Third Filter Question: Type of Higher Education Program

| Type of Program | Frequency | Relative freq. (%) | Cum. |
|---|---|---|---|
| **Associate Degree** | 0 | 0 | 0 |
| **HBO Bachelor** | 14 | 11.67 | 11.67 |
| **HBO Master** | 3 | 2.50 | 14.17 |
| **Pre-Master** | 1 | 0.83 | 15.00 |
| **WO Bachelor** | 21 | 17.50 | 32.50 |
| **WO Master** | 79 | 65.83 | 98.33 |
| **Erasmus/Exchange** | 2 | 1.67 | 100.00 |
| **Other** | 0 | 0 | 100.00 |
| **Total** | 120 | 100.00 | |

**Table B3. Descriptive/Summary Statistics of the Dataset: Individual Characteristics**

| Variable | Frequency | Relative freq. (%) | Mean (*SD*) |
|---|---|---|---|
| **Gender** | | | |
| Male | 38 | 32.20 | |
| Female | 79 | 66.95 | |
| Prefer not to answer | 1 | 0.85 | |
| **Age** | | | |
| 18-21 | 11 | 9.32 | |
| 22-25 | 96 | 81.36 | |
| 26-29 | 10 | 8.47 | |
| 30 or older | 1 | 0.85 | |
| **Country** | | | |
| Within the EEA, Switzerland, Suriname, Aruba, Curaçao, St. Maarten, or Caribbean Netherlands | 113 | 95.76 | |
| Outside the EEA | 5 | 4.24 | |
| **Type of Study Program** | | | |
| HBO Bachelor | 14 | 11.86 | |
| HBO Master | 3 | 2.54 | |
| Pre-Master | 1 | 0.85 | |
| WO Bachelor | 21 | 17.80 | |
| WO Master | 79 | 66.95 | |
| **Area of Study** | | | |

| | | | |
|---|---|---|---|
| Arts, Culture, Design and History | 4 | 3.39 | |
| Language and Communication | 3 | 2.54 | |
| Economics, Econometrics, Business, Management and Marketing | 16 | 13.56 | |
| Social and Behavioural Sciences | 13 | 11.02 | |
| Health | 2 | 1.69 | |
| Life and Environmental Sciences, Agriculture and Nature | 1 | 0.85 | |
| Teacher, Educational Sciences | 2 | 1.69 | |
| Law, Legal Studies, Political Science, Public Administration and Governance | 70 | 59.32 | |
| Technical and Exact Sciences | 5 | 4.24 | |
| Other[26] | 2 | 1.69 | |
| **Type of Accommodation** | | | |
| House of parent(s)/legal guardian(s) | 34 | 28.81 | |
| On-campus housing | 1 | 0.85 | |
| Off-campus housing | 83 | 70.34 | |
| **Receiving: Parental Financial Support** | | | |
| Yes | 79 | 66.95 | |
| No | 39 | 33.05 | |
| **Monthly amount of parental support in Euros (€) (N=53)** [27] | | | 436.11 (*379.74*) |

[26] One respondent/student is currently enrolled in the field of "Humanities" and the other in "Engineering" (Raw data available upon request).
[27] The mean and standard deviation (*SD*) are based on 53 respondents. This is because 26 of the 79 respondents who receive parental support preferred not to disclose the monthly amount (see Table B6).

| | | | |
|---|---|---|---|
| **Tuition Fee Paid by Parent(s)/Legal Guardian(s) (N=79)[28]** | | | |
| Yes | 64 | 81.01 | |
| No | 15 | 18.99 | |
| **The Experience of Direct and Indirect Effects of the Pandemic** | | | |
| **Study Delay** | | | |
| Yes | 49 | 41.53 | |
| No | 69 | 58.47 | |
| **Layoff (N=86)[29]** | | | |
| Yes | 27 | 31.40 | |
| No | 59 | 68.80 | |
| **Familiarity with National Support Program** | | | |
| Not at all familiar | 15 | 12.71 | |
| Somewhat familiar | 39 | 33.05 | |
| Moderately familiar | 24 | 20.34 | |
| Quite familiar | 27 | 22.88 | |
| Very familiar | 13 | 11.02 | |
| **Awareness of DUO** | | | |
| Strongly agree | 31 | 26.27 | |
| Somewhat agree | 65 | 55.08 | |

[28] Based on the total number of students in higher education/respondents who receive parental support for their educational endeavors i.e., 79 respondents.
[29] Of the 118 respondents included in the sample, 32 indicated that the question was not applicable to them as they did not have a job prior to the outbreak of COVID-19 (See question 18 in Appendix A; raw data available upon request)

| | | | |
|---|---|---|---|
| Neither agree nor disagree | 6 | 5.08 | |
| Somewhat disagree | 6 | 5.08 | |
| Strongly disagree | 10 | 8.47 | |
| **Knowledge of Study Financing System** | | | |
| Yes | 69 | 58.47 | |
| No | 49 | 41.53 | |

## Table B4. Descriptive/Summary Statistics of the Dataset: Financial Behaviour

| **Variable** | **Frequency** | **Relative freq. (%)** | **Mean (*SD*)** |
|---|---|---|---|
| **Borrowing for Non-educational Purposes** | | | |
| Yes | 33 | 27.97 | |
| No | 85 | 72.03 | |
| **Borrowing for Educational Purposes** | | | |
| Yes | 69 | 58.47 | |
| No | 49 | 41.53 | |
| **Monthly Borrowing Amount in Euros (€) (N=57)[30]** | | | 880.21 (*903.47)* |
| **Current Student Loan (N=56)[31]** | | | 781.02 (*264.74)* |
| Yes | 62 | 52.54 | |
| No | 56 | 47.46 | |

[30] The mean and standard deviation (*SD*) are based on 57 respondents. This is because 14 of the 71 respondents that borrow(ed) money for non-educational purposes, educational purposes or both preferred not to disclose the monthly amount of parental support (See Table B7).
[31] The mean and standard deviation (*SD)* are based on 56 respondents. This is because 6 of the 62 respondents who currently have a student loan preferred not to disclose the monthly amount (See Table B8).

| | | | |
|---|---|---|---|
| **Student Loan Before the Pandemic (N=56)[32]** | | | 689.38 (*306.21*) |
| Yes | 65 | 55.08 | |
| No | 53 | 44.92 | |
| **Receiving the Supplementary Grant** | | | |
| Yes | 22 | 18.64 | |
| No | 96 | 81.36 | |
| **Using the Student Travel Product** | | | |
| Yes | 95 | 80.51 | |
| No | 23 | 19.49 | |
| **Current Job** | | | |
| Yes, part-time | 70 | 59.32 | |
| Yes, full-time | 6 | 5.08 | |
| No | 42 | 35.59 | |
| **Job Before the Outbreak of COVID-19** | | | |
| Yes, part-time | 79 | 66.95 | |
| Yes, full-time | 7 | 5.93 | |
| No | 32 | 27.12 | |

[32] The mean and standard deviation (*SD)* are based on 56 respondents. This is because 9 of the 65 respondents who had a student loan before the outbreak of COVID-19 preferred not to disclose the monthly amount (See Table B9).

## Table B5. Type of Higher Education Program by Gender

| Type of Study Program (relative freq. in %) | Gender (relative freq. in %) | | | |
|---|---|---|---|---|
| | Male | Female | Prefer not to say | Total |
| HBO Bachelor | 4 (3.39) | 10 (8.47) | 0 (0.00) | 14 (11.86) |
| HBO Master | 0 (0.00) | 3 (2.54) | 0 (0.00) | 3 (2.54) |
| Pre-Master | 0 (0.00) | 1 (0.85) | 0 (0.00) | 1 (0.85) |
| WO Bachelor | 3 (2.54) | 18 (15.25) | 0 (0.00) | 21 (17.80) |
| WO Master | 31 (26.27) | 47 (39.83) | 1 (0.85) | 79 (66.95) |
| Total | 38 (32.20) | 79 (66.95) | 1 (0.85) | 118 (100.00) |

## Table B6. Disclosing Monthly Amount of Parental Support

| Disclose or not: monthly amount of parental support in Euros (€) | Frequency | Relative freq. (%) |
|---|---|---|
| Disclose monthly amount | 53 | 67.09 |
| Prefer not to answer | 26 | 32.91 |
| Total | 79 | 100.00 |

## Table B7. Disclosing General Amount Borrowed Monthly

| Disclose or not: monthly amount borrowed in Euros (€) | Frequency | Relative freq. (%) |
|---|---|---|
| Disclose monthly amount | 57 | 80.28 |
| Prefer not to answer | 14 | 19.72 |
| Total | 71 | 100.00 |

## Table B8. Disclosing Monthly Amount of Current Student Loan

| Disclose or not: monthly amount of current student loan in Euros (€) | Frequency | Relative freq. (%) |
|---|---|---|
| Disclose monthly amount | 56 | 90.32 |
| Prefer not to answer | 6 | 9.68 |
| Total | 62 | |

## Table B9. Disclosing Monthly Amount of Former Student Loan

| Disclose or not: monthly amount of former student loan in Euros (€) | Frequency | Relative freq. (%) |
|---|---|---|
| Disclose monthly amount | 56 | 86.15 |
| Prefer not to answer | 9 | 13.85 |
| Total | 65 | 100.00 |

## Table B10. Individual Factors of Debt Aversion Index

| Variable | Frequency | Relative freq. (%) |
|---|---|---|
| **Possession of Credit Card** | | |
| Yes | 55 | 46.61 |
| No | 63 | 53.39 |
| **Pay Off Debt/Balance Monthly** | | |
| No Credit Card(s)[33] | 63 | 53.39 |
| Yes | 51 | 43.22 |
| No | 4 | 3.39 |
| **Number of Credit Cards** | | |
| No Credit Card(s)[34] | 63 | 53.39 |
| 1 Credit Cards | 49 | 41.53 |
| 2 Credit Cards | 6 | 5.08 |
| **In Case of Unexpected Expenditure of €500, - or More:** | | |
| **Borrow From a Private Financial Institution** | | |
| Yes | 4 | 3.39 |
| No | 114 | 96.61 |
| **Borrow From a Public Financial Institution** | | |
| Yes | 39 | 33.05 |
| No | 79 | 66.95 |
| **Use a Credit Card** | | |
| Yes | 20 | 16.95 |
| No | 98 | 83.05 |
| **Use Your Savings** | | |
| Yes | 112 | 94.92 |
| No | 6 | 5.08 |
| **In Case of Unexpected Expenditure of €5000, - or More:** | | |
| **Borrow From a Private Financial Institution** | | |

[33] Missing values: As explained in the methodology, respondents/students who do not have a credit card (N=63) are assigned a score of 1, which is the same score as someone who pays off his or her credit card balance every month. This is based on the assumption that a debt-averse individual who owns a credit card is more likely to pay off the associated debt each month.

[34] Missing values: As explained in the methodology, respondents/students who do not have a credit card (N=63) are assigned a score of 1. In the additive index, the 'highest' score that one can be awarded if they possess a credit card is 0.75. Therefore, someone who does not own any credit card(s) is assigned a score of 1 as they are deemed 'most' debt-averse.

| | | |
|---|---|---|
| Yes | 40 | 33.90 |
| No | 78 | 66.10 |
| **Borrow From a Public Financial Institution** | | |
| Yes | 57 | 48.31 |
| No | 61 | 51.69 |
| **Use a Credit Card** | | |
| Yes | 12 | 10.17 |
| No | 106 | 89.83 |
| **Use Your Savings** | | |
| Yes | 98 | 83.05 |
| No | 20 | 16.95 |

## Table B11. Degree of Debt Aversion: Distribution Among the Respondents/Students

| Degree of Debt Aversion | Frequency | Relative freq. (%) |
|---|---|---|
| 3.75 | 1 | 0.85 |
| 4.75 | 1 | 0.85 |
| 5.5 | 2 | 1.69 |
| 5.75 | 7 | 5.93 |
| 6 | 1 | 0.85 |
| 6.5 | 1 | 0.85 |
| 6.75 | 5 | 4.24 |
| 7 | 4 | 3.39 |
| 7.75 | 11 | 9.32 |
| 8 | 9 | 7.63 |
| 8.5 | 1 | 0.85 |
| 8.75 | 14 | 11.86 |
| 9 | 21 | 17.80 |
| 9.5 | 2 | 1.69 |
| 9.75 | 10 | 8.47 |
| 10 | 10 | 8.47 |
| 11 | 18 | 15.25 |

## Table B12. Tabulation of Variable 'amountborrowing'.

| General Monthly Amount Borrowed in Euros (€) | Freq. | Relative freq. (%) |
|---|---|---|
| 20 | 1 | 1.75 |
| 110 | 1 | 1.75 |
| 200 | 1 | 1.75 |
| 250 | 1 | 1.75 |
| 300 | 2 | 3.51 |
| 355 | 1 | 1.75 |
| 400 | 4 | 7.02 |
| 440 | 1 | 1.75 |
| 500 | 4 | 7.02 |
| 600 | 4 | 7.02 |
| 750 | 2 | 3.51 |
| 800 | 5 | 8.77 |
| 850 | 4 | 7.02 |
| 860 | 1 | 1.75 |
| 890 | 1 | 1.75 |
| 900 | 3 | 5.26 |
| 927 | 1 | 1.75 |
| 953 | 1 | 1.75 |
| 970 | 1 | 1.75 |
| 984 | 1 | 1.75 |
| 1000 | 7 | 12.28 |
| 1011 | 1 | 1.75 |
| 1024 | 3 | 5.26 |
| 1100 | 3 | 5.26 |
| 1130 | 1 | 1.75 |
| 2500 | 1 | 1.75 |
| 7000 | 1 | 1.75 |
| Total | 57 | 100 |

## Table B13. Pairwise Correlation Matrix: Removing the Outliers

| | Debtaversion | Amountborrowing |
|---|---|---|
| **Debtaversion** | 1.0000 | |
| **Amountborrowing** | -0.3097* | 1.0000 |

*Note: *p<0.05; **p<0.01*

**Table B14. Tabulation of Variable 'levelofeducation' by 'studentloancurrent'.**

| | Studentloancurrent[35] | | |
|---|---|---|---|
| **Levelofeducation[36]** | **No** | **Yes** | **Total** |
| **HBO Bachelor** | 9 | 5 | 14 |
| **HBO Master** | 3 | 0 | 3 |
| **WO Bachelor** | 6 | 16 | 22 |
| **WO Master** | 38 | 41 | 79 |
| **Total** | 56 | 62 | 118 |

**Table B15. Model 5 – Simple Slopes by Each Level of *Layoff* as The Moderator**

| | Delta-method | | | | | |
|---|---|---|---|---|---|---|
| | **dy/dx** | **Std. Err.** | **T** | **P > \| t \|** | **[95% Conf. Interval]** | |
| **Debtaversion** | | | | | | |
| **Layoff** | | | | | | |
| **No** | -56.089 | 38.248 | -1.47 | 0.153 | -134.201 | 22.023 |
| **Yes** | -133.987 | 58.162 | -2.30 | 0.028 | -252.769 | -15.205 |

**Table B16: Model 6 – Simple Slopes by Each Level of *Layoff* as The Moderator**

| | Delta-method | | | | | |
|---|---|---|---|---|---|---|
| | **dy/dx** | **Std. Err.** | **T** | **P > \| t \|** | **[95% Conf. Interval]** | |
| **Debtaversion** | | | | | | |
| **Layoff** | | | | | | |
| **No** | -26.185 | 42.012 | -0.62 | 0.538 | -112.387 | 60.016 |
| **Yes** | -120.034 | 58.418 | -2.05 | 0.050 | -239.899 | -0.170 |

[35] Variable *studentloancurrent* shows whether or not the respondents currently have a student loan (categorical).
[36] Variable *levelofeducatio*n shows the current level of higher education in which the respondents are enrolled (categorical).

**Table B17. Spearman Correlation between Categorical Variables included in the Empirical Analysis.**

| | Studydelay | Layoff | Gender | Age | Levelofeducation | Parentalsupport | Currentliving | Employmentstatus |
|---|---|---|---|---|---|---|---|---|
| **Studydelay** | 1.0000 | | | | | | | |
| **Layoff** | 0.2217* | 1.0000 | | | | | | |
| **Gender** | 0.0428 | -0.0225 | 1.0000 | | | | | |
| **Age** | 0.1618 | -0.0015 | 0.0579 | 1.0000 | | | | |
| **Levelofeducation** | -0.0874 | -0.0546 | -0.1523 | 0.1966 | 1.0000 | | | |
| **Parentalsupport** | -0.1855 | 0.0382 | -0.0607 | -0.1151 | 0.1401 | 1.0000 | | |
| **Currentliving** | -0.0373 | -0.1002 | 0.0751 | 0.2355* | -0.0308 | 0.0858 | 1.0000 | |
| **Employmentstatus** | -0.1493 | -0.1404 | -0.1448 | 0.1255 | -0.1103 | -0.0321 | -0.0206 | 1.0000 |

*Note: *p<0.05; **p<0.01*