# The relation between number of working hours and students' level of stress, and the role of support

A Master Thesis of the Strategic Human Resources Leadership Program at Radboud University

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## Preface

I am pleased to present you with the thesis entitled 'The relation between number of working hours and students' level of stress, and the role of support'. In this thesis a quantitative research design was used and the study was carried out among Dutch students of University of Applied Sciences or University level. The research was carried out in order to contribute to the scientific literature and to contribute to the solution of a social problem: increasing stress among students. In addition, this research was written in relation to my graduation from the master Strategic Human Resources Leadership at Radboud University. From February 2021 until June 2021, I have been working on the research and writing the thesis.

This is my first time conducting a full academic research and therefore it is has not been without its challenges. It was a live and learn experience. The Covid-19 pandemic ensured that all meetings took place online. This had its advantages and disadvantages. My supervisor and I have never seen each other in real life, which probably makes the working relationship different. However, Zoom allowed us to schedule meetings at short notice and we did not have to travel. In addition, my social life was limited so I could put all my energy and time into conducting this research. Another positive experience was that a number of students were conducting research on the same topic. This ensured that we were able to design the questionnaire together and ask each other for help and advice if necessary.

I wish to show my appreciation to all the persons who helped me in this endeavour. With their help, this research paper became reality. I would especially like to thank my supervisor, Pierre Cavalini, for his patience, guidance, understanding and feedback. Besides, I would like to thank all the students who completed the questionnaire for their time and effort. Without the cooperation of these students, it would not have been possible to complete this study. In addition, I want to express my appreciation to all the thesis circle students for their collaboration and fruitful discussions. We were able to spar about issues we encountered during the process and because of our pleasant cooperation, a suitable and valid questionnaire was issued. Furthermore, I would like to thank my supervisor at my part-time job for the trust she had in me and the time and rest she gave me to successfully complete the thesis. Lastly, I thank all my friends and family who supported me at all times.

I wish you much reading pleasure.

Femke Dings

Venlo, 13 June 2021

# **Abstract**

In the Netherlands many students have to deal with stress and stress is often not without consequences. One of the reasons of stress among students is combining a study and a part-time job. The main research question of this research is "To what extent is the number of working hours in a part-time job related to stress amongst students and to what extent can support from the supervisor, co-workers, organization and academic peers buffer this relationship?" The research question is answered by conducting a quantitative research among students in the Netherlands from University of Applied Sciences and University level. The research instrument used is a questionnaire and was completed by 311 students in April-May 2021. It is found that the number of working hours in a part-time job is not related to the level of stress of students, and support from the supervisor, co-workers, organization and academic peers do not buffer this relationship. Furthermore, it is found that perceived organizational support and academic peer support are negatively related to the level of stress of students. Besides, the results have shown that a part-time job is not related to the degree of stress. Practical implications are given for reducing the degree of stress of students.

Key words: working while studying, social support, stress, role stress, number of working hours

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# 1. Introduction

Research of the National Institute for Public Health and Environment, on behalf of the Ministry of Health, Welfare and Sport, has shown that the society in the Netherlands is facing increasing pressure (Rijksinstituut voor Volksgezondheid en Milieu, 2018). Various future developments in society have been identified and students have indicated that the increasing pressure on youngsters and young adults, especially performance pressure, is the most urgent social task for the future. Increased pressure can cause stress and health problems, and student psychologists are seeing more and more students with increasingly severe and complex complaints, leading to more young people being referred to a doctor or mental health services. Research of EenVandaag and 7Days (2014) has shown that 60% of the youngsters have once or more times a week stress about school or study matters. Dopmeijer (2017) has studied a medium-sized University of Applied Sciences in the Netherlands. He found that 38,9% of the students reported mild to moderate anxiety and depression symptoms, 14,4% reported severe anxiety and depression symptoms, and 25% reported burnout symptoms. In addition, research of the national student union (Schmidt & Simons, 2013) concluded that 49% of the students have or have had psychological complaints. The most reported complaints were depression, stress and tiredness.

Many students report physical complaints like headaches, stomach aches or insomnia due to stress (EenVandaag & 7Days, 2014). They feel restless and have few moments of real relaxation. Studies have shown that reduced well-being has a negative impact on study results and leads to study delay, lower grade point average, less attendance at lectures, less time spent studying and social isolation (Click, Huang, & Kline, 2017; Gubbels & Kappe, 2017; Storrie, Ahern, & Tuckett, 2010). Stress or reduced well-being among young people can be related to increased performance pressure, lack of (financial) resources, relationships, expectations of oneself and others, career prospects and the combination of study, work and a social life (Beiter et al., 2015; Dopmeijer, 2017; Gubbels & Kappe, 2017; Sharp & Theiler, 2018).

Combining study, work and a social life, which can be a reason for stress, is increasingly common among students. The number of pupils and students, aged between 16 and 27, who are combining study with paid work increased from 39% to almost 60% between 2004 and 2014 (Rijksinstituut voor Volksgezondheid en Milieu, 2018). Not only in the Netherlands this situation has arisen. In the United Kingdom the University of Ulster (2000) has shown that the percentage of full-time students in paid employment during term time rose from 55% in 1996 to 74% in 2000 (in: Neill, Mulholland, Ross & Leckey, 2004). Along with this study, more studies conducted in developed countries revealed

the same trend of an increasing proportion of working students, for example in the United States (King, 2006), Great Britain (Bradley, 2006) and Australia (Hall, 2010).

Students combine study and work for different reasons. Reasons could be to earn money for covering basic essentials or related expenses (Callender, 2008; Robotham, 2012), relieving the financial burden of parents (Hall, 2010), improving the network with managers, employees and customers (Curtis, 2007), gaining experience or practical skills (Oil & Morrison, 2005), and socializing and meeting people (Curtis, 2007). Neill et al. (2004) found in their study that 60% of the students felt that part-time work prepared them at least as well for placement after graduation compared with the course itself. Besides, employers indicated that a good profile of part-time employment can help supplement a relatively weak academic profile. Jewell (2014) and Passaretta & Triventi (2015) also found a positive effect on labour market outcomes such as employment rates, wages, job quality, and job match quality when so students worked during tertiary education.

So students do have a part-time job while following a full time study for different reasons and a parttime job can provide good opportunities for the student. However, a part-time job can also be detrimental for the student. Wang, Kong, Shan, & Vong (2010) found that a part-time job damages students' relationship with their parents. Hodgson & Spours (2001) noted that teachers were concerned that students' commitment to their part-time employment would compromise study time. In the same way, Humphrey (2006), Callender (2008) and Robotham (2012) concluded that unemployed students were found to have higher academic performance than working students. According to Tessema, Ready & Astani (2014), working more hours could also affect the satisfaction of working students, while satisfaction is important as satisfied students are more likely to be committed and continue their studies than unsatisfied students (Jamelske, 2009). The study of Robotham (2012) showed that 53% of the students with a part-time job cut down on leisure and social activities and 31% felt so tired that they could not concentrate. Another negative result of a part-time job while studying, as mentioned before, is an increase in the level of stress. In the study of Robotham 54% of the students indicated that the part-time job increased their levels of stress. Bergmann, Muth & Loerboks (2019) concluded that part-time jobs were perceived to increase stress, to be time-consuming and where perceived to result in poorer academic performance.

The increased level of stress as a consequence of a part-time job could be explained by the role stress theory of Kahn, Wolfe, Quinn, Snoek and Rosenthal (1964). This theory states that the experience of ambiguity of different roles will result in undesirable states. By combining education and work, the student occupies two different roles: the student role and the work role. According to Lazarus (1993), conflicting demands and expectations in multiple roles may or may not be compatible

with each other. When it is incompatible, it leads to stress and this can in turn hamper productivity. This means that when a student experiences different demands from both roles, it could lead to stress. For example, when the manager asks to work a few hours more, while the student also has an exam on the next day for which he/she needs to study, the student needs to choose between disappointing the manager, or risking to retrograde academic performance. Making a choice between this could lead to stress for the student.

The role stress conflict does not only occur when combining a work and student role, but also when an employee faces difficulties with managing the work and family role (Greenhaus & Beutell, 1985). Work-family interference is 'a form of inter-role conflict in which the role pressures from the work and family domains are mutually incompatible in some respect. That is, participation in the work (or family) role is made more difficult by virtue of participation in the family (or work) role' (p.77). Another example of role conflict is when an employee needs to provide informal care for a family member (Plaisier, 2015). In all situations the person is involved in different domains and the efforts made by the person to comply with the demands of the different domains can lead to strain if the demands are incompatible or too numerous (Greenhaus & Kopelman, 1981).

In the light of combining family and work, many studies have already been carried out. A concept which recurred many times is 'support'. The Job Demands-Control-Support (JDCS) Model assumes that social support (and job control) buffers the negative effect of job demands on health and wellbeing (Karasek & Theorell, 1990, p.8). The study of Lizano, Hsiao, Mor Barak, & Casper (2014) examined, for example, the role of social support in the workplace as a potential buffer against the influence of work-family conflict. In addition, Yunita & Kismono (2015) studied the influence of workfamily conflict on employee's turnover intentions with social support as moderating effect. They found that social support, from the work and family domains, moderated the influence of a role-conflict (work and family) on employee's turnover intentions. Talukder (2019) found that supervisor support was negatively related to work-family conflict, and McTernan, Dollard, Tuckey & Vandenberg (2016) found that co-worker support buffered the reciprocal relationship between work-family conflict and depression, showing a protective effect. According to the study of Baker, Israel & Schurman (1996) social support is important in understanding the occupational stress process.

Students have thus expressed concerns about the increasing pressure on youngsters and young adults, and Schmidt & Simons (2013) concluded that 49% of the youngsters have or have had psychological complaints. The most reported causes for these complaints were study pressure, family circumstances and too many activities besides studying. The combination of study, work, curriculum vitae building and social life was next to prestation-, study- and financial pressure perceived as most

stressful. While the number of students who have a part-time job next to their study is increasing, more students are dealing with combining study, work and other activities besides studying. Consequently, more students could have psychological complaints in the future. Stress is one of the three complaints from the students with psychological complaints and stress can cause a decline in intellectual functions, resulting in a decrease in concentration and attention (Cornelis, 2015; Goh, Pfeffer, & Zenios, 2015). Stress can also result in physical consequences like muscle tension, stomach pain and fatigue. More importantly, when stress lasts for a long time, it can lead to burn-out (Compernolle, 2006).

Different studies analysed the effects of combining study and work on the academic performance of students (Humphrey, 2006; Callender, 2008; Robotham, 2012) and satisfaction (Tessema et al., 2014). Furthermore, research showed whether a part-time job impacts the level of stress of students, but to the best of the researcher's knowledge, the relation between the number of working hours and the level of stress of students is not examined yet. According to Coleman's (1961) zero-sum time-allocation model, time spent on working may lead to reduced time spent on studying, school activities and gathering with family members and friends. This could explain why the academic performance decreases when students work more hours in their part-time job, simply because they have less time to spend studying. Research of Opdecam & Everaert (2012) and Rau & Durand (2000) found a significant positive relationship between the time spent on studying and GPA or academic performance. It could be that having less time to spend on studying affects the level of stress of students when a student for example stresses about having less time to study and the consequences of having less time to study, missing classes or feeling exhausted due to work. Therefore, this research will examine what the relationship is between the number of working hours and the level of stress of students.

The relationship between the number of working hours and the level of stress of students is central in this study. Additionally, this study focuses on what role *support* can play. Previous research has particularly focused on the role of support in fulfilling two roles as in working and being part of a family (Talukder, Vickers, & Kahn, 2018; Lizano et al., 2014; Trottier & Bentein, 2019). Studies have, for example, shown that support can buffer the relationship between role-conflict and turnover intentions, and the relationship between work-family conflict and depression (Yunita & Kismono 2015; McTernan et al., 2016). However, this effect has not specifically been examined for students with a part-time job. Therefore, this study also examines if the support of different stakeholders, perceived by the students, buffers the relationship between the number of working hours and the level of stress of students. A distinction is made between different kinds of support, namely supervisor, co-workers, organization and academic peers (other students).

The aim of this research is thus to get more insight in if the number of working hours relates to the level of stress of the student and if the perceived support can buffer this relationship. This research tries to comply with this aim by answering the following research question: "To what extent is the number of working hours in a part-time job related to stress amongst students and to what extent can support from the supervisor, co-workers, organization and academic peers buffer this relationship?" This research question is answered by conducting a quantitative research among students in the Netherlands. By conducting this quantitative research, the results contribute to the literature about the effects of fulfilling two roles because of having a part-time job while studying. This means that it will be clear if working and studying not only affects the academic performance and level of stress of students, but also if the number of working hours relates to the level of stress of students. Besides, it contributes to the literature in a way that the buffer effect of support will be explored in the relation of the number of working hours and stress of students, instead of family members.

This research is socially relevant as the results can contribute to the knowledge for the solution of a social issue: reducing the increasing high level of student stress. As previously mentioned, the research of Schmidt and Simons (2013), on behalf of the national student union, concluded that 49% of the students have or have had psychological complaints and stress is one of the most reported complaints. Stress can cause serious psychological and physical consequences and it can reduce the academic performance and performance at work (Elias, Ping, & Abdullah, 2011; Ajayi, 2018). The number of students with a part-time job is increasing. Since a part-time job can be a cause of stress, the number of students with stress could increase. Measurements to prevent stress could be identified by analysing the relation between the number of working hours and the degree of stress of students.

If there is a relationship between the number of working hours and the level of stress, then it is important that students, counsellors, employers, academic advisors and the government are aware of this and that they know what stress can cause. Measurements that employers could take are for example: taking into account a maximum number of working hours when offering contracts to students, or discussing the number of working hours during a job interview. The government could possibly play a role by making sure that students get enough money so the working hours are minimalized and the students are still able to study and make ends meet. More importantly, if the support of different people buffers the relationship between the number of working hours and the stress level, support bidders could help students to have as little stress as possible. Besides, it is useful for students to know if the support of fellow students can weaken the relationship between the number of working hours and the degree of stress, so students can offer support to other

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students to reduce the level of stress. All of this could possibly help to decrease the level of stress of students and to reduce and prevent the negative effects of stress for students.

This report has six chapters. After the introduction in this chapter, chapter two presents a theoretical framework of the different concepts which are discussed above, the hypotheses are formulated and the conceptual framework is shown. In chapter three the research methodology to answer the research question is presented. Chapter four gives an overview of the results of the quantitative empirical research and this is followed by chapter five which gives an answer to the research question. Finally, the limitations of the research are indicated, possibilities for further research are given, the practical implications and recommendations are addressed and a reflection is presented in chapter six.

# 2. Theoretical Framework

In this chapter the theoretical framework is set out. Firstly, the definition and the consequences of stress are explained. Secondly, it explains the hypothesis of a relationship between the number of working hours and the level of stress. Thirdly, it discusses the role of support and it is divided into four different kinds of support. Lastly, the conceptual model is presented, which is based on the main concepts and their relationships.

#### 2.1 Stress

The word stress is often used in everyday life (Lazarus, DeLongis, Folkman, & Gruen, 1985). In the vernacular the word stress is often used to refer both to an external threat and to our physical and mental response to exposure it. However, psychologists make a distinction between the external pressure or event that causes stress and the inner influence which it has on individuals (Zimbardo, Johnson, & McCann, 2013). The external events of situations which cause stress are called 'stressors'. Stressors can be divided into traumatic stressors and chronical stressors. Traumatic stressors are for example natural disasters, manmade disasters, personal loss and post-traumatic stress. Chronical stressors are societal stressors, burn-out, important events and daily annoyances.

The physical and psychological changes which occur in response to the stressors are called 'stress' (Krantz, Grunberg, & Baum, 1985). A stressor can be, for example, when a supervisor asks to work extra while the student has an exam. The physical and psychological change, for example an accelerated heartbeat, dilated pupils or sweat on the student's forehead, is called stress: the response to the stressor. Stress can be distinguished from distress and eustress (Selye, 1987). Distress occurs when the body can no longer cope with the physiological and/or psychological demands. This can cause a decline in intellectual functions, resulting in a decrease in concentration and attention (Cornelis, 2015; Goh et al., 2015). In addition, stress can have physical consequences like muscle tension, stomach pain and fatigue. When the stress lasts for a long time, it can lead to burn-out (Compernolle, 2006). Eustress refers to the optimal level of stress, not too much and not too little. So stress can be negative (distress) and also positive (eustress).

In this study 'stress' means 'distress' and the stressors which students face are probably in particular of chronic nature. Schoemaker et al. (2019), working for the National Institute for Public Health and Environment, Trimbos-Institute and Amsterdam UMC, were commissioned by the Ministry of Health, Welfare and Sport to study young people's experiences of stress. They found that students are worried about problems in the world, but for the most part they are concerned about stressors of a chronic nature. For example the image of 'the perfect picture', not wanting to disappoint, performance is being rewarded, tensions and concerns at home, restlessness and agitation, lack of

real contact and feelings of social insecurity, and need for support. It could be that a student starts working to earn money and meet 'the perfect picture', or to establish connections. However, it could also be that a student is restless and agitated because he or she works many hours and also has to devote time to his or her studies in order to meet expectations and to be rewarded for good performance. According to Schoemaker et al. (2019) this could lead to student stress.

# 2.2 The number of working hours of a student with a part-time job

Students have a job next to their study for different reasons. Reasons could be earning money for covering basic essentials or related expenses (Callender, 2008; Robotham, 2012), relieving the financial burden of parents (Hall, 2010), improving the network with managers, employees, and customers (Curtis, 2007), gaining experience or practical skills (Oil & Morrison, 2005), and socializing and meeting people (Curtis, 2007). This job of the student next to his or her study for which he or she gets paid, is in this study called 'a part-time job'. It doesn't matter if the student works 40 hours or just two hours in this job. Having a job next to the study is seen as a part-time job as the student is working just a part of his or her available time in this job. The job of the student can be related to the study he or she is following, but the job can also relate to a completely different study direction. In this study a student is defined as someone who follows a fulltime study at University of Applied Sciences or University level.

A part-time job while following a fulltime study may lead to reduced time spent on studying, school activities and gathering with family members and friends. This is based on the zero-sum time-allocation model from Coleman (1961). Having less time to spend on a study may lead to negative effects. Examples of negative effects are missing classes, being late for classes or making less use of university facilities because of work. Greenhaus & Kopelman (1981) stated that when an employee needs to comply with work and nonwork demands (in this case education demands) the efforts can lead to strain if the demands are incompatible or too numerous. This complies with the role stress theory of Kahn et al. (1964), which states that the experience of ambiguity of different roles will result in undesirable states. This means when various actors hold different role expectations for the individual, this can impose expectations of conflicting behaviour.

One dimension of the role stress theory is 'role overload' and translated to fulfilling two roles in terms of a part-time job while studying this means that the student doesn't have enough time and resources to meet expectations of commitments and obligations to fulfil his or her work role and the student role (Latack, 1981). Greenhaus & Beutell (1985) suggested that role stress could be based on roles that affect time involvement, strain or behaviour in one domain (e.g. work) and that are incompatible with fulfilling roles in the other domain (e.g. student). *Time-based* work-student *conflict* 

arises if the amount of time spent in one domain (e.g. student) hampers meeting the requirement of the other domain (e.g. work). A *strain-based conflict* arises when it is difficult to fulfil the requirements in one role due to stressors in the other role. For example when a student is tired at work because he or she studied at night and did not get any sleep. The *behaviour conflict* is about behavioural difficulties because of switching between different roles. So when a student faces difficulties in dividing his or her available time for work and study, when he or she experiences strain by combining the student and work role and when it is difficult for him or her to switch the behaviour from the student role to the work role or vice versa, the student can be stressed.

Combining the roles of being a student and an employee, could lead to stress according to the role stress theory as the time spent in one role leads to difficulties in meeting the requirements in the other role. This would mean that working more hours, leads to reduced time to spend on studying and other commitments. This could lead to more difficulties by dealing with the demands from the roles which leads to stress. In Korea different studies have shown that, in general, working more hours leads to more stress (Yeogyeong, Jia, Hyunjoo, Chung & Kyunghee, 2018; Lee, Suh, Kim, & Park, 2017) and a Swedish study among social workers showed that reducing the number of working hours had a positive effect on stress (Barck-Holst, Nilsonne, Akerstedt, & Hellgren, 2017).

Research of Tessema et al. (2014) has shown that the satisfaction and the academic performance of students without a part-time job was higher than students with a part-time job. However, they also found that working a maximum of 10 hours per week has a positive effect on students' satisfaction and academic performance. This could be explained by the findings that a part-time job can ensure an additional dimension to the social life of the student (Curtis, 2007) and the practical skills and new knowledge that the student gains from the part-time job (Callender, 2008; King, 2006). However, Tessema et al. (2014) also concluded that working more than 11 hours a week, can cause a decline in their satisfaction and academic performance for each additional category of working hours. Salamonson & Andrew (2006) found that students without a part-time job had the highest scores in assessments, and scores decreased as the amount of time spent in part-time employment increased. Neil et al. (2004) stated that the academic performance would not be damaged and the benefits of a part-time job could be realized if students limited themselves to working a maximum of 15 hours per week.

Tessema et al. (2014), Salamonson & Andrew (2006) and Neil et al. (2004) studied the relationship between the number of working hours in a part-time job and the academic performance (and satisfaction) of students. All studies found that the number of working hours affected the academic performance (and satisfaction). Based on these studies, the zero-sum allocation-time model, the role

stress theory (time conflict) and the general finding that working more hours leads to stress, the following hypothesis is formulated:

Hypothesis 1: The number of working hours in a part-time job is positively related to the level of stress of students.

Since, to the best of the researcher's knowledge, there have been no previous studies testing the relationship between the number of working hours and the level of stress of students, this study does not establish a specific number of working hours as of when it is relevant.

## 2.3 Support

In the previous paragraph it was made clear that fulfilling two roles can lead to stress for the student. Yunita & Kismono (2015) studied the influence of work-family conflict and family-work conflict on employee's turnover intentions with social support as moderating effect. They found that social support, from the work and family domains, moderated the influence of a role-conflict (work and family) on employee's turnover intentions. Social support includes positive resources obtained from interpersonal relationships (Cohen & Wills, 1985), such as those from family, relatives, friends, managers, colleagues and professionals. According to Kim & Stoner (2008), social support in the workplace, like support received from a supervisor or support from the organization, can guarantee against the physical and psychological harm which is caused by workplace stressors. Gilligan & Huebner (2002) stated that an individual who readily perceived being socially supported in a relationship has a high level of psychological well-being and positive thinking. According to House (1981) social support is a powerful resource that equips individuals to cope with stress. Besides, Yeogyeong et al. (2018) stated that social support from managers and colleagues in the workplace can play an important role in relieving depressive symptoms. In their study, social support was the main explanatory factor of job stress related to working hours and depressive symptoms.

The Job-Demands-Resources-Support model states that social support refers to 'overall levels of helpful social interaction available on the job from both co-workers and supervisors' (Karasek, & Theorell, 1990, p.69). Therefore, a distinction is made between those two kinds of social support in this research: supervisor support and co-worker support. Besides, attention is paid to organizational and academic peer support as these two kinds of support also could play a role in reducing stress (Gubbels & Kappe, 2017; Malik & Noreen, 2015). There is also added a 'perception' dimension to the different kinds of support as the same social context can be perceived in different lights by individuals with different motives (Terhune, 1968).

#### Perceived Supervisor Support

Perceived supervisor support reflects employees perceptions that their supervisor values their contributions and cares about their well-being (Shanock & Eisenberger, 2006). Supervisors are in a unique position to influence employees' work-related stressors (Beehr, Farmer, Glazer, Gudanowski, & Nair, 2003) and they may for example provide work knowledge (Podsakoff, MacKenzie, Ahearne, & Bommer, 1995) and help to overcome job demands (Schaufeli & Bakker, 2004). Yang et al. (2015) found that supervisor support had a significant direct negative effect on job stress, which means when an employee perceived more supervisor support, he or she had less job stress. Talukder (2019) found in his study that supervisor support was negatively related to work-family conflict. The reason for this was that supervisors could signal their support by inquiring about employees' family needs or expressing concern and encouragement to employees who were strained by demands for resources between family and work (Bagger & Li, 2014). This is in line with the Conservation of Resources Theory (Hobfoll, 2002) which states that individuals can experience stress as they face depleting resources (e.g. time, energy) for allocation between work and family life. When supervisors care about employees' family needs, for example allowing employees to have flexible schedules or making provisions for child care on organizational premises, these employees can better manage their work commitments and family demands. According to Talukder et al. (2018) this would lead employees to have a more balanced life and fewer conflicts between work and family domains. Possibly, this also holds when combining a part-time job with education. In this case, the supervisor can help the employee (or student) to have a more balanced life and fewer conflicts between work and education by giving the employee the feeling that he or she cares about the employees' (or students') education needs. This could result in a better management of the work commitments and education demands and a decrease in the level of stress. Therefore, the following hypothesis is tested in this research:

Hypothesis 2a: The positive relationship between the number of working hours in a part-time job and the level of stress of students is weakened by the supervisor support that the students perceive.

It is expected that supervisor support moderates the impact of the number of working hours on the level of stress from students. Simply said, it is expected that the supervisor support influences the positive relationship between the number of working hours and the level of stress of students in a way that students have less stress when they perceive more supervisor support.

#### Perceived co-worker support

Perceived co-worker support is associated with increased job satisfaction and psychological wellbeing (Ducharme & Martin, 2000; McCann, Russo & Benjamin, 1997). Co-worker support can especially be beneficial as it was shown that support provided by similar others is the most effective social support in stressful circumstances (La Rocco, House, & French, 1980; Lively, 2008). Co-worker support is also found to be positively related with employee resilience (Cooke, Wang, & Bartram, 2019). McTernan et al. (2016) found that co-worker support buffered the reciprocal relationship between work-family conflict and depression, showing a protective effect. Co-worker support can be defined as 'the extent to which employees have confidence in their co-worker's willingness to assist them in carrying out work-related service-based duties to completion' (Susskind, Kacmar, & Borchgrevink, 2003). This includes the sharing of knowledge, providing encouragement, and supporting one another while helping one another in assigned tasks (Zhou & George, 2001). Coworkers can also provide simple support by sharing personal information and more emotionally intense forms of support like counselling in response to a co-worker's personal troubles (McGuire, 2007). Yang et al. (2015) found that co-worker support had a significant direct negative effect on job stress. According to Cho & Johanson (2008) employees who perceive greater co-worker support are likely to obtain access to more job resources that allow them to deal with work related stress, and Grandey & Gabriel (2015) found that a socially supportive context among co-workers can buffer strain by giving employees a chance to recover energy resources. It could be that this also holds when combining a part-time job with education. This means that when a student perceives a socially supportive context among co-workers, this would buffer the level of stress from combining study and a part-time job. Therefore, the next hypothesis is:

Hypothesis 2b: The positive relationship between the number of working hours in a part-time job and the level of stress of students is weakened by the co-worker support that they perceive.

So it is expected that the co-worker support that students with a part-time job perceive, buffers the positive relationship between the number of working hours and the level of stress of students in such a way that students have less stress when they perceive more co-worker support. In other words, the co-worker support buffers the level of stress in the relationship with the number of working hours.

#### Perceived organizational support

Perceived organizational support can be defined as 'employees' general belief that their work organization values their contributions and cares about their well-being' (Rhoades & Eisenberger, 2002, p. 68). Research has discussed organizational support as a resource capable of influencing

performance by neutralizing stressors (Rhoades & Eisenberger, 2002). Research by Stamper & Johlke (2003) has shown that high levels of perceived organizational support are associated with reduced strain. Duke, Goodman, Treadway, & Breland (2009) indicated that organizational support perceptions give a sense of value that buffers stress through emotional regulation. Besides, Malik & Noreen (2015) found in there study a significant negative relationship between occupational stress and perceived organizational support among teachers. So when the organization provided support to their employees, occupational stress decreased. The findings of Hwang (2019) indicate that perceptions of family-supportive organizational perceptions were a key factor for reducing parenting stress of employed mothers. The study of Ferguson, Carlson & Kacmar (2014) used 'organizational segmentation support'. This is defined as 'employee perceptions that the organization supports segmentation and provides employees with the ability to keep work matters at work'. In this sense, the organization could support the employee in order to avoid role stress conflict by keeping work matters at work. This could also be true for combining a part-time job with education. This means that when a student perceives organizational support and can keep work matters at work, this would buffer the level of stress that the student has from working a certain number of hours in a part-time job. Therefore, the following hypothesis will be tested:

Hypothesis 2c: The positive relationship between the number of working hours in a part-time job and the level of stress of students is weakened by the organizational support that they perceive.

So it is tested if the organizational support buffers the level of stress in the relationship with the number of working hours. Levinson (1965) made clear that employees view their supervisor's favourable or unfavourable orientation toward them as indicative of the organization's support, as supervisors act as agents of the organization. Therefore, the organizational support dimension is tested in terms of support which is received from the *overall managers* in the organization.

#### Academic peer support

The last hypothesis relates to the academic peer-support of students. Informal academic peer support, so support from other students, plays an integral role in students' academic support system at the collegiate level (Giddan, 1988). Research of Thompson (2008) indicates that college students tend to consider fellow students as their primary source of academic support. Gubbels & Kappe (2017) identified support from friends and fellow students of their course as possible resource to reduce stress and the results of the study of Ifdil & Bariyyah (2015) showed that peer-helping is effective to reduce students' academic stress collaboratively and individually. Academic peer support can consist of direct assistance with courses and emotional support which is specifically related to

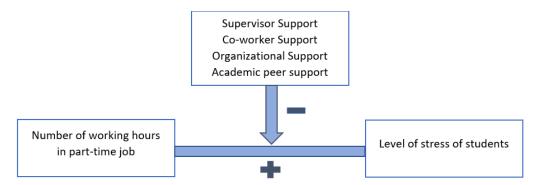
academic issues. Thompson & Mazer (2009) developed and advanced the Student Academic Support Scale (SASS) to assess academic support among students. They distinguished between informational support, esteem support, motivational support and venting support. When a student perceives high academic peer support in terms of informational support for example, it could be that the student does perceive less stress when he or she needs to work during a lecture because he or she can ask a peer for a summary of the lecture. Therefore, the following hypothesis is tested in this study:

Hypothesis 2d: The positive relationship between the number of working hours in a part-time job and the level of stress of students is weakened by the academic peer support that they perceive.

# 2.4 Conceptual Model

Based upon the theoretical framework and the formulated hypotheses, a conceptual model is developed. The conceptual model of this research is shown in Figure 1. It shows the expected relationship between the variables and these relationships have an indication (+/-) of how they are expected to be related.

Figure 1
Conceptual Model



# 3. Methodology

In this chapter the research methodology is explained. Firstly, the data collection and procedure is discussed. Secondly, the measurement models and the way of analysing is explained and thirdly the reliability & validity of the research is examined. Lastly, the research ethics are clarified.

## 3.1 Data collection and procedure

In the previous chapter a comprehensive theoretical framework is formulated. The theoretical framework is based on literature and previous empirical research. The subject has been studied before and based on the literature and the empirical studies, a particular expectation has been established. The expectation is translated in different hypotheses and as these hypotheses are tested in this research, this is a deductive research (Vennix, 2019). To test these hypotheses, a quantitative research method is used. A quantitative method is chosen as the aim of the research is describing and testing pre-established expectations and not to establish motives or interpretations (Baarda, 2014). This, incidentally, may be of interest in a future study.

When doing a quantitative research, conducting a questionnaire is a suitable research tool. By using a questionnaire data can be collected from a large population and it is respondent-friendly since the respondent can fill out the questionnaire when he or she wants to (Baarda, 2014). In addition, the use of a questionnaire can be completely anonymous which encourages open and honest responses, and the preparation-, administration- and processing time is relatively short. That is why a questionnaire is designed and conducted in this research to answer the research question. Besides, Mizen, Pole & Bolton (1999) argued that the use of a questionnaire is the most dominant research tool in the study of child and adolescent employment. This study focuses on students and it is likely that many of these students will be adolescents and employed. According to Mizen et al. it would therefore be appropriate to use a questionnaire. The students are the units of analysis and the units of observation, which means that the students are the ones from who the data is received and that the results say something about these students (Vennix, 2019). The questionnaire is included in Appendix 1.

Every full-time student who is studying in the Netherlands was allowed to fill out the questionnaire. The language of the questionnaire was Dutch and this means that it was difficult for students from abroad to fill out the questionnaire. However, there is specifically chosen for this because we wanted to motivate Dutch students to fill out the questionnaire and not let the language deter them. By doing this we hoped to achieve a higher response rate. Students from University of Applied Sciences and University level were included: Bachelor, Master, Pre-Master and Associate Degree level. The students could fill out the survey by a digital link and they were reached by the researchers' own

networks and via social media channels. If we would not receive enough completed questionnaires by this way, we had planned to reach students at the Radboud University Campus face to face and ask them to complete the questionnaire. However, we needed to take the Covid-19 measurements into account and we were not allowed to do this on campus. We also provided three vouchers from bol.com to motivate students to complete the questionnaire and to increase the response rate.

As the population is too large to be included in the study in its entirety, a sample was used (Vennix, 2019). The theoretical population consists of all the students in the Netherlands and the sample type that was used looks like a random sample. Every student was allowed to complete the questionnaire as long as the student was a full-time student, studies at a minimum University of Applied Sciences level and has a good enough command of the Dutch language to be able to answer the questions adequately. There were no strict selection criteria such as minimum or maximum age, the city where the student needed to study, or the study direction. For multiple regression, which is the main analysis method used in this research, a minimum sample size of 50 and preferably 100 observations is needed in most research situations (Hair, Black, Babin, & Anderson, 2014). Another way to determine the sample size is to multiply the number of variables by 10. That would mean that in this study there should be 60 observations as there are six main variables included in this study. According to the G-Power Tool a sample size of 74 was required when the alpha is .05, the effect size .15 and the power .95. Therefore, the aim was to have a minimum sample size of 74 and it was highly desirable if this number ran up to 100 observations. This aim is certainly achieved, as the final sample consists of 311 students.

The questionnaire that the students needed to fill out included more topics than the topics which are covered in this research. This is because this research is part of a larger study. This research focuses on the relationship between the number of working hours and the level of stress of students, and it examines what effect support has on this relationship. The other studies focus, for example, on academic performance, loans, kind of part-time job and time management skills of students. So the questionnaire contained many different concepts, but for this research the following parts are particularly important: the number of working hours, the level of stress of the student, the perceived supervisor support, perceived co-worker support, perceived organizational support and perceived academic peer support. Besides, there were asked some general questions. This means that the student was asked to tell how many years he/she has been studying, if the student is a male or female, if the student lives at home or lives on his/her own, what the current GPA is, and how many hours the student studies per week on average.

These questions were asked as it is important to be sure that the founded effect between the number of working hours and the degree of stress is 'real' and that it is not affected by another variable. It could for example be that the variable 'gender' affects the level of stress as in different studies it is found that women are more sensitive to stress and more likely to suffer from negative emotions and thoughts than men (Van Nieuwenhuizen & De Ridder, 1994). This is supported by the rumination theory, which also states that stress in women lasts longer and has a longer effect on the mood (Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Besides, in the study of Hamaideh (2018) it was found that the level of stress of female students is higher and the study of Schoemaker et al. (2019) found that women do have more often psychological complaints than men. It is also likely that the variable 'academic class' plays a role as it is founded that first-year students feel more stressed than not first-year students (Simhachalam et al., 2020; Shawi, Abdullateef, Khedher, Rejab, & Khaleel, 2018). If these variables eliminate much variance from the dependent variable – in this study stress – then these variables can be included as a covariate in the analysis. By doing this, it is possible to ensure that the main effects of the model explain as much variance as possible.

#### 3.2 Measures

In this paragraph it is explained how the different concepts were measured. The concepts were mainly measured by the use of existing measurement scales and some of them were slightly modified so they are suitable for this study. The measurement scales are described and examples of the items or all the items are appointed.

#### Number of working hours

For measuring the number of working hours, the respondent only needed to answer how many hours he or she works per week on average. This means that it is a variable on ratio level and therefore it is also possible to use it in a regression analysis. It was an open question, so the student could enter his or her number of working hours by him- or herself.

#### Level of stress

The level of stress is measured by four items from the Copenhagen Psychosocial Questionnaire (Pejtersen, Kristensen, Borg, & Bjorner, 2010). This questionnaire has been demonstrated among a large sample of participants from numerous occupations and countries (for example Nuebling & Hasselhorn, 2010; Thorsen & Bjorner, 2010; Useche, Montoro, Alonso, & Pastor, 2019). The four items are about how tense, irritable and stressed people are and if someone has problems with relaxing. An example of a question is: 'How often have you been irritable?'. The scale which is used is a five-point Likert scale, ranging from 1 (never), 2 (sometimes), 3 (regularly), 4 (often), to 5 (always). A higher score indicates a higher level of stress. The reliability analysis showed a Cronbach's Alpha of

.84 when all the items were included, which means that the measurement scale is reliable as the Cronbach's Alpha is higher than 0,70. Deleting the 'irritating' item, would result in a Cronbach's Alpha of .87. However, a Cronbach's Alpha of .84 is enough so this item was not deleted.

#### Perceived Supervisor support

The perceived supervisor support is measured by three items from Clark (2001), which are for example also used in the research of Talukder et al. (2018) where they measured supervisor support in relation to an employee's work-life balance. In this research, however, the items were slightly different. The item 'My supervisor understands my family needs' is for example adjusted to 'My supervisor understands my education needs'. The other two items were 'My supervisor listens when I talk about my education', and 'My supervisor acknowledges that I have obligations as a student'. The scale which is used is a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score indicates a greater degree of perceived supervisor support. Clark (2001), however, used a seven-point Likert scale, but as the measurement scales of the other variables have a five-point Likert scale, this has been adjusted to simplify the interpretation and the analysis. The reliability analysis showed a Cronbach's Alpha of .83 when all the items are included, which means that the measurement scale is reliable as the Cronbach's Alpha is higher than .70.

#### Perceived Co-worker support

Perceived co-worker support is measured by three items which are also used in earlier studies. For example in the study of Ganster, Fusilier & Mayes (1986) where the role of social support was investigated in the experience of stress at work, in a research of Sloan (2012) for studying the role of co-worker support in a service work environment and in the study of Ducharme & Martin (2000) where the buffering hypothesis of co-worker support was tested. The items were not adjusted and are: 'I feel that I can talk to my co-workers about personal difficulties', 'My co-workers do take a personal interest in me', and 'When things get tough, there are people at work that I can turn to for help'. The scale which is used is a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score indicates a greater degree of perceived co-worker support. The reliability analysis showed a Cronbach's Alpha of .79 when all the items are included, which means that the measurement scale is reliable as the Cronbach's Alpha is higher than .70. Deleting an item would not results in a higher Cronbach's Alpha, so all items were retained.

#### Perceived Organizational support

Perceived organizational support is measured by two items of Thompson et al. (1999). These items were also used in the study of Talukder et al. (2018) and in the study of Bagger & Li (2014). These two items were slightly adjusted in this research and this means that the two items are 'In general, the

managers in this organization are quite accommodating of educational and personal responsibilities' and 'In general, the managers in this organization encourage others to be sensitive to employee's education and personal concerns'. The items were changed in a way that 'family' is replaced by 'education' and instead of 'in general, managers in this business unit' and 'senior managers in this office' it was 'In general, the managers in this organization'. This decision was made because the students are working in different kinds of organizations and it is not sure that every organization has different business units or has made a clear distinction between different levels of management functions. The scale which is used is a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). A higher score indicates a greater degree of perceived organizational support. Here holds the same as for the measurement scale of perceived supervisor support: in the actual questionnaire a seven-point Likert scale was used, but for simplifying the analysis and interpretation this has been adjusted to a five-point Likert scale. The reliability analysis showed a Cronbach's Alpha of .73 when all the items are included. The scale consists of only two items, so it is not possible to delete an item. However, the Cronbach's Alpha is higher than .70 which means that the measurement scale is reliable.

#### Perceived Academic peer support

Perceived academic peer support is tested by using the Thompson & Mazer's (2009) 15-item SASS scale. The 15 items include different types of support, namely informational support (IS), esteem support (ES), motivational support (MS) and venting support (VS). This measurement model is tested and it showed close model fit. In order to achieve a response rate as high as possible, the questionnaire doesn't need to be too long and therefore not all the 15 items were included. Thompson & Mazer have included a list of Importance Ratings on the Student Academic Support Scale. The items that scored above the overall mean are included in the questionnaire, except one item as this one looks very similar to another item. The six items are all part of the types informational support and venting support and examples are 'Another student explained how to solve a specific problem' (IS) and 'Another student listened to me vent about frustrations with a class' (VS). The scale which is used is a five-point Likert scale ranging from 1 (not at all), 2 (once or twice a month), 3 (about once a week), 4 (several times a week) to 5 (about every day). This means that the participants (students) needed to indicate how often each type of support occurred over the last month by another student. A higher score indicates a greater degree of perceived academic peer support. The reliability analysis showed a Cronbach's Alpha of .89 when all the items are included, which means that the measurement scale is reliable.

# 3.3 Analysis

Firstly, the variables, measurement scales, value labels, missings and duplicate cases were checked and adjusted if necessary. Secondly, it was tested if there are differences between the directions of study by performing Chi<sup>2</sup> and Anova tests. Thirdly, it was tested if there were significant correlations between the relevant variables of this study. To be able to interpret the correlations with variables of nominal level, T-tests were performed. Pearson correlation and single regression analysis was performed for testing hypothesis 1. Hypotheses 2a, 2b, 2c and 2d consist of one dependent metric variable, one independent metric variable and one moderating variable. The moderating variables were expected to affect the relationship between the independent and the dependent variable in a way that they would weaken the effect. Multiple regression is the appropriate method of analysis when there is a single metric dependent variable presumed to be related to two or more metric independent variables and when moderating variables are included, using the Process Macro tool is the best analysing tool (Field, 2018). Therefore, to test these hypotheses, the data which is gathered by the questionnaire is analysed by the use of Process Macro via IBM SPSS.

#### 3.4 Reliability

To ensure that the results are free from random errors or measurement errors, some measurements were taken into account. For example, a confidence interval of 95% was chosen with an error rate of 5%. This means when another researcher will carry out the research again under the same circumstances, there is 95% certainty that the same results will be gathered (Hair et al., 2014). Another measurement which is taken into account, is that all the steps that are taken are reported and substantiated. Every choice is explained or is explainable. A research diary was made to write down every step which is taken. Besides, to test the reliability of the measurement scales and the internal consistency, reliability tests are conducted. This means that the Cronbach's alpha is examined for every measurement scale and if the Cronbach's alpha exceeds .70, the measurement scale is reliable (Hair et al., 2014). All the measurement scales that were used in this research are reliable and the output of these reliability tests can be found in Appendix 2.

In addition, to prevent random errors, enough basic information (like the research goal) is explained in the introduction of the questionnaire, the data was checked and the results are analysed using a statistical tool: SPSS. Besides, it is not possible that different researchers interpret the concepts different as there was just one researcher involved, and because the concepts are based on validated measurement scales. Lastly, it is tried to get a sample size as large as possible, so the sample represents the population as much as possible. The realized sample consists of 311 students in the Netherlands, while the estimated number of students in University of Applied Sciences and Academic

Education in the academic year 2019/2020 was over 770 thousand (CBS, 2020). This means that this sample represents just a small part of the total population and this makes it questionable if the results are representative for alle the students in the Netherlands. Besides, 42% of the respondents follow a study in the direction of Economics & Business, and 36% of the respondents follow a study in Nijmegen. This could be explained by the fact that the respondents are reached by the researchers' networks and all the researchers are studying the same Master Program in Nijmegen, which is an Economics & Business study.

There was no time and space to do a test-retest, parallel test or a replication of the research to test the reliability of this research.

# 3.5 Validity

As previous explained in this chapter, validated measurement scales are used to measure the different concepts. By the use of these validated measurement scales, which are used multiple times over the years and have been assessed for their internal validity, it can be better ensured that the concepts that we want to measure, are also measured. For every measurement scale a reliability test was conducted and these tests showed that all the concepts are reliable. This shows that the used concepts are valid. If the results are external valid is questionable. As already explained, students studying in Nijmegen and students from Economics & Business got in particular the chance to fill out the questionnaire, therefore it is questionable if the results hold for all the students in the Netherlands. Besides, it is questionable whether the results are representative of everyday practice. Cross-sectional research was used and not longitudinal research. This means that differences over time were not taken into account and therefore it could be that the current Covid-19 situation has affected the results. Additionally, a number of variables related to students' level of stress were controlled for in the regression analyses to ensure the discriminant validity. However, it is possible that the results are affected by external factors that have not been taken into account.

Overall, it can be concluded that the study is valid. Systematic errors have been limited as much as possible and a research method has been used that is well considered and explained. However, the results are not the result of an intentional change of manipulation and it would have been even better if triangulation had been used.

#### 3.6 Research Ethics

To overcome ethical dilemmas during the research process, some measurements were taken into account. These measurements were based on the APA's Ethics Code (American Psychological Association, 2017) and the five principles for research ethics from Deborah Smith (2003).

Firstly, some measurements were taken by mentioning certain information in the introduction of the questionnaire. It is made clear that every respondent who fills in the questionnaire is participating in this study on an entirely voluntary basis. Koocher (in Smith, 2003) states that 'the person must have all the information that might reasonably influence their willingness to participate in a form that they can understand and comprehend'. Therefore, in the introduction of the questionnaire it is made clear what the purpose of the research is, what the expected durations and procedures are, what the incentive is for participating, who the participant can contact in case of questions, the limits of confidentiality and the right of the participant to decline to participate and to withdraw from the research once it has started, as well as the anticipated consequences of doing so. There are no potential risks, discomfort or adverse effects so these kind of foreseeable factors which may influence the willingness to participate are not mentioned in the introduction. Besides, all participants had to agree to participate in the study. Without consent, it was not possible to view and answer the questions and to participate in the study.

Secondly, work or data of someone else is not presented as our own. So data that have been previously published is in this study not published as original data, but it is used by mentioning the correct reference source. Thirdly, the data from this research remains the property of the Nijmegen School of Management and this is in line with the code of conduct of the American Psychological Association (2017). The researcher has signed a form for this.

Fourthly, the respondents had the option of completing the questionnaire completely anonymously. However, the respondents could choose to leave their email address when they wanted to be informed about the results or if they wanted to win a voucher. This means that the respondent would leave personal and identifiable information in this way. However, in the questionnaire it was indicated that when the data would be processed, the email addresses would be removed so it would not be possible to trace the answers back to a particular respondent. Therefore, this was the first thing accomplished when the results were processed. This also means that there is no confidential, personally identifiable information disclosed concerning the respondents. The email addresses of the respondents who wanted to be notified of the results and/or have a chance to win a voucher were kept separate from the dataset. When the research is fully completed, all these respondents will receive an email via the 'BBC' function with the results, the names of the winners and further information.

Lastly, since the results say something about students with a part-time job and I myself, the researcher, am a student with a part-time job, I needed to be careful not to get too personally involved and not to influence the results. Although I have a certain opinion about the topics and the

The relation between number of working hours and students' level of stress, and the role of support

research question, I have not been able to influence the results since quantitative research has been used. The conclusion is based on statistical analyses and can be verified by any researcher. In addition, I didn't have any contact with the respondents so I could not influence their responses and thoughts.

# 4. Results

*In this chapter the results of the questionnaire are presented.* 

Firstly, the variables, measurement scales, value labels, missings and duplicate cases were checked and adjusted if necessary. After this, there were 311 valid cases remaining. Table 1 shows the descriptive statistics of the respondents divided into different study directions. To test whether there are significant differences between these study directions, Chi² and Anova tests were performed. 42% of the respondents follow a study in the direction of Economics & Business, 16% in the direction of Behavior & Society, Parenting & Education, 14% in the direction of Health, 10% in the direction of Nature & Environment, Exact & Informatica, Engineering and Interdisciplinary, 7% in the direction of Law & Governance, and 11% in the direction of Language & Communication and Art & Culture. The sample will be described and it will be addressed if there are differences between these study directions. Only the extreme cases will be appointed.

**Table 1**Distribution of the Nominal level variables among the directions of study

	1	2	3	4	5	6	Total	Pearson	Sign.
	N=131	N=51	N=42	N=30	N=23	N=34	N=311	Chi <sup>2</sup>	
Female %	61,8	68,6	76,2	43,3	87,0	88,2	67,8	22,12	0,00
Living at home %	47,3	37,3	47,6	26,7	13,0	61,8	42,8	18,64	0,00
Student loan (yes) %	51,1	51,0	64,3	73,3	65,2	47,1	55,6	8,47	0,13
Part-time job (yes) %	79,4	78,4	85,7	70,0	78,3	82,4	79,4	2,88	0,72
Study related job	36,5	40	50	23,8	38,9	32,1	37,7	4,58	0,47
(yes) %	(N=104)	(N=40)	(N=36)	(N=21)	(N=18)	(N=28)	(N=274)		
Hbo bachelor %	44,3	0,3	50,0	30,0	8,7	38,2	38,6	32,81	0,14
Wo bachelor %	19,1	19,6	14,3	20,0	30,4	14,7	19,0		
Wo master %	33,6	35,3	35,7	50,0	60,9	38,2	38,3		

Note: 1 = Economy & Business, 2 = Behaviour & Society, Parenting & Education, 3= Health

In Table 1 it is visible that there are 68% female respondents and that there are differences between the study directions ( $Chi^2 = 22,119$ , p<.01). Of the Nature & Environment, Exact & Informatica, Engineering and Interdisciplinary students 43% is female, while 87% of the Law & Governance students and 88% of the Language & Communication, Art & Culture students is female. There are differences for the living situation of the students ( $Chi^2 = 18,643$ , p<.01), 43% of all the students live at home, while 13% of the students of Law & Governance live at home and 62% of the students of Language & Communication and Art & Culture live at home. So among the Law & Governance students, there are many more students who live on their own.

<sup>4 =</sup> Nature & Environment, Exact & Info, Engineering and Interdisciplinary, 5 = Law & Governance

<sup>6 =</sup> Language & Communication, Art & Culture

Of all the students, 56% have a student loan from DUO, 79% have a part-time job next to their study and 38% of these students with a part-time job have a job which is related to their study. There are no differences between study directions. 39% of the students follow a Bachelor at University of Applied Sciences, 19% study a Bachelor study at University and 38% of the students follow a Master at University. The other 4% of the respondents follow an Associate Degree, Master at University of Applied Sciences or a Pre-Master. There are no differences in study level between study directions. Most students study in Nijmegen. 12% of all students study at 'Hogeschool van Arnhem & Nijmegen' and 25% study at 'Radboud Universiteit Nijmegen'.

Table 2 shows the means of the relevant interval and ratio level variables divided into the study directions. To test whether there are significant differences between these groups, Anova tests were performed. The average age of the students is 22. The students receive on average € 134 per month from their parents, € 299 from DUO and € 561 from their part-time job. The average number of the total study years that students have been studying is 3,9 years. There are no differences between the study directions.

The average total student loan is € 11.691 and differs between the study directions (F= 2,307, p<.05). Nature & Environment, Exact & Informatica, Engineering and Interdisciplinary students report an average of € 18.122, while the Language & Communication, Art & Culture students report an average total student loan of € 8.141. The Nature & Environment, Exact & Informatica, Engineering and Interdisciplinary students spend more time to their study than the other students (F= 3,054, p<.05). The average number of study hours is 26 per week, while these students report 33 study hours per week. The average number of contact hours is 10 per week and differs also significantly between the study directions (F= 3,923, p<.01). Health students report namely 17 study hours per week.

The average number of working hours for the students who do have a part-time job is 12 hours per week. The average GPA of all the students is 7,2 and the average level of stress is 2,7. This stress level is measured on a 5 Point Likert Scale and means an intermediate level of stress: not little, but not much either. The average degree of perceived supervisor support is 3,7, for the perceived co-worker support this is 3,6 and the average perceived organizational support is 3,4. The average perceived academic peer support is 2,5. This means that the average student perceives most support from the supervisor and the least support from the academic peers, calculated with and without students who do not have a part-time job. There are no differences between the study directions.

In essence there are no differences between the study directions. Only the average total student loan, number of contact hours, the number of study hours, and the proportion of female students and students living at home differ between the study directions. Nonetheless, these differences are

not taken into account in the further analyses since the focus of this research is not on the differences between studies.

**Table 2**The means of the Interval and Ratio level variables for each direction of study

	1	2	3	4	5	6	Total	F-	Cian
	N=131	N=51	N=42	N=30	N=23	N=34	N=311	Value	Sign.
Age	22,3	22,8	22,3	22,6	22,3	22,5	22,4	0,49	0,78
Study Years	3,9	4,0	3,7	4,2	3,9	3,8	3,9	0,59	0,71
Income from parents	€123	€157	€124	€149	€143	€135	€134	0,35	0,88
Income student loan	€275	€295	€371	€388	€328	€204	€299	1,33	0,25
Total student loan	€10.350	€10.018	€15.442	€18.122	€13.050	€8.141	€11.691	2,31	0,04
Income job*	€634	€572	€414	€495	€621	€474	€561	2,06	0,07
Number of contact hours	9,2	9,5	17,4	9,2	7,3	10,6	10,4	3,92	0,00
Number of study hours	26,8	22,4	27,4	33,1	26,4	23,6	26,4	3,05	0,01
Number of working hours*	13,1	11,4	10,1	10,1	13,4	12	12	1,66	0,15
GPA	7,3	7,2	7,1	7,3	7,2	7,3	7,2	0,78	0,57
Stress	2,7	2,8	2,5	2,9	2,8	2,7	2,7	0,83	0,53
Supervisor support*	3,7	3,9	3,7	3,6	3,7	3,8	3,7	0,90	0,48
Co-worker support*	3,6	3,6	3,6	3,7	3,8	3,6	3,6	0,26	0,93
Organizational support*	3,4	3,3	3,2	3,3	3,5	3,4	3,4	0,69	0,63
Academic peer support	2,4	2,4	2,4	2,3	2,6	2,6	2,5	0,77	0,57
Academic peer support*	2,4	2,5	2,4	2,5	2,7	2,6	2,5	0,36	0,87

Note: 1 = Economy & Business, 2 = Behaviour & Society, Parenting & Education, 3= Health

Table 3 shows the correlations of the relevant variables of this study. When the box is 'green', the variables correlate significantly with each other. The correlation between organizational support and stress is negative (r= -.19, p<.01), which means that when the student perceives more organizational support, the level of stress will be lower and vice versa. The correlation between supervisor support and the number of study years is positive (r= .17, p<.01): when the student perceives more supervisor support, the student has been studying for more years. The correlation between the number of working hours and co-worker support is also positive (r= .13, p<.05) and implies when the student works more hours, the student will also perceive more co-worker support. There is also a positive correlation between supervisor support and co-worker support (r= .31, p<.01), so a student will perceive more support from the manager when he/she perceives more co-worker support, and the positive correlation between supervisor support and organizational support (r= .49, p<.01) implies that a student will perceive more supervisor support when he/she perceives more support from the organization he/she is working for. A positive correlation exists between co-worker support

<sup>4 =</sup> Nature & Environment, Exact & Info, Engineering and Interdisciplinary, 5 = Law & Governance

<sup>6 =</sup> Language & Communication, Art & Culture

<sup>\* =</sup> Total N =  $247 \rightarrow$  students without part-time job are excluded. Study category 1 N = 104, 2 N = 40, 3 N = 36, 4 N = 21, 5 N = 18, 6 N = 28

and organizational support (r= .35, p<.01), so when a student perceives more support from his/her colleagues, the student also perceives more support from the organization.

Between the number of study hours and stress there is a positive correlation (r=.26, p<.01): students do have more stress when they study more hours. A negative correlation exists between the number of study hours and the number of working hours (r=-.18, p<.01). So when the student works more hours, the student spends less time on his/her study and vice versa. A negative relationship exists between the number of study hours and organizational support (r=-.13, p<.05). Which implies that students with more study hours do perceive less organizational support and vice versa. Lastly, there is found a positive relationship between the number of study hours and the average GPA (r=.16, p<.01), which implies that students who study more hours do have a higher GPA.

**Table 3**Pearson Correlations of the Relevant variables, n = 311

	1	2	3	4	5	6	7	8	9	10	11
1.Stress		.32**	.150 <sup>*</sup>	0,08	-0,01	-0,10	-0,09	19**	-0,04	.26**	0,06
2.Gender			.14*	-0,06	-0,00	.14*	-0,04	0,00	.12*	0,1	.13*
3.Living situation				.22**	0,10	0,04	-0,08	-0,02	0,00	-0,02	-0,01
4.Study years total					0,02	.17**	0,10	0,00	-0,11	0,1	0,02
5.Number of working hours (*)						-0,03	.13*	0,11	-0,10	18**	-0,12
6.Supervisor Support (*)							.31**	.49**	0,12	0,03	0,01
7.Coworker support (*)								.35**	0,03	-0,04	-0,05
8.Organizational support (*)									-0,01	13*	-0,11
9.Peer support										0,08	-0,04
10.Number of study hours											.16**
11. GPA											

11. GPA

Note: \*\* Correlation is significant at the 0.01 level (2-tailed)

Besides these significant correlations there are also some variables that correlate with each other, but these correlations need to be interpreted in a different way since at least one of these correlating variables has a nominal level. In order to interpret this better, independent sample T-tests

<sup>\*</sup> Correlation is significant at the 0.05 level (2-tailed)

<sup>(\*)</sup> N= 247

were performed for the significant correlations. The T-test showed that the level of stress differs significantly for women and men (t=-5,919, p<.01): the average stress level for women is 2,9 and for men 2,4. The level of stress differs also for students who live at home and students who live away from home (t=-2,670, >.01). Students who live at home with their parents have an average stress level of 2,6 and students who live on their own have an average stress level of 2,8. The number of years that students have been studying differs for students who live at home and live away from home (t=-3,755, p<.01). Students who live at home have been studying for 3,6 years and students who live away from home have been studying for an average of 4,1 years. This does not mean that students who live at home study for only 3,6 years, but they have been studying for 3,6 years.

The degree of perceived supervisor and academic peer support differs for women and men (respectively: t=-2,276, p<.05; t=-2,080, p<.05). The average degree of perceived supervisor support is for women 3,8 and for men 3,6. The average degree of academic peer support is for women 2,5 and for men 2,3. T-test for gender and living situation shows that more male than female students live at home (t=-2,501, p>.05). Lastly, the average GPA, Grade Point Average, is for women higher (7,3) than for men (7,1) (t=-2,382, p<.05).

Hypothesis 1 is 'The number of working hours in a part-time job is positively related to the level of stress of students.' There is no correlation between the number of working hours and stress (Table 3) and a Simple Regression Analysis also showed no significant relationship between these variable (Table 4). This means that Hypothesis 1 of this study is not supported. Besides, there is no difference in the level of stress between students with or without a part-time job (t=-1,014, p>.05).

**Table 4** *Results Simple Regression Analysis Number of Working Hours and Stress* 

Model	Unstandardized B	Coefficients	Standardized	t	Sig.	
		Std. Error	Coefficients			
			Beta			
(Constant)	.962	.064		15.145	.000	
Number of	002	.018	008	133	.895	
working hours						
a. Dependent variable: Stress						

It was expected that different forms of support (support from the supervisor, co-workers, organization and academic peers) would weaken the positive relationship between the number of working hours and stress (hypotheses 2a, 2b, 2c and 2d). Even though there is no correlation and no linear relationship between these variables, multiple regression analyses were performed by the use of Process to test whether the different kinds of support do have an influence. The multiple regression analysis with the number of working hours as independent variable, stress as dependent

variable, supervisor support as moderator and gender, living situation, organizational support and the number of study hours as covariates was significant (F=7,472, p<0,00) (Table 5) and showed a significant interaction effect (b=.016, t=2,075, p>.05) and significant effects of gender and the number of study hours on the level of stress (respectively: b=.39, p<.01; b=.013, p<.01) (Table 6).

This interaction effect means that the relation between the number of working hours and the level of stress differs for the degree of perceived supervisor support. The analysis shows that students with a score of 1,07 or 1,26 higher than the mean of supervisor support, which is 3,74, have more stress when they work more hours (Table 7). So this holds for students who have a score of 4,81 or 5 on perceived supervisor support. When someone has a score on perceived supervisor support which is lower than 4,81, the effect of the number of working hours on the level of stress is not significant. The effect for students who have a score of 4,81 on supervisor support is less strong than for students who have a score of 5 on supervisor support. This means that supervisor support does not buffer the effect of the number of working hours on stress, because the higher the level of supervisor support, the higher the level of stress. Therefore hypothesis 2a is not supported by the results of this research.

**Table 5** *Model Summary Multiple Regression with supervisor support as moderator* 

R	R2	F	df1	df2	р
0,424	0,180	7,472	7	239	0,000

Y = stress X = Number of working hours W = supervisor support Covariates: Gender, Living situation, study hours, organisational support

**Table 6** *Model overview* 

	Coefficient	SE	t	р
Constant	1,851	0,335	5,388	0,000
Number of working hours	0,006	0,007	0,927	0,355
Supervisor support	-0,109	0,071	-1,545	0,124
Interaction	0,016	0,008	2,075	0,039
Gender	0,390	0,096	4,064	0,000
Living situation	0,131	0,089	1,476	0,141
Number of study hours	0,013	0,004	3,734	0,000
Organizational Support	-0,092	0,069	-1,336	0,183

**Table 7** *Conditional effect of focal predictor at values of the moderator* 

Supervisor support	Effect	se	t	р
1,0605	0,023	0,012	1,967	0,050
1,0713	0,023	0,012	1,970	0,050
1,2605	0,026	0,013	2,015	0,045

The multiple regression analysis with perceived co-worker support as moderator only shows significant effects for gender, the number of study hours and organizational support on stress (respectively: b= .375, p<.01; b=.012, p<.01; b= -.149; p<.05). The multiple regression analysis with perceived organizational support as moderator shows a significant effect of organizational support on stress (b= -.158, p<.01), and gender and the number of study hours do also have a significant effect on the level of stress (respectively: b=.373, r=<.01; b=.011, p<.01). The significant negative effect of organizational support on stress means that a student has more stress when he/she perceives less organizational support, when the score on the number of working hours is averaged. The multiple regression analysis with academic peer support as moderator shows that peer support, gender, the number of study hours and organizational support do have a significant positive effect on the level of stress (respectively: b= -113, p<.05; b= .397, p<.01; b= .013, p<.01; b= -.161, p<.01), but there is no significant interaction effect. The significant negative effect of academic peer support on the level of stress means that a student has more stress when he/she perceives less academic peer support, when the score on the number of working hours is averaged. These results show that there are no significant interaction effects for the number of working hours and co-worker, organizational and academic peer support on the level of stress. Therefore, hypotheses 2b, 2c and 2d are not supported.

# 5. Conclusion & Discussion

In this chapter an answer to the research question is given and the findings are compared with previous conducted studies and literature.

This paper set out to examine the relationship between the number of working hours in a part-time job and the level of stress of students, and to investigate if support from different people could buffer (or weaken) the level of stress. Correspondingly, the research question of this study is "To what extent is the number of working hours in a part-time job related to stress amongst students and to what extent can support from the supervisor, co-workers, organization and academic peers buffer this relationship?" The findings from the questionnaire indicate that there is no relationship between the number of working hours in a part-time job and the level of stress amongst students. There is no linear and no causal relationship found. So the number of working hours is not related to the level of stress of students and both factors are independent of each other.

Even though there is no linear and no causal relationship between the number of working hours and the level of stress, it was tested if supervisor, co-worker, organizational and academic peer support do correlate with or affect the level of stress of students and if the level of stress in relation to the number of working hours differs for the degree of perceived support. Only a significant interaction effect exists for the perceived supervisor support and the number of working hours on the level of stress. The effect is very small and indicates that when a student has a high score on perceived supervisor support, he or she has more stress when he or she works more hours. There is a significant interaction effect, but this effect is not in accordance with wat was expected as this interaction effect doesn't show that the supervisor support buffers the level of stress, but this interaction effect shows that the level of stress is higher when a student perceives more supervisor support. This is contradictory to what was expected and there is no clear explanation for this.

The analyses with the other kinds of support didn't show any interaction effect. They only showed that organizational support and academic peer support do have a main significant negative effect. This implies that when someone perceives a high degree of organizational support, the students has less stress and vice versa, and when a student perceives a high degree of academic peer support, he or she will experience less stress and vice versa. Besides, a significant negative correlation was found between organizational support and the level of stress. For supervisor support, co-worker support and academic peer support there was no significant correlation with the level of stress.

As there was no relationship between the number of working hours and the level of stress, the findings that different kinds of support do not buffer the relationship between the number of working hours and the level of stress was not unexpected. Nevertheless, the overall finding that

there is no relationship between the number of working hours and the level of stress is unexpected when taking into account the zero-sum time-allocation model, the role stress theory, the findings of Tessema et al. (2014) and Salamonson & Andrew (2006) who found that the number of working hours affects the academic performance and when taking into account the general finding that working more hours leads to stress (Yeogyeong, Jia, Hyunjoo, Chung & Kyunghee, 2018; Lee, Suh, Kim, & Park, 2017; Barck-Holst, Nilsonne, Akerstedt, & Hellgren, 2017). Besides, the findings that supervisor, co-worker and academic peer support do not correlate with the level of stress are unexpected when taking into account the results of all the previous conducted studies about the role of support. For example the study of Yang et al. (2015) who found that supervisor support and co-worker support had a significant direct negative effect on job stress, the study of Grandey & Gabriel (2015) who found that a socially supportive context among co-workers can buffer strain by giving employees a chance to recover energy resources, and the study of Gubbels & Kappe (2017) who found that support from fellow students of their course were resources to reduce stress.

Even though the hypotheses are not supported, some other interesting findings have emerged. Female students reported more stress than male students and this is in line with the literature (Nolen-Hoeksema et al., 2008; Hamaideh, 2018; Schoemaker et al., 2019). Besides, students who live at home have less stress than students who live out of home. A positive relationship was also found between the number of study hours and the level of stress. So when students *study* more hours they have more stress, but when they *work* more hours they do not have more or less stress. Moreover, no difference was found between the degree of stress for students with or without a part-time job and a part-time job doesn't relate to the level of stress. Therefore the findings of this research do not correspond with the findings of Robotham (2012) and Bergmann et al. (2019) who found that a part-time job leads to stress for students. This also means that the increasing number of students with a part-time job directly leads to more students with stress. Another finding is that the number of years that students have been studying does not relate to the level of stress and this also doesn't correspond with the findings of Simhachalam et al. (2020) and Shawi et al. (2018).

The results regarding the different types of support showed that female students perceive more supervisor and academic peer support than male students, that students who have been studying for more years perceive more supervisor support and that students who work more hours do perceive more co-worker support. The perceived supervisor support, co-worker support and organizational support relate with each other, academic peer support doesn't. Besides, it is found that when students perceive more organizational support, they study less hours. These findings do not specifically correspond to certain literature, but do indicate that support can play different roles. In addition, it could be the basis for further research. It could for example be examined why students

who work more hours do perceive more co-worker support. Is this because these students know their co-workers better because they work more hours? Or is this because students with more working hours need and demand more support?

The level of stress does not differ for students of different study directions, but there were found some other interesting differences between the study directions. Students studying in the direction of Exact sciences (like Nature & Environment) do have the highest student loan, but they also live more often than on average on their own. Living on your own cost probably more money than living at home, so this could explain the higher student loan. Students studying in the direction of Language and Culture do have the lowest student loan and they live most often at home, which could explain the low student loan. Students in the direction of Exact sciences are also found to study the most hours and students of Health do have the most contact hours. This could have resulted in working fewer hours, however no differences were found in the number of hours worked between the different fields of study. This also means that the finding that students from Health have more contact hours and have a higher student loan than on average is not because they work less hours.

The zero-sum time-allocation model (Coleman, 1961) states that time spent on working may lead to reduced time spent on studying. This research showed that students who work more hours, do study less hours. These findings therefore reflect the zero-sum time-allocation model. Besides, students who study more hours were found to have a higher GPA (Grade Point Average). This is also in agreement with research of Opdecam & Everaert (2012) and Rau & Durand (2000). In addition, it is found that female students do have a higher GPA than male students and this is also in agreement with research of for example Parajuli & Thapa (2017) and Ayala & Manzano (2018). Lastly, it is found that female students live more often on their own than male students and students are more likely to live on their own the more years they have been studying.

In conclusion, the hypotheses of this research were not supported. However, most other findings are consistent with the literature and previously conducted empirical studies. A number of results emerged which can be examined more thoroughly in future research. In addition to these recommendations for future research, the next chapter goes into more detail about further research possibilities. Also, the limitations of this research, practical implications, recommendations and a short reflection is given.

# 6. Limitations, Further research, Practical Implications, Recommendations & Reflection

### 6.1 Limitations

The research has some limitations. Firstly, the reader should bear in mind that the results are based on a cross-sectional research design. This means that the data is collected at one point in time and that differences in time are not taken into account. Besides, this makes it difficult to interpret causality and to explain the cause and effect of the variables examined. The data is gathered at one moment in time and this also means that the results could be affected by the current Covid-19 pandemic. The Covid-19 situation may have led to students becoming unemployed, which may lead to less stress because they do not have to combine work and study, or it may lead to more stress because they are in financial difficulties (Kences, Kenniscentrum Studentenhuisvesting, 2020; NU.nl, 2020a). Covid-19 may also have resulted in students' social lives being restricted, causing them to feel less social pressure, or they may feel lonely, which in turn may affect their level of stress (Brink, Broek, Ramakers, 2021; NU.nl; 2020b). Covid-19 may also have affected the students' level of stress by reducing their travel time and leaving them with more time for other commitments, or by their difficulty in coping with studying at a distance. In short, the study was conducted at one point in time and therefore Covid-19 and possibly other momentary circumstances may have influenced the results in different ways. Therefore, if this study will be conducted again next year, in the same way, it may lead to different results.

Another limitation of this research concerns the sample. The respondents were enlisted through the researchers' own networks and there was no random sampling. The researchers all study in Nijmegen and they all follow the same Master study, namely Strategic Human Resource Leadership. This may have led to the fact that 36% of the respondents study in Nijmegen and 42% follow a study in the direction of Economics and Business. Besides, the sample consists of 311 students, while in the academic year 2019/2020 there were more than 770 thousand students in the Netherlands (CBS, 2020). This means that the sample size is limited and the results of this research are not representative for all students in the Netherlands and cannot be generalized.

The hypotheses of this research were formulated on the bases of previously conducted studies and literature. However, some of these studies were conducted in countries outside the Netherlands and Europe. This may have caused the hypotheses not to be confirmed, as the culture in these countries may be different from the culture in the Netherlands. Therefore the results of these studies do not have to correspond to the reality in the Netherlands. The literature review was followed by conducting a quantitative research. This means that only statistical data is available. The underlying

thoughts, motives and explanations have not been revealed, which is another limitation of this study as this could have explained why the results are as they were found. Nevertheless, this was not the goal of this study either. In addition, the answers of the students were based on perceptions and were not based on facts. This means that one student can perceive something in a different way than the other student and therefore the meaning of the average degree of support could be discussed. Because no interviews were conducted, students did not have the opportunity to explain their answers and to explain on what they base their answers.

The absence of a relationship between the number of working hours and the degree of stress could besides be explained by the used stress scale. Even though the reliability test showed that the scale is reliable, it could be that the items were rather abstract as there was no explanation. It could also be that the students' answers were based on a particular time fragment as the study is not a longitudinal study. Additionally, the students were asked how many hours per week they spend on their studies. This question was, however, not explained and can be interpreted in different ways. Students may have indicated the number of study hours including their contact hours, while other students may have indicated only the hours spent on assignments and reading. Lastly, measuring the study performance was difficult. In this research the study performance has been measured by asking what the student's average grade is at the moment. However, it would have been better if this had been based on objective data like data from the Student Administration of the Universities.

## 6.2 Further Research

In the previous chapter some recommendations for future research have already been made and in the previous section, a number of limitations of this research have been highlighted. As a result of these limitations and the results of this research and the literature review, some more suggestions for future research are given in this section. Firstly, it is recommended to conduct a longitudinal research in order to prevent time-based results and momentary circumstances like the Covid-19 pandemic, and to be able to examine whether there are causal relationships. Secondly, it is recommended that this study will be followed up with a qualitative component to examine motives, underlying thoughts and explanations. It is for example found that students who live out of home do have more stress than students who live at home. By conducting interviews, it could be explored why students who live on their own do have more stress. Is this because they have a more extensive social life? Or is it because they have higher costs, and therefore have a higher student debt, which in turn causes them stress? These are examples of questions which could be explored by the use of a qualitative research and this would enrich the results of this research.

Another recommendation for further research is to pay attention to different kinds of support. In this research the sources of support were examined – so support from the supervisor, co-workers, organization and academic peers – but no consideration has been given to what kind of support these sources provide. Do they provide emotional, informational or instrumental support? By paying attention to these different kinds of support and by distinguishing between them, it would make clear whether certain types do help to reduce the level of stress of students. Maybe the stress level of students will decrease when they perceive instrumental support from their co-workers, but not when they perceive informational support.

This research examined whether support plays a role in reducing the level of stress when someone has to combine study and work. However, support is one component of the Job Demands-Resources-Support (JDRS) model. This research showed that organizational support and academic peer support are related to the level of stress of students. The number of working hours, supervisor support and co-worker support do not relate to the level of stress and supervisor support, co-worker support, organizational support and academic peer support do not buffer the amount of stress. Nevertheless, it could be that certain job demands or job resources could play a role in buffering the level of stress when combining study and work. Therefore, it is recommended to include the other components of the JDRS model in a future study. In addition, a future research could pay attention to what kind of role the social life of a student can play when combining study with work. Do students who are member of a student union and a sports club have more stress than students who only work and study? Or does this social life actually give them energy? These are example questions for a future study.

An alternative option for a further research would be to include the student's GPA and to see if this has a mediating role. For instance, it could be that students who work more hours have worse academic performance and therefore experience more stress because they are worried about the progress of their studies. Besides, a relation between the number of study hours and stress is found, while there is no relationship found between the number of working hours and stress. It could be analysed why this difference exists. Lastly, an option would be to examine whether time-management skills of students do have a moderating role. This would mean that students with good time-management skills have less stress when they work a certain amount of hours, than students with poor time-management skills.

## **6.3 Practical Implications**

This study showed that a part-time job does not contribute to the level of stress. In this respect, the government or companies do not necessarily need to take measures to reduce the number of

students with a part-time job in order to reduce stress among students. Besides, the number of working hours plays no role in the level of stress, so the measures mentioned in the introduction do not have to be taken. This means that employers do not need to take into account a maximum number of working hours when offering a contract to a student, and the government does not need to give the students more money so the working hours can be minimalized and the students are still able to study and make ends meet.

However, it is advisable for employers to discuss the number of working hours with students during a job interview. They can for example discuss how many contact hours a student has, how much time the student spends on average on their studies, what their private life is like and what the time-management skills of the student are. This could give the employer and the student a good view of the situation, of what is possible and what the student is capable of. It may be that this also leads to a kind of more perceived 'organizational support' and that the student feels that the organization is interested in the student and thinks along with him or her. The results have shown that high organizational support is related to less stress of students. Making sure that the student perceives organizational support is thus important for reducing the level of stress of the student. This could also be a reason for the student to choose to work for that organization, which makes sure that this implication is also beneficial for the employer.

The number of study hours is positively related to the level of stress. This means that it should be examined if the number of study hours is realistic or that students do spend too many hours on their study in comparison with what is expected from them. It could be that there are students who have been unjustly admitted to a study or that some studies are too tough for the average student. These could be reasons of the high level of stress among students and could be tackled.

Academic peer support is also found to be negatively related to the degree of stress, when controlled for gender, living situation, number of study hours and organizational support. This means that students should be aware of this finding and that they should support their peers. The government, university boards and student associations could play a role in this. They could start a campaign that reminds students that they can contribute to reducing the level of student stress by supporting other students. They could support students for example by providing informational, esteem, motivational or venting support. This could help to decrease the level of stress of students.

## 6.4 Recommendations

Many students in the Netherlands experience a high level of stress and this does not come without consequences. Therefore, the level of stress needs to be reduced. According to previous research, a part-time job could lead to stress of students, but this has not been found in this study. The number

of working hours also does not appear to play a role in the level of stress. Nevertheless, a number of practical implications have been prescribed for the government, organizations, student associations and university boards to implement. It is recommended to take these practical implications into consideration, but it is also recommended that further research is needed to examine how the level of stress among students can be reduced. In the previous paragraph some examples are given for possible research questions and these questions need to be addressed through more quantitative and qualitative research with a larger sample and an adequate stress scale, and preferably a longitudinal study design.

### 6.5 Reflection

In this last part of the thesis I would like to explain what I personally think of the results that have emerged from this research and I would like to briefly reflect on the research process that has led to these results. The results of this research say something about students in the Netherlands. I am also a student in the Netherlands and I also have a part-time job, which were the main subjects of this research. This means that I could answer the research question myself. If I would do so, I would say that working more hours would lead to more stress since managing and combining study, work, a social life and sports would become more difficult. Additionally, I believe that different types of support can have an impact on this. For example, my supervisor at my part-time job is always very interested in my study progress and while writing my thesis she gave me all the space I needed by not burdening me with extra work and giving me time off when necessary. Besides, she thought along with me, was open to interviews, allowed me to change working days when the University schedule changed, and she allowed me to watch lectures at the office when necessary. For me this felt like support and it made me feel less worried about combining the roles. Therefore, I am surprised by the results found and that is why I recommended further research. Although I have a certain opinion about the topics and the answer to the research question, I have not been able to influence the results since quantitative research has been used. The conclusion is based on statistical analyses and can be verified by any researcher.

The results and the answer to the research question have not been achieved without its challenges. It was a live and learn experience. During the research process, I often encountered problems and unforeseen circumstances. For example, at the beginning of the literature study I thought there had not yet been any research into the relationship between a part-time job and the level of stress of students. Later it turned out there had been research about this and there was a relationship. As a result, it was no longer clear what my literature 'gap' was and I had to look for a new angle. This caused some delay, but it also made me learn how to deal with problems and to look for solutions.

Some days I couldn't get a single letter down on paper and other days I could tick away a number of pages. I have learned that it is useful to take a step back on days when there are difficulties and to continue later. For example, I greatly underestimated analysing the results and working with SPSS, and had to deal with some setbacks during this phase. At some point, I continued optimising the first three chapters and then picked up the results later again. This gave me new energy and new insights. In addition, the research process was conducted in the Covid-19 pandemic. This ensured that all meetings took place online. This had its advantages and disadvantages. My supervisor and I have never seen each other in real life, which probably makes the working relationship different. However, Zoom allowed us to schedule meetings at short notice and we did not have to travel. In addition, my social life was limited so I could put all my energy and time into conducting this research.

I experienced that writing a thesis is quite lonely, especially since the thesis was not written for an organization and therefore I had no 'colleagues'. Hence, I am glad that I had some kind of peer group, namely the thesis circle fellow students. On the one hand, it is good to have such a group and to be able to spar and ask for help from time to time. On the other hand, I found it unfortunate that I was dependent on others and that I could not put my own spin on things. For example, having a common main research question did not feel logical to me and I found it difficult to adapt to it. Fortunately, I was allowed to deviate from this later on and I was therefore permitted to formulate my own main research question.

Apart from the fact that it was a rather lonely process, it was also a process with few deadlines and structure. I like having structure and guidelines and normally I am also someone who wants to get everything done in time. Because we did not have certain deadlines now, I noticed that I often put off working on the thesis and that I needed a certain pressure to perform. I have never experienced this before during all the years I have been studying. Perhaps this is a sign that I am now really done with studying and that it is time for me to start working.

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# **Appendices**

## Appendix 1: Questionnaire

# Het leven van een student met een voltijd studie op hbo of wo niveau en een eventuele bijbaan

Survey Master Thesis voor studenten van hbo/wo niveau

Beste student,

Alvast heel erg bedankt dat je tijd wil vrijmaken om de vragenlijst in te vullen en wil deelnemen aan ons onderzoek. De vragenlijst is onderdeel van vijf master scripties die worden geschreven voor de master Strategic Human Resources Leadership aan de Radboud Universiteit. De scripties hebben een gezamenlijk hoofdonderwerp, namelijk het leven van een student met een voltijd studie op hbo of wo niveau en een eventuele bijbaan.

Het invullen van de vragenlijst duurt ongeveer 10 minuten. Deelname aan de vragenlijst is geheel vrijwillig en de door jou verstrekte antwoorden worden zorgvuldig behandeld. Dat betekent dat de gegevens anoniem worden verwerkt en dat de gegevens op geen enkele manier door derden herleidbaar zijn naar respondenten. Je kan te allen tijde je deelname stoppen door de vragenlijst niet verder in te vullen en deze browser af te sluiten. Jouw persoonlijke informatie zal dan niet worden opgeslagen.

Een leuke bijkomstigheid is dat er drie bol.com cadeaubonnen worden verloot onder de deelnemers van het onderzoek. Als je de vragenlijst volledig invult, maak je kans op één van deze drie cadeaubonnen.

Als je vragen, opmerkingen of klachten hebt, kan je contact opnemen met femke.dings@student.ru.nl

Groet,

Sam Kremers, Inge van Wijk, Veerle Karsdorp, Bob Kamp & Femke Dings

Ik heb de informatie over het doel van het onderzoek gelezen en ben me ervan bewust dat mijn gegevens anoniem gebruikt worden. Door onderstaande aan te vinken, stem ik in met deelname aan het onderzoek.

[ 0 lk geef toestemming]

## Algemene vragen

- Wat is je leeftijd? [Open vraag]
- Wat is je geslacht? [Man, vrouw, anders]
- Ben je thuis- of uitwonend? [Thuiswonend of uitwonend]
- Hoeveel geld ontvang je van je ouders per maand? [Open vraag]
- Onder welke categorie valt jouw studie het beste?
  - o Aarde en Milieu
  - Economie en Business
  - o Exact en Informatica
  - Gedrag en Maatschappij
  - o Gezondheid
  - Interdisciplinair
  - Kunst en Cultuur
  - o Onderwijs en Opvoeding
  - o Recht en Bestuur
  - o Taal en Communicatie
  - o Techniek
- Op welk niveau studeer je?
  - Associate Degree
  - o HBO Bachelor
  - o HBO Master
  - o WO Bachelor
  - o WO Master
  - Pre-Master

## Studiejaar

- Is je huidige studie de eerste studie die je volgt? [Ja of nee]
- Hoeveel jaar studeer je op dit moment? [1, 2, 3, 4, 5+]
- Als je een Bachelor student bent, in welk studiejaar van je huidige studie zit je dan momenteel? [1, 2, 3, 4, 5+)
- Op welke hogeschool studeer je als je een HBO Bachelor of Master volgt?
  - Aeres Hogeschool
  - o Amsterdamse Hogeschool voor de Kunsten
  - Hogeschool van Amsterdam
  - o Hogeschool van Arnhem en Nijmegen
  - ArtEZ Hogeschool voor de kunsten
  - Avans Hogeschool
  - Breda University of Applied Sciences
  - o Christelijke Hogeschool Ede
  - Hogeschool Windesheim
  - o Codarts Hogeschool voor de Kunsten
  - Design Academy Eindhoven
  - Driestar Hogeschool
  - Fontys Hogescholen
  - Hogeschool Viaa
  - o Gerrit Rietveld Academie
  - De Haagse Hogeschool

- o Hanzehogeschool Groningen
- HAS Hogeschool
- o HKU
- Hogeschool De Kempel
- Hogeschool Inholland
- Hogeschool IPABO
- HZ University of Applied Sciences
- Iselinge Hogeschool
- Hogeschool Leiden
- Hotelschool The Hague
- Katholieke Pabo Zwolle
- o Koninklijke Academie van Beeldende Kunsten/Koninklijk Conservatorium
- Marnix Academie
- NHL Stenden Hogeschool
- Hogeschool Rotterdam
- Saxion
- Thomas More Hogeschool
- Hogeschool Utrecht
- o Hogeschool Van Hall-Larenstein
- Zuyd Hogeschool
- Op welke universiteit studeer je als je een WO Bachelor of Master volgt?
  - o Rijksuniversiteit Groningen
  - o Radboud Universiteit Nijmegen
  - Wageningen Universiteit
  - Universiteit Maastricht
  - Technische Universiteit Eindhoven
  - Universiteit van Tilburg
  - Universiteit van Amsterdam
  - Vrije Universiteit
  - Universiteit van Twente
  - o Universiteit van Utrecht
  - o Nyenrode Business Universiteit
  - o Technische Universiteit Delft
  - Universiteit Leiden
  - o Erasmus Universiteit Rotterdam

### Studentenlening

- Maak je gebruik van een studentenlening via DUO? [Ja of Nee]
- Wat is het bedrag van jouw studentenlening per maand? (open vraag, nummer)
- Wat is (bij benadering) jouw huidige studieschuld op dit moment? (exclusief reisproduct/prestatiebeurs) (open vraag, nummer)

# De bijbaan

## Bijbaan

- Heb je een bijbaan naast je studie? Een bijbaan is een baan waarvoor je betaald krijgt, die je hebt naast je voltijd studie. [Ja of nee]
- Hoeveel uur werk je gemiddeld **per week** bij je bijbaan? Als je meer dan één bijbaan hebt, tel dan het aantal uren bij elkaar op. [Open vraag]
- In welke categorie valt je bijbaan het beste? [Horeca, bezorging, retail, logistiek, sales, zorg, kantoorbaan, bijles, anders, namelijk ...] + meerdere antwoordopties mogelijk (i.v.m. verschillende bijbanen)
- Hoeveel verdien je **per maand** met je bijbaan? [Open vraag + niet verplichte vraag)

## Studie gerelateerde bijbaan

Studie gerelateerde bijbanen zijn bijbanen die enige overeenkomsten hebben met de inhoud van je studievakken of die gerelateerd zijn aan het vakgebied waarin je je wilt ontwikkelen in je verdere loopbaan.

- Is jouw bijbaan aan je studie gerelateerd? [Ja of Nee]

#### Werkuren

Non-reguliere werktijden zijn: Avonden/nachten na 20.00 uur, en de weekenden.

- Werk je tijdens non-reguliere werktijden? [Ja of Nee]
- Hoeveel non-reguliere werkuren heb je **per week**? [Open vraag]

## Studeer tijd

De volgende drie vragen gaan over contacturen en de tijd en moeite die je in je studie steekt.

- Hoeveel (verplichte) contacturen heb je gemiddeld **per week**? [Open vraag; aantal in uren]
- Hoeveel uur spendeer je gemiddeld aan je studie **per week**? [Open vraag; aantal in uren]
- Hoeveel moeite kost het je om (goed) te studeren?
  - o Likertschaal: 1. Heel weinig, 2. Weinig, 3. Niet weinig, niet veel, 4. Veel, 5. Heel veel

## **Uitkomsten**

## Stress

De volgende vier vragen worden gevraagd om je mate van stress te meten. Geef voor elke vraag aan in hoeverre dit van toepassing is op jou.

- Hoe vaak heb je problemen gehad om te ontspannen?
- Hoe vaak ben je geïrriteerd?
- Hoe vaak ben je gespannen?
- Hoe vaak ben je gestrest?

Antwoord mogelijkheden: 1 Nooit, 2 soms, 3 regelmatig, 4 vaak, 5 altijd

### **Studieprestaties**

De volgende vragen gaan over je studieprestaties. Vaak zijn de antwoorden op de volgende vragen gemakkelijk terug te vinden in je studenten app.

The relation between number of working hours and students' level of stress, and the role of support

- Wat is (bij benadering) je gemiddelde cijfer?
- Hoeveel studiepunten heb je tot nu toe behaald in het huidige studiejaar? [Open question; number]
- Hoeveel studiepunten had je kunnen behalen in het huidige studiejaar? [Open question; number]

## Studiebetrokkenheid

De volgende vijf vragen gaan over hoe betrokken je bent bij je studie. Geef voor elke vraag aan hoe vaak deze gebeurtenis voorkomt.

- Hoe vaak verdiep je je in de stof voordat je naar het college komt?
- Hoe vaak luister je aandachtig naar het college, draag je bij aan klassikale discussies of stel je vragen?
- Hoe vaak lees je je studieboeken?
- Hoe vaak spreek je buiten het college met docenten over een vak?
- Hoe vaak maak je gebruik van schoolbibliotheken?

Likertschaal: 1 Nooit, 2 soms, 3 regelmatig, 4 vaak, 5 altijd

## **Support**

De volgende vragen gaan over de support, ofwel steun, die je op je werk en van je medestudenten ontvangt. Als je meer dan één bijbaan hebt, ga dan bij het beantwoorden van de volgende vragen uit van de bijbaan waar je de meeste uren per week werkt.

## Ervaren steun van de leidinggevende

De volgende drie stellingen worden gevraagd om te meten in hoeverre je door je leidinggevende van je bijbaan wordt gesteund. Geef aan in hoeverre je het met de volgende stellingen eens bent.

- Mijn leidinggevende begrijpt mijn studiebehoeften
- Mijn leidinggevende luistert naar me wanneer ik over mijn studie praat
- Mijn leidinggevende erkent dat ik verplichtingen heb als student

Antwoord mogelijkheden: 1 (sterk mee oneens), 2 (mee oneens), 3 (neutraal), 4 (mee eens), 5 (sterk mee eens).

## Ervaren steun van de collega's

De volgende drie stellingen worden gevraagd om te meten in hoeverre je door je collega's bij je bijbaan wordt gesteund. Geef aan in hoeverre je het met de volgende stellingen eens bent.

- Ik heb het gevoel dat ik met mijn collega's kan praten over persoonlijke problemen
- Mijn collega's zijn persoonlijk geïnteresseerd in mij
- Als het moeilijk wordt, zijn er collega's op het werk bij wie ik kan aankloppen voor hulp

Antwoord mogelijkheden: 1 (sterk mee oneens), 2 (mee oneens), 3 (neutraal), 4 (mee eens), 5 (sterk mee eens).

### Ervaren steun van de organisatie

De volgende drie stellingen worden gevraagd om te meten in hoeverre je door de organisatie van je bijbaan wordt gesteund. Geef aan in hoeverre je het met de volgende stellingen eens bent.

- Over het algemeen zijn de managers in de organisatie erg meegaand met studie- en persoonlijke verantwoordelijkheden.
- Over het algemeen moedigen de managers in de organisatie anderen aan om gevoelig te zijn voor de opleiding en persoonlijke zorgen van werknemers

Antwoord mogelijkheden: 1 (sterk mee oneens), 2 (mee oneens), 3 (neutraal), 4 (mee eens), 5 (sterk mee eens).

### Ervaren steun van medestudenten

De volgende stellingen worden gevraagd om te meten in hoeverre je door je medestudenten wordt gesteund. Geef aan in hoeverre de volgende gebeurtenissen in de afgelopen maand bij jou zijn voorgekomen.

- Een andere student legde aan mij uit hoe je een specifiek probleem moet oplossen
- Een andere student legde aan mij uit hoe een bepaalde opdracht moet worden uitgevoerd
- Een andere student heeft mij geholpen om de lesstof beter te begrijpen
- Een andere student legde mij iets van het college uit
- Een andere student luisterde naar mij toen ik mijn frustraties over een college uitte

- Een andere student luisterde naar mij toen ik mijn frustraties over een docent uitte

Antwoord mogelijkheden: 1 (helemaal niet), 2 (één of twee keer per maand), 3 (ongeveer één keer per week), 4 (enkele keren per week) tot 5 (zo goed als iedere dag)

# Time management vaardigheden

## Korte termijn planning

Geef aan hoe vaak de onderstaande activiteiten zijn voorgekomen in de afgelopen week

- Ik maak een lijst van de dingen die ik op een dag moet doen
- Ik plan mijn dag voordat ik eraan begin
- Ik maak een schema van de taken die ik op werkdagen moet doen
- Ik creëer dagelijkse doelen voor mijzelf
- Ik besteed tijd aan het plannen van activiteiten op een dag
- Ik heb een duidelijk idee van wat ik de komende week wil bereiken
- Ik houd mij aan mijn planning

Antwoordmogelijkheden:	1	Nooit,	2	soms,	3	regelmatig,	4	vaak,	5	altijd
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#### Time attitudes

- Ik heb het gevoel dat ik de baas ben over mijn eigen tijd
- Er is ruimte voor verbetering in de manier waarop ik mijn tijd beheer
- Ik gebruik de tijd die ik heb effectief
- Ik besteed op een gemiddelde lesdag meer tijd aan mijn part-time baan dan aan mijn studie
- Ik ga door met activiteiten/werk wanneer deze mijn studieproces negatief beïnvloeden
- Ik doe dingen die mijn studieplanning verstoren, simpelweg omdat ik er een hekel aan heb om 'nee' te zeggen tegen mensen

Antwoordmogelijkheden: 1 Nooit, 2 soms, 3 regelmatig, 4 vaak, 5 altijd + Wanneer antwoord 1/2/3/4 bij de laatste vraag: Tegen wie zeg je geen 'nee'? Je mag meer dan één vakje aankruisen. Antwoordopties: Manager/baas, Klanten/cliënten, werknemers/collega's, vrienden

The relation between number of working hours and students' level of stress, and the role of support

Bedankt voor je tijd om aan deze enquête deel te nemen.

Als je graag op de hoogte wil worden gebracht van de resultaten en als je kans wil maken op één van de drie cadeaubonnen, dan kan je hier je emailadres invullen. Bij de verwerking van de gegevens zal je emailadres worden verwijderd, zodat het niet mogelijk is om je antwoorden te herleiden naar jou.

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# Appendix 2: Output Reliability Tests

**Table 8** *Reliability Test Stress, N = 311* 

Cronbach's Alpha N of Items	0,842 4		
	Mean	Scale Mean if Item	Cronbach's Alpha if
		Deleted	Item Deleted
Problems Relaxing	2,69	8,17	0,781
Irritated	2,48	8,39	0,869
Strained	2,81	8,05	0,768
Stressed	2,88	7,98	0,759

**Table 9** *Reliability Test Perceived Supervisor Support, N = 247* 

Cronbach's Alpha	0,826		
N of Items	3		
	Mean	Scale Mean if Item	Cronbach's Alpha if
		Deleted	Item Deleted
Supp_man_1	3,70	7,52	0,718
Supp_man_2	3,66	7,56	0,802
Supp_man_3	3,86	7,36	0,756

**Table 10** *Reliability Test Perceived Co-worker Support, N = 247* 

Cronbach's Alpha	0,785		
N of Items	3		
	Mean	Scale Mean if Item	Cronbach's Alpha if
		Deleted	Item Deleted
Supp_coll_1	3,56	7,35	0,657
Supp_coll_2	3,79	7,13	0,682
Supp_coll_3	3,57	7,35	0,789

**Table 11**Reliability Test Perceived Organizational Support, N = 247

Cronbach's Alpha	0,725		
N of Items	2		
	Mean	Scale Mean if Item	Cronbach's Alpha if
		Deleted	Item Deleted
Supp_org_1	3,45	3,28	-
Supp_org_2	3,28	3,45	-

The relation between number of working hours and students' level of stress, and the role of support

**Table 12** *Reliability Test Perceived Peer Support, N = 311* 

Cronbach's Alpha	0,877		
N of Items	6		
	Mean	Scale Mean if Item	Cronbach's Alpha if
		Deleted	Item Deleted
Supp_peers_1	2,40	12,36	0,867
Supp_peers_2	2,34	12,41	0,867
Supp_peers_3	2,39	12,37	0,861
Supp_peers_4	2,22	12,54	0,863
Supp_peers_5	2,85	11,91	0,869
Supp_peers_6	2,56	12,20	0,878