**Master Thesis** 





# **Coproduction in student counselling services**

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# **Coproduction in student counselling services**

Subtitle: The influence of autonomy, competence, and relatedness, mediated by coproduction in student counselling services, on the psychological wellbeing of students in higher educational institutions in the Netherlands

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# Preface

In front of you lies my master thesis 'Coproduction in student counselling services,' which has been written to fulfil the final stage of Master Business Administration, with a specialisation in Marketing, at the Radboud University in Nijmegen. Over the past six months I have been working on this thesis and I am very thankful for all the help, advice and support that I have received.

I would like to take the opportunity to thank my supervisor, Prof. Dr. J. Bloemer, who provided me with valuable feedback and was of great support during these months. In addition, I would like to thank Mr. Wetzels for his feedback as my second supervisor. Last, I would like to thank my family, friends, fellow students, and all others involved in this process for their feedback and support.

Anouk Litan

# Abstract

The psychological wellbeing of students has declined since the last decade. The importance of their wellbeing should not be neglected, since they are experiencing several health complaints and education related difficulties. To enhance students' psychological wellbeing, student counselling services can have a positive impact. The psychological wellbeing of students is measured by the PERMA-model, which consists of the five dimensions: Positive Emotions, Engagement, Positive Relationships, Meaning and Accomplishment. Coproduction can have a positive impact on counselling services. To enhance the sense of coproduction that a student experiences, the three needs of Self-Determination Theory - autonomy, competence, and relatedness – should be present within this counselling service. The purpose of this research is to examine the effect of autonomy, competence, and relatedness via student coproduction on students' psychological wellbeing. The results of this research show that coproduction does not have a significant effect on students' psychological wellbeing. In addition, it shows that autonomy only has a little significant effect on coproduction and competence and relatedness do not have a significant effect on coproduction. However, the results do show a significant effect between autonomy, competence, and relatedness and students' psychological wellbeing. Furthermore, these three needs also have a significant effect on each separate dimension of the PERMA-model. This research contributes to literature by explaining the importance of fostering an environment in which autonomy, competence, and relatedness is present within a student counselling context to enhance students' psychological wellbeing.

**Keywords:** Wellbeing, Students' psychological wellbeing, Autonomy, Competence, Relatedness, Coproduction, Self-Determination Theory (SDT), student counselling sessions, higher educational institutions.

# Table of content

1. Introduction	7
1.1 Introduction	7
1.2 Wellbeing	
1.4 Coproduction in student counselling services	
1.4.1 Self-Determination Theory influencing coproduction	10
1.5 Research problem	
1.6 Relevance	11
1.6.1 Theoretical relevance1.6.2 Practical relevance	11 12
1.7 Thesis outline	13
2. Theoretical background	14
2.1 Students' psychological wellbeing	14
2.1.1 PERMA-model	15
2.2 Coproduction in student counselling services	16
2.3 Self-Determination Theory	
2.3.1 Autonomy	18
2.3.2 Competence	
2.4. Concentual Example of the	
2.4 Conceptual Hamework	23 24
2.1 Descente design and data collection	
3.2 Sample	24 24
3.3 Measurement	
3.3.1 Measurement of the independent variables and the mediator	25
3.3.2 Measurement of the dependent variable	
3.4 Pre-test survey	
3.5 Research ethics	
3.6 Reliability and validity	
4. Results	
4.1 Process and sample descriptive	
4.2 Quality of the data	
4.2.1 Discriminant validity	
4.2.3 Reliability	
4.3 Assumptions for Multiple Regression Analysis	
4.4 Multiple Regression Analysis	
4.4.1 Relationship between the independent variables and the mediator	32

4.4.2 Relationship between the mediator and the dependent variable	32
4.4.3 Hypotheses testing	32
4.4.4 Additional analyses	34
5. Discussion	36
5.1 Conclusion	36
5.2 Discussion	38
5.3 Theoretical implications	39
5.4 Practical implications	40
5.5 Limitations and recommendations for further research	40
References	42
Appendices	54
Appendix A: Construct definitions independent variables and mediator	54
Appendix B: Construct definitions dependent variable	56
Appendix C: Survey	58
Appendix D: Sample descriptive	63
Appendix E: Factor analysis iteration 1	65
Appendix F: Factor analysis iteration 2	70
Appendix G: Separate factor analyses	73
Appendix H: Reliability analysis	78
Appendix I: Assumptions for multiple regression analysis	80
Appendix J: Relationship autonomy, competence, and relatedness and coproduction	85
Appendix K: Relationship coproduction and students' psychological wellbeing	86
Appendix L: Hypotheses testing	87
Appendix M: Direct relationship autonomy, competence, and relatedness and students'	
psychological wellbeing	91
Appendix N: Relationship autonomy, competence, and relatedness and separate dimension	ns
of the PERMA-model	94
Appendix O: Relationship separate items of coproduction and students' psychological	
wellbeing	95

# 1. Introduction

#### 1.1 Introduction

The psychological wellbeing of Dutch students in higher educational institutions has been decreasing immensely over the past couple of years. Students experience feelings of anxiety, low self-esteem and depression. Besides that, many Dutch students suffer from increased levels of stress and loneliness, which have also resulted in several health-related issues (El Ansari et al., 2011; Sukmana, 2021). The combination of these issues has negatively affected students in functioning in their day-to-day life and negatively affects students' ability to study (Dodd et al., 2021; Litjens & Ruijfrok, 2019; Tomyn & Cummins, 2010). Therefore, it can be said that there is a mental health crisis amongst Dutch students in higher educational institutions. It is crucial that this problem, concerning the decreasing wellbeing of Dutch students, is not neglected by society and that actions are taken (RIVM, 2021).

# 1.2 Wellbeing

The importance of wellbeing has shown to be vital in contemporary society (van der Kooij et al., 2021). However, the general wellbeing of people has been declining since the last decade. Anxiety levels are on the rise and overall life satisfaction has dropped. Especially in recent years, the COVID-19 pandemic has led to a marked decrease in wellbeing. This has resulted in a mental health crisis, particularly among young adults. Action needs to be taken to combat the decline of wellbeing and the additional problems that stem from this development (The Economic Times, 2021).

Wellbeing is a topic that has been of large interest to many professions, since it is a concept that is difficult to grasp due to its multidimensional character (de Chavez et al., 2005). Wellbeing can be defined as an optimal psychological functioning and experience (Ryan & Deci, 2001). Antonini Philippe refers to wellbeing as "emotional and cognitive dimensions of subjective experiences resulting from the individual evaluation of several facets of life" (Antonini Philippe et al., 2019, p.2). Many researchers make a distinction between hedonic wellbeing and eudaimonic wellbeing. Hedonic wellbeing denotes the concept of pleasure and pain avoidance, focusing on the factor happiness (Antonini Philippe et al., 2019; Disabato et al., 2016; Ryan & Deci, 2001). On the other hand, eudaimonic wellbeing goes further than the concept of happiness; it describes the actualisation of human potential (Disabato et al., 2016;

Ryan & Deci, 2001). Furthermore, Disabato states that eudaimonic wellbeing represents living up to one's full potential and trying to achieve personal growth (Antonini Philippe et al., 2019; Disabato et al., 2016). Both hedonic and eudaimonic wellbeing represent significant aspects of psychological wellbeing, which has resulted in an integrated conceptualisation. Because of this, both eudaimonic and hedonic wellbeing will be included in this research (Henderson & Knight, 2012).

Measuring psychological wellbeing can be done by applying the PERMA-model, which reflects the wellbeing that a person pursues for their own sake. In this model, both the hedonic and eudaimonic aspects of wellbeing are considered (Kern et al., 2014; Seligman et al., 2011). The PERMA-model consists of five dimensions: positive emotions, engagement, positive relationships, meaning and accomplishment (Kern et al., 2014). Kern et al. (2014) claims that these five dimensions give an overall result of one's psychological wellbeing.

# 1.3 Wellbeing of students

The importance of student wellbeing has been investigated increasingly. The transition from high school to university can induce poor wellbeing for young adults because of the new and unknown environment (Turner et al., 2017). Especially within higher educational institutions, students face the stress of achieving success in their academic goals. These students reportedly have several health complaints, such as headaches and backaches (El Ansari et al., 2011). Besides that, there are various other implications that can arise when being faced with decreased psychological wellbeing, such as a decline in mental health and psychological distress. This negatively affects the ability of students to learn and experience university life (Dodd et al., 2021; Tomyn & Cummins, 2010).

The COVID-19 pandemic also has a major impact on the wellbeing of students. Students comprise the group most struggling with psychological distress, which has increased even more since the beginning of this pandemic (Butnaru et al., 2021; Ebrahim et al., 2021). In addition, higher educational institutions experienced several disruptions in teaching, switching from their traditional way of teaching to teaching online (Butnaru et al., 2021; Dodd et al., 2021). Students are faced with unexpected isolation accompanied by loss of social and university activities (Butnaru et al., 2021). The COVID-19 pandemic likewise has enhanced several negative effects that students experienced, such as enhanced levels of stress and anxiety (Ebrahim et al., 2021).

Reduced wellbeing also occurs among students in the Netherlands. The National Institute of Public Health and the Environment (RIVM) of the Netherlands states that there are

several concerns regarding the mental health of students. Over 50 percent of students experience psychological problems. Besides that, the RIVM emphasises that many students experience stress and a high degree of pressure to perform in school (RIVM, 2021).

Students in higher educational institutions are facing many challenges which have led to reduced wellbeing (Turner et al., 2017). Especially the Covid-19 pandemic has caused a reduction in the psychological health of students because of the loss of social activities (Dodd et al., 2021). The Netherlands is no exception to this, since reduced wellbeing also occurs among Dutch students. Therefore, it can be seen that the reduced psychological wellbeing of students is an important concern for society (RIVM, 2021).

# 1.4 Coproduction in student counselling services

The decrease in psychological wellbeing is common among students (Vescovelli et al., 2017). To combat this, higher educational institutions could play a crucial role by implementing student counselling services. Student counselling services are provided to help students with the problems they are facing, such as academic challenges (McKenzie et al., 2015; Vescovelli et al., 2017). The positive impact of student counselling services on the psychological wellbeing of students, which has also led to reduced stress levels and higher academic achievements, has been proven (Alrajhi & Lawati, 2018; McKenzie et al., 2015; Vescovelli et al., 2017).

When taking part in counselling, a significant responsibility is placed on students. Tasks can be assigned to them to combat the decrease in psychological wellbeing that they are experiencing. This indicates that counselling in higher educational institutions is not a one-way interaction, but rather a coproduction between the counsellor and the student (Mende & van Doorn, 2015). The effect of coproduction within various fields has been examined by Transformative Service Research (TSR) (Anderson & Ostrom, 2015; Rosenbaum et al., 2011). TSR emphasises that the role that individuals play in creating their own psychological wellbeing should not be neglected (Rosenbaum et al., 2011). The positive effect of coproduction has been researched by Mende & van Doorn (2015) in the financial counselling industry. Consequently, this research can also be seen as part of TSR, since it aims to improve students' psychological wellbeing by examining the effect of coproduction in student counselling services. Coproduction between a counsellor and student can be defined as the student's active participation in the creation of the student counselling service (Lusch & Vargo, 2006). When a student shows that they are willing to coproduce the counselling service together with the

counsellor, this will result in higher levels of psychological wellbeing (Mende & van Doorn, 2015).

# 1.4.1 Self-Determination Theory influencing coproduction

To make student counselling services beneficial for students, it is essential that the service is a coproduction between students and counsellors (Mende & van Doorn, 2015). To achieve a desired behavioural change in students, the three psychological needs of the Self-Determination Theory are vital. Self-Determination Theory describes the need for autonomy, competence, and relatedness which aid in achieving behavioural change (Moller et al., 2006; Deci & Ryan, 2008; Seligman et al., 2011). Consequently, these three needs influence the level of coproduction that students can experience (Deci & Ryan, 2008; Mende & van Doorn, 2015).

First, *Autonomy* relates to having a sense of choice and fully endorsing one's own actions and decisions (Deci & Ryan, 2008). Autonomy emphasises that students see the importance of coproducing the service of counselling. This relates to students being involved in this process and contributing, together with the counsellor, to achieve the desired outcome (Mende & van Doorn, 2015).

Next, *competence* refers to the sense of being skilled when performing a task (Ahn & Back, 2019; Engström & Elg, 2015). A feeling of competence refers to students believing that they can contribute to the student counselling service together with their counsellor. It aims at students experiencing literacy when coproducing the counselling service, and essentially believing that they can achieve the desired results (Mende & van Doorn, 2015).

Last, *relatedness* refers to feeling cared for and closely connected to others (Seligman et al., 2011). Relatedness explains the ability of students to create nurturing relationships together with their counsellor. The ability to create these kinds of relationships, and therefore experience coproduction between the counsellor and the student, depends on the attachment style of students (Mende & van Doorn, 2015).

#### 1.5 Research problem

The importance of psychological wellbeing is crucial in today's society, especially since the general wellbeing of people has been decreasing in the past decade (van der Kooij et al., 2021). Students are no exception to this, given that they face the stress of achieving success in their academic goals. This has led to students experiencing several health complaints (El Ansari et al., 2011). The reduced psychological wellbeing negatively affects the ability of students to

learn and experience student life (Dodd et al., 2021; Tomyn & Cummins, 2010). It is of critical importance that research is done to discover ways to enhance student wellbeing.

To enhance psychological wellbeing, literature describes the positive impact that student counselling services have on the psychological wellbeing of students, which can be measured by using the five dimensions of the PERMA-model (Kern et al., 2014; Seligman et al., 2011; Vescovelli et al., 2017). Literature describes that coproduction can have a positive impact on counselling services (Mende & van Doorn, 2015). To enhance the sense of coproduction that one experiences, Self-Determination Theory describes the need for the three psychological needs autonomy, competence, and relatedness (Moller et al., 2006; Seligman et al., 2011). However, little research has shown whether coproduction has a positive effect in the environment of student counselling services. Furthermore, the effect of autonomy, competence, and relatedness on coproduction is relatively unknown. It is vital to gain knowledge about coproduction in student counselling services and the role of the Self-Determination Theory, since this will give insight into a more effective way of conducting counselling sessions. More effective counselling sessions will lead to an enhanced psychological wellbeing of students. Therefore, the aim of this study is to research what the effect of autonomy, competence, and relatedness, via student coproduction, is on the psychological wellbeing of students who study in higher educational institutions. Thus, the following research question is formulated:

What is the influence of autonomy, competence, and relatedness, mediated by coproduction in student counselling services, on the psychological wellbeing of students in higher educational institutions in the Netherlands?

#### 1.6 Relevance

## 1.6.1 Theoretical relevance

This research makes several contributions to literature by extending the research that has been done regarding the psychological wellbeing of students in higher educational institutions.

First, this research contributes to the literature regarding Self-Determination Theory. The positive effect of autonomy, competence, and relatedness on psychological wellbeing has been shown in several research projects (Moller et al., 2006; Seligman et al., 2011). However, this research contributes to the existing knowledge by adding the mediating variable of coproduction. This will enrich the knowledge about the positive effect of autonomy, competence, and relatedness on psychological wellbeing and give insights as to whether coproduction can enhance this effect even further.

Second, the concept of coproduction has been researched by Mende and van Doorn (2015) in a financial counselling setting. However, this research examines the relationship in a different setting. It focusses on student coproduction in student counselling services and its effect on the psychological wellbeing of students in higher educational institutions. This research will explore coproduction in a different field by examining the role of students as part of their own value creation process and the impact on their psychological wellbeing.

#### 1.6.2 Practical relevance

In addition to the theoretical relevance of this study, it also has several contributions to practice.

First, the importance of the psychological wellbeing of students cannot be expressed enough. University students face moments of stress when trying to achieve their academic goals, which has led both to issues in their learning environment and issues concerning their health (El Ansari et al., 2011). These issues negatively affect students' psychological wellbeing (Dodd et al., 2021; Tomyn & Cummins, 2010). On the other hand, positive psychological wellbeing can lead to long-term benefits for students, such as greater self-awareness and better physical health (Kern et al., 2014). Therefore, the results of this study can be crucial in examining factors that influence the psychological wellbeing of students.

Second, lowered psychological and mental health of students can also be problematic for higher educational institutions, since they are linked to reduced academic performance, which negatively reflects the overall performance and quality of higher educational institutions (Stamp et al., 2015). Furthermore, higher educational institutions also have an ethical obligation to create a learning environment in which the psychological wellbeing of students is highly valued (Baik et al., 2019). It is of importance for higher educational institutions to see if they can contribute to the psychological wellbeing of their students. At this moment, many higher educational institutions provide student counselling services, but the role of coproduction within these services is not well-known. This research contributes to that by exploring the effect of autonomy, competence, and relatedness via student coproduction in student counselling services on the psychological wellbeing of their students.

Third, by examining the effects of the three needs of Self-Determination Theory on student coproduction in student counselling services, counsellors will gain valuable knowledge for their field of work. This research will provide knowledge concerning the significance of experiencing autonomy, competence, and relatedness in student counselling services. Besides that, it examines the importance of coproducing the student counselling service, together with the student. Hence, this research will provide student counsellors with insights on the

importance of creating an environment in which autonomy, competence, and relatedness are fostered. It will show them the importance of a coproduction process between them and their students when conducting a counselling session.

Last, the lowered amount of psychological wellbeing of students also has a major impact on society. People who experience lower levels of psychological wellbeing are more prone to health-related issues. These issues result in people calling in sick more often, more medical observations and less energy. These issues can last for a very long time, which can have an impact on various systems within society, such as the healthcare system. Since there is a large shortage of healthcare personnel in the Netherlands, it is vital that health-related issues are prevented (NOS, 2022). This research will therefore contribute to combatting this problem by examining the effect that student counselling services can have on the psychological wellbeing of students.

# 1.7 Thesis outline

This study consists of five chapters. Chapter 2 will give an elaborate description of the theoretical background of the research and provide the conceptual model. Chapter 3 will explore the methodology that is used to gather information. Chapter 4 describes the results that are derived from the research that has been conducted. After that, chapter 5 provides the conclusion and discussion regarding the research. It also goes into detail about the limitations of the study and provides recommendations for further research.

# 2. Theoretical background

# 2.1 Students' psychological wellbeing

The psychological wellbeing of the Dutch population has been declining. This has caused a mental health crisis, particularly among students (RIVM, 2021; The Economic Times, 2021). Data about students' mental health is alarming since there is a continuously growing frequency and severity of mental health issues that students are facing, such as stress, lack of confidence and anxiety (Alrajhi & Lawati, 2018; Baik et al., 2019; Vescovelli et al., 2017). In the last few years, students in higher educational institutions have shown to be prone to various forms of reduced mental health. All these issues have caused lower psychological wellbeing amongst students (Dodd et al., 2021; Tomyn & Cummins, 2010).

Psychological wellbeing is a complex, multi-dimensional construct that does not have a universally agreed-upon definition (Dodge et al., 2012). Ryan & Deci (2001, p.42) define wellbeing as "optimal psychological functioning and experience." It can also be described as emotional and cognitive dimensions of subjective experiences, which are the result of several facets of life that come from the evaluation of an individual (Antonini Philippe et al., 2019). A distinction that is made in the literature regarding psychological wellbeing is the conceptualisation of hedonic wellbeing and eudaimonic wellbeing. Hedonic wellbeing emphasises constructs such as happiness and satisfaction with life (Dodge et al., 2012). It focuses on wellbeing in terms of pain avoidance and the attainment of pleasure (Ryan & Deci, 2001). Eudaimonic wellbeing accentuates human development and one's degree of selfrealisation (Dodge et al., 2012; Giangrasso, 2018; Ryan & Deci, 2001). It represents human flourishing and extends the concept of wellbeing beyond pleasure-driven happiness to ensure that one is working towards personal growth (Disabato et al., 2016). Hedonic and eudaimonic wellbeing each denote significant aspects regarding psychological wellbeing, which has led to an integrated conceptualisation. This research will include both eudaimonic and hedonic wellbeing, which together comprise psychological wellbeing (Henderson & Knight, 2012).

Concluding, students' psychological wellbeing is an important construct to elaborate on, since there is an increasing number of students who experience a decreased wellbeing (Baik et al., 2019; Vescovelli et al., 2017). Wellbeing can be defined in terms of hedonic and eudaimonic wellbeing, which, together, represent the multi-dimensional aspect of the complex nature of psychological wellbeing (Henderson & Knight, 2012; Ryan & Deci, 2001).

#### 2.1.1 PERMA-model

Psychological wellbeing can be seen as a complex and multi-dimensional construct that is comprised of both hedonic and eudaimonic aspects (Henderson & Knight, 2012). The PERMA-model has been created to effectively measure this construct. This model describes the five dimensions: positive emotions, engagement, positive relationships, meaning, and accomplishment, which together comprise psychological wellbeing (Kern et al., 2014).

The first dimension, *positive emotions*, is an essential goal of individuals (Tansey et al., 2017). It describes having a subjective experience of happiness when thinking about the past, present and future. It is an indication of hedonic feelings and can be linked to feelings of joy, positivity and satisfaction (Giangrasso, 2018; Kern et al., 2014). Positive emotions are important for students to experience, since this can result in a deeper learning approach, which is associated with better academic outcomes (Tansey et al., 2017).

Second, *engagement* refers to feeling absorbed and engaged in life. It encompasses a psychological connection to certain activities or organisations in which one is highly invested (Kern et al., 2014; Seligman et al., 2011; Umucu et al., 2019). Furthermore, engagement can be seen as important for students, since a higher degree of engagement has been found to increase their academic achievements (Tansey et al., 2017).

The third dimension, *positive relationships*, includes the connections that one has with others in which they feel cared for and supported. It describes feeling socially integrated and satisfied with the relationships that someone has established (Goh et al., 2021; Kern et al., 2014; Seligman et al., 2011; Umucu et al., 2019). In addition, it has been shown that students who have strong relationships, romantically as well as socially, tend to be happier than students who do not have these relationships (Tansey et al., 2017).

Fourth, *meaning* indicates a feeling of having a sense of purpose in life. This purpose is derived from something greater than the self (Giangrasso, 2018; Kern et al., 2014; Seligman et al., 2011; Umucu et al., 2019; Wammerl et al., 2019). Having a sense of purpose in life has been found to positively boost academic performances for students (Tansey et al., 2017).

Last, the fifth dimension is *accomplishment*. It describes the perception of achievement, making progress towards goals and feeling capable to engage in certain activities (Kern et al., 2014; Seligman et al., 2011; Umucu et al., 2019). Having a sense of accomplishment has been found to positively influence academic outcomes (Tansey et al., 2017).

Incorporating the five dimensions of the PERMA-model will give a clear and complete overview of both the hedonic and eudaimonic aspects of psychological wellbeing. Thus, it will be a fitting instrument when measuring the psychological wellbeing of students.

### 2.2 Coproduction in student counselling services

The importance of students' mental health and wellbeing should not be neglected by their higher educational institutions. The alarming occurrence of psychological problems amongst students shows that this is a critical issue for society and for learning institutions itself, since thwarting psychological wellbeing can have major effects on education-related outcomes (Alrajhi & Lawati, 2018; Baik et al., 2019; Vescovelli et al., 2017). The mental health issues that students are facing can lead to problems such as a delay in study progress and dropping out of study programmes (Vescovelli et al., 2017). The support of student wellbeing is critical to provide positive educational experiences for all students. Ethically, higher educational institutions also have an obligation to contribute to the wellbeing of their students by creating an environment in which help is provided when students are experiencing psychological issues (Baik et al., 2019). Furthermore, the seriousness of the problems students are facing because of reduced wellbeing also increases. Very severe mental issues occur nowadays, such as depression or even suicidal thoughts (Vescovelli et al., 2017).

To combat these problems, student counselling services are part of many higher educational institutions. Student counselling services are a distinguished form of counselling which tackle problems that students are facing (Alrajhi & Lawati, 2018). Counselling services can identify and support students who are dealing with mental health issues and prevent the emergence of serious psychological disorders (Vescovelli et al., 2017). Research has shown that students benefit from counselling when they experience academic challenges (McKenzie et al., 2015).

To ensure the best outcome of these student counselling services, coproduction is an essential indicator. Coproduction can be seen as the effort that consumers employ to incorporate resources through a range of various activities (Anderson & Ostrom, 2015; Mende & van Doorn, 2015). The positive effect of coproduction within various fields has been examined by Transformative Service Research (TSR), which focuses on creating uplifting changes to enhance the life of consumers (Anderson & Ostrom, 2015; Rosenbaum et al., 2011). TSR describes that consumers will always play a large role in creating their own psychological wellbeing. It emphasises the positive impact that co-creating value in collaboration with service providers has (Rosenbaum et al., 2011). Within the field of TSR, Mende & van Doorn (2015) describe the positive influence of coproduction on wellbeing. Their research is aimed at coproduction within the financial counselling industry and describes the valuable role that consumers have on their own service outcomes. The success of a service depends heavily on the collaborative behaviour of the consumers that make use of it (Mende & van Doorn, 2015).

This research can also be seen as part of TSR, since it focuses on the improvement of the psychological wellbeing of students by using student counselling services. Within student counselling services, coproduction can be defined as students' active participation in the creation of the counselling service (Lusch & Vargo, 2006). Here, the success of the counselling session also heavily depends on the collective input from students, together with their counsellors. When students deliver input in the counselling process, counsellors can create tailor-made solutions, which fit the specific needs and of students. Also, when students actively take the advice that is given to them on board and change their behaviour or habits, greater results will be established. This will lead to students being better equipped to handle the problems that they are facing and eventually improving their mental psychological wellbeing (Alrajhi & Lawati, 2018; McKenzie et al., 2015; Vescovelli et al., 2017).

Furthermore, the benefits of coproduction are largely discussed within the theory of Service-Dominant Logic, which establishes the position of intangible resources and emphasises the role of value coproduction within these resources (Lusch et al., 2007). The concept of value coproduction stresses that customers should not be excluded from creating the service offering; they are the ones that can create exceptional value to the product. This value coproduction process will bring several benefits for both actors involved in the exchange (Lusch et al., 2007; Nicod & Llosa, 2018). For a student counsellor, coproduction can increase the success rate of the counselling session and reduce the amount of counselling sessions that are needed per student. This will result in the counsellor being able to provide counselling sessions to more students in less time. For the student, coproduction has shown to be beneficial for the amount of trust that is developed within the interaction. A good coproduction process increases the chance that the student achieves the set objectives, which will improve the overall satisfaction of the student (Nicod & Llosa, 2018). Therefore, it can be said that the psychological wellbeing of students can benefit from the coproduction within student counselling processes.

Concluding, support from higher educational institutions is critical in providing positive educational experiences for students (Baik et al., 2019). To combat decreased student wellbeing, student counselling services provide assistance by helping students to tackle their problems (Alrajhi & Lawati, 2018). To ensure the best outcome of these services, coproduction is an essential indicator. TSR and the Service-Dominant Logic theory both explain the positive outcomes that coproducing counselling services have on the psychological wellbeing of students (Lusch & Vargo, 2006). Thus, the following hypothesis has been formulated:

**Hypothesis 1:** Coproduction in student counselling services is positively related to students' psychological wellbeing

#### 2.3 Self-Determination Theory

Ryan and Deci's Self-Determination Theory (SDT) emphasises that socio-contextual influences affect the three universal and psychological needs, namely *autonomy, competence,* and *relatedness* (Deci & Ryan, 2008; Seligman et al., 2011). These are a vital part of human nature and essential drivers of behavioural change (Mende & van Doorn, 2015; Seligman et al., 2011). It is critical that all three of these psychological needs are met, since each need contributes to personality development and behavioural self-regulation (Ryan & Deci, 2000; Véronneau et al., 2005). Autonomy, competence, and relatedness are critical for facilitating an optimal functioning for growth and development (Ryan & Deci, 2000). The amount of autonomy, competence, and relatedness can either strengthen or hinder the tendencies for psychological growth and integration, which drive behavioural change (Chiu, 2021; Engström & Elg, 2015; Guay et al., 2008; Ryan & Deci, 2000).

Since autonomy, competence, and relatedness drive behavioural change, they can be seen as important within a coproduction process. Within student counselling services, students can show active participation in the creation of these services. This ensures a coproduction process which benefits the outcomes of the counselling service (Lusch & Vargo, 2006; Mende & van Doorn, 2015). Therefore, it is essential that student counselling services are provided in which students can endorse the feeling of autonomy, competence, and relatedness.

#### 2.3.1 Autonomy

The first psychological need of SDT is autonomy, which can be defined as the feeling of engaging in a specific action in which one enacts volitionally and willingly (Duncan et al., 2020; Engström & Elg, 2015; Ntoumanis & Standage, 2009). It gives the feeling of taking initiative and being the origin of one's own behaviour (Demirbaş-Çelik & Keklik, 2018; Véronneau et al., 2005). The actions that emerge are grounded in being able to exercise choice and freedom in which one feels as having ownership of their actions (Duncan et al., 2020; Engström & Elg, 2015; Niemiec & Ryan, 2009; Ntoumanis & Standage, 2009).

To combat a lower amount of psychological wellbeing of students, autonomysupportive learning conditions should be present, which can be provided by offering student counselling services (Duncan et al., 2020; McKenzie et al., 2015; Vescovelli et al., 2017). To get the best results from counselling services, it is vital that students actively cooperate and are highly involved when taking part in these sessions. When this occurs, the interaction between the counsellor and the student during the counselling process can be seen as a coproduction process. The role of autonomy in this coproduction process can best be described as the amount of student *involvement* in counselling sessions (Mende & van Doorn, 2015). When students feel a larger amount of autonomy and thus feel involved when using student counselling services, they will put in more effort to get the most benefit out of these services and achieve behavioural change (Mende & van Doorn, 2015; Pearson, 2012).

Autonomy, within Self-Determination Theory, and its positive influence on coproduction within student counselling services is supported by the theory of Service-Dominant Logic. It describes that a higher degree of autonomy will give the student a natural tendency to participate in the coproduction process. When feeling autonomous, a student will be intrinsically motivated to exert control over the process that will create value for them (Ahmad, 2016). Besides that, by participating in the coproduction process, students can demonstrate having ownership and taking initiative by collectively providing the counselling process together with the counsellor and being involved in the service (Ahmad, 2016). Creating an environment that fosters the coproduction process between students and their counsellors will then increase the psychological wellbeing of students.

In conclusion, autonomy is experienced when a student feels that they can endorse their own actions and act of their own volition (Duncan et al., 2020; Engström & Elg, 2015; Ntoumanis & Standage, 2009). Within higher educational institutions, student counselling services can be provided to enhance the feeling of autonomy. Both Self-Determination Theory and the theory of Service-Dominant Logic describe that to get the most benefit out of these services, a sense of autonomy ensures that students feel highly involved when coproducing student counselling services (Ahmad, 2016; Mende & van Doorn, 2015). This will create an environment of coproduction between the student and the counsellor, which will have a positive influence on the psychological wellbeing of students (Mende & van Doorn, 2015). Thus, the following hypothesis has been formulated:

**Hypothesis 2:** Autonomy has a positive influence on the psychological wellbeing of students via student coproduction.

# 2.3.2 Competence

The second psychological need of SDT is competence, which relates to having a sense of selfefficacy (Raven & Pels, 2021). Competence refers to one's intrinsic desire to feel effective in interacting with the environment (Engström & Elg, 2015; Véronneau et al., 2005). It describes the perception of achieving desired outcomes, increasing mastery and feeling the opportunity to express one's capacities (Ahn & Back, 2019; Brockelman, 2009; Duncan et al., 2020). It encompasses learning new abilities to feel skilled when performing new or unknown tasks (Ryan & Deci, 2001).

To combat a lower amount of psychological wellbeing from students, it is important that higher educational institutions provide an environment in which students can feel competent in their abilities (Duncan et al., 2020). This can be provided by implementing student counselling services (McKenzie et al., 2015; Vescovelli et al., 2017). When students feel competent during these counselling services, they feel skilled and capable in achieving desired results (Ahn & Back, 2019; Brockelman, 2009; Mende & van Doorn, 2015). Also, they feel competent to influence the outcomes of the student counselling service to make sustainable behavioural changes (Mende & van Doorn, 2015). Competence can be referred to as experiencing *literacy* in the educational environment of the student. A higher degree of literacy will enhance effort and perseverance, which will lead to better outcomes. The more literacy a student experiences, the more they prefer exercising control over the counselling process. When this is achieved, the service of student counselling will be a coproduction process between the counsellor and the student, which leads to the most beneficial results (Mende & van Doorn, 2015).

Competence, within Self-Determination Theory, and its positive influence on coproduction within student counselling services is supported by the theory of Service-Dominant Logic (Ahmad, 2016). The feeling of competency motivates students to actively coproduce the counselling service together with their counsellor (Ahmad, 2016; Ryan & Deci, 2001). It creates the desire for students to share new ideas, have personal interaction and make decisions in the counselling process. These actions will enhance the value of the counselling session (Ahmad, 2016). Creating an environment that fosters the coproduction process between students and their counsellors will then increase the psychological wellbeing of students.

Concluding, competence refers to having a sense of self-efficacy and being skilled to perform tasks (Ahn & Back, 2019; Brockelman, 2009; Duncan et al., 2020). Within higher educational institutions, student counselling services can be provided in which students can exercise their competence. This can be referred to as experiencing literacy. Both Self-Determination Theory and the theory of Service-Dominant Logic explain that when students experience literacy, this will positively enhance the coproduction process between the student and the counsellor (Ahmad, 2016; Mende & van Doorn, 2015). This in turn will lead to a higher psychological wellbeing for students (Mende & van Doorn, 2015). Therefore, the following hypothesis has been formulated:

**Hypothesis 3:** Competence has a positive influence on the psychological wellbeing of students via student coproduction.

#### 2.3.3 Relatedness

The third psychological need of SDT is relatedness. Relatedness can be seen as feeling close and connected to others (Ahn & Back, 2019). It emphasises the need to care and feel cared for and to form deep, meaningful relationships with others in which trust is an essential component (Brockelman, 2009; Duncan et al., 2020; Ntoumanis & Standage, 2009). It emphasises feeling a sense of belonging with others and with one's community (Brockelman, 2009). The need for belongingness is a collective human need (King, 2015).

For students it is important to feel a sense of relatedness when studying in higher educational institutions. Particularly among first-year students, feelings of uncertainty and disconnection can occur because of the new and unknown environment they are experiencing. Students who experience a sense of relatedness and belonging have shown to have higher academic motivation, which results in being more eager to engage in academic and learning activities (Noyens et al., 2018). Students who experience a sense of relatedness to people within their higher educational institution, such as peers and teachers, also experience more adaptive academic outcomes (King, 2015).

To combat a lower amount of psychological wellbeing of students, it is important that higher educational institutions nurture an environment within counselling services that has reciprocal connections, wherein students can experience a sense of relatedness and support. Especially since the outbreak of the COVID-19 pandemic, the need for relatedness has been vital for students. Social distancing and social quarantine have increased feelings of distress and other psychological issues. Students had to experience life from within their homes instead of engaging in social life and educational activities. The possibility to create relationships with others was thwarted (Šakan et al., 2020). Higher educational institutions can provide a sense of relatedness for students by implementing student counselling services (McKenzie et al., 2015; Reis et al., 2000; Vescovelli et al., 2017). To get the best results from counselling, it is important that students are able to create and foster nurturing and positive relationships. Since counselling is a high-contact service, the relationship that students have with their counsellors is important for the effectiveness of the counselling service. Therefore, it is expected that the attachment style that students have influences the coproduction process (Mende & van Doorn, 2015). Attachment styles in this research are the patterns of relational expectations, social behaviours, emotions and needs of students that result from their history of attachment experiences, which influence their relationship with a counsellor. These attachment styles can be categorised according to two dimensions, namely attachment anxiety and attachment avoidance (Japutra et al., 2018; Mende & Bolton, 2011; Mende & van Doorn, 2015).

Attachment anxiety refers to students' fears about the counsellor not being accessible when they need help. The anxiety a student has refers to an excessive need for support and fear of rejection from the counsellor (Japutra et al., 2018; Mende & Bolton, 2011; Mende & van Doorn, 2015).

Attachment avoidance refers to students' fear of relying too much on the counsellor. It describes the students' suspicion of the counsellors' intentions. Because of these suspicions, students strive for emotional and mental distance from the counsellor (Japutra et al., 2018; Mende & Bolton, 2011; Mende & van Doorn, 2015).

Attachment anxiety and attachment avoidance are insecure attachment styles which cause students to not feel assured in coproducing the counselling service together with their counsellors. It creates a barrier for students to form effective working relationships. Therefore, it is important that both a low amount of attachment anxiety and a low amount of attachment avoidance are experienced by students. This will create a sense of relatedness which will enhance the outcomes of the student counselling services (Mende & van Doorn, 2015). Thus, in this study, both a low amount of attachment anxiety and a low amount of attachment avoidance and therefore a high amount of relatedness are seen as facilitators for coproduction in student counselling services.

Relatedness, within Self-Determination Theory, and its positive influence on coproduction within student counselling services is supported by the theory of Service-Dominant Logic (Ahmad, 2016). Experiencing relatedness will establish a form of trust. This will reduce uncertainties and create an opportunity to establish a deeper relationship between the student and counsellor. This will give the student the confidence to contribute to the coproduction process and it enhances information sharing and participation (Lien et al., 2017). Creating an environment that fosters coproduction between students and their counsellors will then increase the students' psychological wellbeing.

In conclusion, relatedness can be seen as feeling a sense of belonging and connectedness to others and forming deep, meaningful relationships (Brockelman, 2009; Duncan et al., 2020; Ntoumanis & Standage, 2009). Within higher educational institutions, it is important that student counselling services are implemented wherein students can feel a sense of relatedness (McKenzie et al., 2015; Vescovelli et al., 2017). Feeling a sense of relatedness with their counsellors depends on the attachment style of students, which can be determined by the amount of attachment anxiety and attachment avoidance. Both Self-Determination Theory and the theory of Service-Dominant Logic explain that having a low sense of both attachment anxiety and attachment and the theory of students. This

will positively enhance the coproduction process in student counselling services (Ahmad, 2016; Mende & van Doorn, 2015). Thus, the following hypothesis has been formulated:

**Hypothesis 4:** Relatedness has a positive influence on the psychological wellbeing of students via student coproduction.

# 2.4 Conceptual Framework

In line with the hypotheses that have been described, Figure 1 shows the conceptual framework that has been created. This framework shows the influence of the individual variables autonomy (in terms of a high amount of involvement), competence (in terms of a high amount of literacy), and relatedness (in terms of a low amount of attachment anxiety and a low amount of attachment avoidance) on psychological wellbeing of students of higher educational institutions, indicated by using the five dimensions of the PERMA-model. This relationship is mediated by student coproduction within student counselling services.



Figure 1: Conceptual model

# 3. Methodology

#### 3.1 Research design and data collection

The aim of this research is to answer the question: 'What is the influence of autonomy, competence, and relatedness, mediated by coproduction in student counselling services, on the psychological wellbeing of students in higher educational institutions in the Netherlands?' This research was conducted in a deductive way, which indicates that there are several hypotheses derived from theory which will be tested. Data was collected quantitatively via online surveys. This method has several advantages, such as that respondents can complete the survey in their own time and at their own pace. Additionally, the data can be directly added to a statistical programme to process it afterwards (Vennix, 2019). The survey was constructed in the online programme Qualtrics. To distribute the survey, several online platforms were used, namely WhatsApp, Facebook and Instagram. Multiple platforms were chosen to reach as many people as possible who belong to the target group. The reason to distribute surveys online is because of regulations of the government regarding the COVID-19 pandemic. Conducting the survey was distributed for six days between April 15<sup>th</sup>, 2022, and April 20<sup>th</sup>, 2022.

# 3.2 Sample

The population of this research consists of all people studying at a higher educational institution (university of applied sciences or university) in the Netherlands or having studied there in the last three years. The reason for this is that students in higher educational institutions have shown to be prone to reduced levels of psychological wellbeing (El Ansari et al., 2011). During their time studying, they need to have had at least one counselling session with a counsellor, dean or study advisor from their institution. To ensure that all respondents meet the criteria mentioned, the following selection questions were asked at the beginning of the survey: 'Are you currently studying or have you within the last three years studied at a higher educational institution (university of applied sciences or university)?' and 'Have you ever had a counselling session with a counsellor, dean or study advisor from your higher educational institution?' These two questions can both be answered with 'Yes' or 'No.' If one or both questions are answered with 'No,' the respondent is excluded from participating in the survey. In addition, to measure the number of counselling sessions have you experienced, the following question was asked: 'How many counselling sessions have you experienced in your higher educational institution?'

This question can be answered with one of the following options: '1,' '2,' '3,' '4,' '5' or 'more than five.'

To ensure the privacy of the respondents, they were asked at the beginning of the survey to consent to the data being processed for the purposes of this study, which will be done anonymously. Moreover, it is mentioned that the survey will be kept confidential.

The sampling method that was chosen for this research is non-probability sampling, which indicates that not everyone in the population has an equal chance of being included in the sample. The disadvantage of using this type of sampling is that people who do not possess a WhatsApp, a Facebook or an Instagram account will not be able to fill in the survey. The type of non-probability sampling method that was chosen for this research is convenience sampling. Convenience sampling allows for easy accessibility to members of the target population who are willing to participate in the survey (Etikan, 2016). Convenience sampling is used to collect sufficient responses to test the hypotheses that are drawn up (Taherdoost, 2016).

To determine the minimum sample size for this research, the following equation is used: N > 50 + 8p. The letter *p* indicates the number of predictors in the research. When applying this to the research, there are four predictors that are considered: the three psychological needs of the Self-Determination Theory and student coproduction. Therefore, the minimum required sample size is N > 50 + (8 x 4) = 82 respondents (Burmeister & Aitken, 2012; Green, 1991). Hence, this research aims to reach 82 respondents to ensure an accurate sample size.

# 3.3 Measurement

#### 3.3.1 Measurement of the independent variables and the mediator

To measure the independent variables autonomy, competence, and relatedness and the mediator student coproduction, the measurement scales of Mende and van Doorn (2015) were used. These scales are applicable, since they focus on the effect of autonomy, competence, and relatedness on consumer coproduction. The scales were adapted to the context of student counselling instead of the financial counselling setting (Mende & van Doorn, 2015). Appendix A presents an overview of the independent variables, the mediator and their concept. Additionally, it shows the definition of the concept and the items with which the concepts are measured. If not indicated differently, the items were measured using a 7-point Likert scale (1 = strongly disagree, 4 = neutral, 7 = strongly agree) (Mende & van Doorn, 2015).

#### 3.3.2 Measurement of the dependent variable

The dependent variable in this research is psychological wellbeing of students. To measure this variable, the five dimensions of the PERMA-model (positive emotions, engagement, positive relationships, meaning, and accomplishment) are used. The items measuring the PERMA-model have been used in previous research and have been shown to give reliable and valid results (Butler & Kern, 2016; Umucu et al., 2019). Appendix B presents an overview of the dependent variable and its concepts. It shows the definition of the concept and the items with which the concept is measured. The items were measured using an 11-point Likert Scale, which allows respondents to indicate a percentage of their psychological wellbeing (Butler & Kern, 2016). Before answering these items, it was made clear that they indicate their psychological wellbeing after having experienced counselling sessions.

#### 3.4 Pre-test survey

Before distributing the final survey, a pre-test survey has been conducted. Since the sample of this research consists of Dutch students, the survey was translated from English to Dutch. To overcome this language barrier, the forward and backward word translation method is used (Heij et al., 1996). To do this, all the scales were translated to Dutch before they were put as a question in the survey.

The pre-test will be conducted to ensure sufficient quality of the survey. A pre-test will improve the validity of the research by ensuring that respondents understand the questions that are being asked and interpret them in the way that was intended by the researcher. It also helps seeing if the questions were translated correctly to Dutch. In total twelve respondents filled in the pre-test survey. After the pre-test, small adjustments were made regarding the interpretation of questions and appearance of the survey. This resulted in the final survey (Appendix C).

#### 3.5 Research ethics

When conducting research it is vital to keep in mind the ethical aspect of the research. Ethics in research focusses on the protection of subjects by ensuring integrity, responsibility and transparency (Rhodes, 2010).

Since respondents are essential to this research they were treated with respect. Participation in this research is fully voluntary; respondents were asked if they are willing to participate before continuing the research. The privacy of the respondents is guaranteed by indicating that the survey can be filled in anonymously. In addition, respondents were free to withdraw from the research at any moment in time. The survey also mentioned that it is part of a research activity conducted by a student studying at Radboud University. The name and contact details of the researcher were stated in the survey to give the respondents the opportunity to contact the researcher with questions or comments.

The results of this research will be reported based on the data that is collected in this research. Results will not be fabricated, nor falsified by the researcher. Finally, the data of the survey will only be used for the purpose of this research.

## 3.6 Reliability and validity

Reliability and validity are important indicators when conducting research (Field, 2018). To ensure both, several measures have been taken.

First, the literature review, concepts and measurement scales that have been used are retrieved from prior scientific research. This prior research has proven the reliability and validity of these measurement scales.

Second, the survey was distributed via the personal network of the researcher, which can result in bias which negatively affects the generalisability and representativity of the results. Respondents may have a similar network, mutual friends or are from the same area as the researcher. To combat this, several channels were chosen to distribute the survey, namely WhatsApp, Facebook, and Instagram. This ensures that a variety of people will fill in the survey and improves the generalisability of the research (Polit & Beck, 2010). To improve the representativity of the research, the aim is to meet the required respondents calculated by the equation of Green (Green, 1991).

Third, to overcome a language barrier for the respondents, the survey was distributed in Dutch. Due to translation the validity of the questions could be affected. To combat this, a pretest survey was conducted, which positively affects the validity of the survey.

Last, to overcome socially desirable answers the survey was conducted with anonymous respondents. This ensures that respondents do not feel inclined to answer the survey with socially acceptable answers.

# 4. Results

## 4.1 Process and sample descriptive

Before distributing the final survey, a pre-test was conducted, which was filled in by twelve respondents. Minor adjustments were made based on translation of some of the variables and the look of the survey. After that, the survey was distributed.

A total of 159 respondents filled in the survey for this research. To participate in this study, it is necessary that the respondent experienced a student counselling session. Respondents that did not meet this criterion were removed. A net sample of 113 respondents remained. Before examining the sample, the items concerning the independent variable *Relatedness* was reverse coded, to make the scores match the positive relationship between the independent variable and the mediator. After that, the sample was analysed.

The ages of the respondents varied from 19 to 29. Most of the respondents were between the age of 21 and 26 (Appendix D, Table 1). 62,8 percent of the respondents were women, 36,3 percent of the respondents were men and 0,9 percent of the respondents were nonbinary (Appendix D, Table 2). Most of the respondents experienced student counselling services in a university of applied sciences (48,7 percent). 43,4 percent experienced student counselling in a university and 8 percent experienced student counselling services in both a university of applied sciences (Appendix D, Table 3). The number of student counselling sessions that students experienced varied between the respondent (Appendix D, Table 4). Table 1 shows the amount of student counselling sessions the respondents experienced.

Amount of student counselling sessions	Frequency	Valid percent
1	24	21,2
2	28	24,8
3	18	15,9
4	14	12,4
5	6	5,3
>5	12	10,6
Do not know	11	9,7

Table 1: Amount of student counselling services experienced

# 4.2 Quality of the data

#### 4.2.1 Discriminant validity

To examine the discriminant validity of the data, a factor analysis was conducted using a principal component analysis with an oblique rotation. Since at least one correlation exceeded

the threshold of >.30, it was sufficient to use the oblique method (Field, 2018; Hair et al., 2019). Furthermore, the Kaiser-Meyer-Olkin (KMO) test should be at least >0.5 and was used as a measure of sampling adequacy (Hair et al., 2019). The KMO of this research is 0,827, indicating that the sample gives an accurate representation of the population. In addition, Bartlett's Test of Sphericity was significant (Appendix E, Table 1). This indicates that sufficient correlations exist among the variables in this research (Hair et al., 2019). The communalities after extraction exceeded the threshold of .20 (Appendix E, Table 2). Looking at the Eigenvalues >1, eight factors were extracted and accounted for 74,031 percent of the variance explained (Appendix E, Table 3). To look further into this analysis, the pattern matrix will be analysed (Appendix E, Table 4). The threshold for a sufficient factor loading is >0,4 (Hair et al., 2019).

## 4.2.1.1 Discriminant validity independent variables and mediator

Looking at the independent variables *Autonomy (AUT), Competence (COMP)*, and *Relatedness (REL)*, it can be seen that they only load high on their own factor and that these loadings exceed the minimum of >.40 (Hair et al., 2019). This indicates that no items regarding these variables had to be removed. After that, the mediating variable *Coproduction (COP)* was analysed. Of the six items five load highly on factor 2. However, COP4 has a cross loader and does not meet the criteria of >.40. Therefore, it will be considered to delete COP4 from this data analysis.

# 4.2.1.2 Second iteration of the factor analysis

Since COP4 does not have a significant loading on its own factor, it is decided to perform a second iteration of the factor analysis, removing this item (Appendix F, Table 1; Appendix F, Table 2). Removing this item causes a lower variance explained (71,407) and results in an analysis that has one component less than the first analysis. Also, deleting this item results in a Cronbach's Alpha of .740, which is lower than the original Cronbach's Alpha of .759 (Appendix F, Table 3; Appendix F, Table 4). Examining the pattern matrix after deleting this item shows that even more items have to be deleted, given that they do not meet the criteria. Since theory is seen as crucial when conducting an analysis, it was decided to keep COP4 as an item. However, it should be considered that this causes a lower discriminant validity for this research.

#### 4.2.1.3 Discriminant validity dependent variables

The first component of the dependent variable, *Positive Emotions (PE)*, only loads high on its own factor and meets the requirement of >.40. The second component of the dependent variable, *Engagement (ENG)*, loads high on its own factor. However, it can also be seen that ENG2 loads highly on another factor. Nevertheless, it does not load as highly on this factor as

it does on their own factor. In addition, it is important to not immediately disregard certain items, since they are based on theory (Field, 2018). Also, the Cronbach's Alpha would decrease from .772 to .642 if this item would be deleted (Appendix E, Table 5). Therefore, it is decided that ENG2 will not be deleted. The items of the third component of the dependent variable, Positive Relationships (PE), also load high on their own factor and meet the minimum requirement, indicating no items had to be removed. Next, the fourth component of the dependent variable, Meaning (MEA), was analysed. This construct does not have a significant loading on one factor, but loads, with varying weights, on several factors. A reason for this could be that the components of the dependent variable all relate strongly to each other, since these five dimensions comprise one model. Because the theory underlying this study is seen as relevant, it is decided that all the items of this component will still be taken into account. However, it should be kept in mind that this component has a lower discriminant validity. Last, the fifth component of the dependent variable, Accomplishment (ACC) is analysed. It can be seen that ACC1 does not have a significant loading on its factor, whereas ACC2 and ACC3 do have significant loadings. However, because of the importance of the theory of the PERMAmodel it is decided that ACC1 will not be removed from further analysis.

## 4.2.2 Convergent validity

To determine the convergent validity of the data, separate factor analyses were conducted for each construct (Appendix G). The explained variance of each construct should be >50 percent, which will indicate the level of one-dimensionality. The KMO should be at least >0,5 and Bartlett's Test of Sphericity should be significant (Hair et al., 2019). Table 2 depicts the eigenvalues per construct and the percentage of variance explained. Only *Coproduction (COP)* shows to have a lower percentage of variance explained than the set threshold. However, since this construct nearly meets the criteria, it was decided to continue the analysis. The KMO and Bartlett's test for all constructs meet the indicated criteria.

	Constructs								
	Autonomy	Competence	Relatedness	Coproduction	Positive	Engagement	Positive	Meaning	Accomplishment
					Emotions		Relationships		
Eigenvalues	1.679	1.602	2.749	2.837	2.638	2.110	2.318	2.452	2.221
% of variance explained	83.928	80.078	68.729	47.291	87.925	70.345	77.258	81.746	74.036

Table 2: Eigenvalues and % of explained variance of the variables in the conceptual model

#### 4.2.3 Reliability

The reliability of each construct was assessed by examining the Cronbach's Alpha (Appendix H). As can be seen in Table 3 each construct has shown a reliability above the recommended threshold of >.70 (Hair et al., 2019). Thus, it can be concluded that all constructs have sufficient reliability to continue further analyses.

	Constructs								
	Autonomy	Competence	Relatedness	Coproduction	Positive	Engagement	Positive	Meaning	Accomplishment
					Emotions		Relationships		
Cronbach's	.808	.750	.844	.759	.930	.772	.852	.888	.822
Alpha									

Table 3: Cronbach's Alpha of the variables in the conceptual model

# 4.3 Assumptions for Multiple Regression Analysis

To be able to use a multiple regression analysis, several assumptions need to be checked.

First, linearity of the phenomenon measured is checked by examining the skewness and kurtosis (Appendix I, Table 1). They lay within the range of -3 and +3, which indicates that they are normally distributed (Hair et al., 2019). Furthermore, no clear pattern can be deducted from the scatterplots examining the relationships in this research (Appendix I, Figure 1; Appendix I, Figure 2). This indicates that the model can be seen as linear.

Second, constant variance of the residuals is examined via the scatterplots (Appendix I, Figure 1; Appendix I, Figure 2). Since the scatterplot does not show a clear pattern, it can be concluded that the data is homoscedastic; the variance of the residuals is constant.

Third, independence of the residuals is checked by examining the mean value and the standard deviation. The mean value is 0.0 and the standard deviation is 1.000 (Appendix I, Table 2; Appendix I, Table 3). This indicates the independence of residuals and that errors do not correlate (Hair et al., 2019). Furthermore, the VIF values should be <10 to ensure that no multicollinearity can be found within the regression analysis, which is the case in this research (Appendix I, Table 4; Appendix I, Table 5; Hair et al., 2019).

Last, normality of the residuals can be seen by looking at the histograms and Normal Probability Plots (Appendix I, Figure 3; Appendix I, Figure 4: Appendix I, Figure 5, Appendix I, Figure 6). From these figures, it can be derived that the data is relatively normally distributed and that the dots all lay around the diagonal line of the Normal Probability Plots. Therefore, this assumption is met; normality of the residuals can be assumed.

# 4.4 Multiple Regression Analysis

#### 4.4.1 Relationship between the independent variables and the mediator

First, a multiple regression analysis was conducted examining the relationship between the independent variables (autonomy, competence, and relatedness) and the mediator (coproduction). The model summary shows that 14,1 percent of coproduction could be explained by autonomy, competence, and relatedness (F(3,109)=7,123, P<.001). The F-test is significant which indicates that there is a significant effect of the independent variable on the mediator (Appendix J, Table 1; Appendix J, Table 2). Table 4 shows that autonomy ( $\beta$ = .406, p=.000) has a positive effect on coproduction and is significant. Competence ( $\beta$ =.067, p=.466) and relatedness ( $\beta$ = -.115, p=.221) do not have a significant relationship with coproduction (Appendix J, Table 3).

Component	Beta	Significance
Autonomy	.406	.000
Competence	.067	.466
Relatedness	115	.221

Table 4: Relationship between autonomy, competence, and relatedness, and coproduction

#### 4.4.2 Relationship between the mediator and the dependent variable

After examining the relationship between the independent variables and the mediator, the relationship between the mediator and the dependent variable was examined. The dependent variable consists of the five dimensions of the PERMA-model, which are comprised together in this analysis. The model summary shows an adjusted R square of -.002 (F(1,111)=.829 P=.364), indicating that coproduction does not have a significant relationship with students' psychological wellbeing (Appendix K).

#### 4.4.3 Hypotheses testing

To test the entire model, a multiple regression analysis was conducted via PROCESS in SPSS (Appendix L). The results of the multiple regression analysis are depicted in Figure 2. Hereafter, all effects displayed in this model will be discussed.



First, Hypothesis 1: Coproduction in student counselling services is positively related to students' psychological wellbeing, was not supported. The data shows that coproduction does not have a significant relationship with students' psychological wellbeing (p = .3880) (Appendix L). Therefore, it must be concluded that hypothesis 1 is not supported (Table 5).

Relationship	R Square	Beta	Std. Error	t	Significance
Coproduction -> Students'	.4174	0941	.1085	8667	.3880
psychological wellbeing					

Table 5: Hypothesis 1: Coproduction in student counselling services is positively related to students' psychological wellbeing

After that, Hypothesis 2: Autonomy has a positive influence on the psychological wellbeing of students via student coproduction, was examined. Autonomy has a statistically significant (p <.001) and positive (.2323) relationship with student coproduction (Appendix L, Table 1). However, the relationship of student coproduction on students' psychological wellbeing is non-significant. Thus, the second hypothesis is not supported (Table 6).

Relationship	R Square	Beta	Std. Error	t	Significance
Autonomy -> Coproduction	.1639	.2323	.0519	4.4788	.0000
Coproduction -> Students'	.4174	0941	.1085	8667	.3880
psychological wellbeing					

Table 6: Hypothesis 2: Autonomy has a positive influence on the psychological wellbeing of students via student coproduction

Next, Hypothesis 3: Competence has a positive influence on the psychological wellbeing of students via student coproduction, was found to be non-significant. Competence does not have a statistically significant (p = .4656) relationship with student coproduction (Appendix L, Table 2). Furthermore, the relationship between coproduction and students' psychological wellbeing is non-significant. Thus, the third hypothesis is not supported (Table 7).

Relationship	R Square	Beta	Std. Error	t	Significance
Competence -> Coproduction	.1639	.0441	.0602	.7323	.4656
Coproduction -> Students'	.4174	0941	.1085	8667	.3880
psychological wellbeing					

Table 7: Hypothesis 3: Competence has a positive influence on the psychological wellbeing of students via student coproduction

Last, Hypothesis 4: Relatedness has a positive influence on the psychological wellbeing of students via student coproduction, was examined. The relationship between relatedness and coproduction is non-significant (p = .2213) (Appendix L, Table 3). In addition, the relationship between coproduction and students' psychological wellbeing is non-significant. Thus, the fourth hypothesis is not supported (Table 8).

Relationship	R Square	Beta	Std. Error	t	Significance
Relatedness -> Coproduction	.1639	0737	.0599	-1.2302	.2213
Coproduction -> Students'	.4174	0941	.1085	8667	.3880
psychological wellbeing					

Table 8: Hypothesis 4: Relatedness has a positive influence on the psychological wellbeing of students via student coproduction

#### 4.4.4 Additional analyses

The hypotheses in this research were found to be non-significant, however, additional analyses could give insightful results. Meeting the three needs of the Self-Determination Theory has shown to lead directly to psychological wellbeing (Ryan & Deci, 2000). It would be interesting to see if this direct effect can also be found within this research concerning students. To examine this, a regression analysis was conducted (Appendix M). Table 9 shows that autonomy, competence, and relatedness have a positive significant influence on students' psychological wellbeing. This implies that people who experience autonomy, competence, and relatedness also demonstrate a higher degree of wellbeing.

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Autonomy -> Students'	.128	.369	.068	4.180	.000
psychological wellbeing					
Competence-> Students'	.299	.553	.070	.6989	.000
psychological wellbeing					
Relatedness -> Students'	.130	.371	.076	.4203	.000
psychological wellbeing					

Table 9: Relationship between autonomy, competence, and relatedness, and students' psychological wellbeing

Since the direct relationship is significant, it would be interesting to see the relationship between autonomy, competence, and relatedness and the individual dimensions of students' psychological wellbeing according to the PERMA-model (Appendix N). The results show that autonomy, competence, and relatedness have a significant relationship with all the individual dimensions of the PERMA-model (Table 10; Table 11; Table 12).

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.091	.315	.084	3.499	.001
Engagement	.077	.292	.087	3.219	.002
Positive Relationships	.115	.351	.089	3.946	.000
Meaning	.086	.308	.094	3.405	.001
Accomplishment	.043	.227	.073	2.451	.016

Table 10: Relationship between autonomy and the different dimensions of the PERMA-Model

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.237	.494	.088	5.982	.000
Engagement	.141	.386	.096	4.408	.000
Positive Relationships	.148	.395	.100	4.525	.000
Meaning	.274	.530	.096	6.576	.000
Accomplishment	.199	.454	.076	5.361	.000

Table 11: Relationship between competence and the different dimensions of the PERMA-Model

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.076	.290	.095	3.194	.002
Engagement	.054	.249	.099	2.714	.008
Positive Relationships	.157	.405	.097	4.672	.000
Meaning	.079	.295	.106	3.253	.002
Accomplishment	.062	.265	.080	2.892	.005

Table 12: Relationship between relatedness and the different dimensions of the PERMA-Model

Coproduction has shown to have a positive effect on psychological wellbeing (Mende & van Doorn, 2015). Even though the data shows non-significant results, it could be that coproduction does have a significant effect on certain aspects of the PERMA-Model. To examine this, a regression analysis was conducted, however, no significant relationship could be found. Also, a regression analysis was conducted examining the relationship between the several items measuring coproduction and students' psychological wellbeing (Appendix O). However, no significant relationship could be found.

# 5. Discussion

## 5.1 Conclusion

The importance of the psychological wellbeing of Dutch students has become an increasingly important research topic over the past couple of years (El Ansari et al., 2011; Sukmana, 2021). To enhance this psychological wellbeing, research describes the positive impact that student counselling services have on the psychological wellbeing of students, which can be measured using the PERMA-model (Kern et al., 2014; Seligman et al., 2011; Vescovelli et al., 2017). The effect of counselling services can be positively influenced by the level of coproduction that one experiences. Self-Determination Theory describes the need for autonomy, competence, and relatedness to enhance this sense of coproduction (Mende & van Doorn, 2015). This research builds on previous research regarding Self-Determination Theory and coproduction but distinguishes itself by examining this relationship in the environment of student counselling services. This has resulted in the following research question:

What is the influence of autonomy, competence, and relatedness, mediated by coproduction in student counselling services, on the psychological wellbeing of students in higher educational institutions in the Netherlands?

To answer this research question four hypotheses were formulated (Table 14). None of the four hypotheses are supported.

The first hypothesis described the relationship between student coproduction in student counselling services and students' psychological wellbeing. Literature showed that coproduction resulted in uplifting changes to make long-lasting improvements to the wellbeing of individuals (Anderson & Ostrom, 2015; Rosenbaum et al., 2011). The success of student counselling heavily depends on the input from students as well as their counsellors (Lusch & Vargo, 2006). However, this study does not show a significant relationship between student coproduction in student counselling services and the psychological wellbeing of students.

The second hypothesis described the relationship between autonomy and student coproduction in student counselling services. According to Self-Determination Theory, experiencing autonomy will result in students actively cooperating with their counsellor and being highly involved in student counselling sessions (Duncan et al., 2020; McKenzie et al., 2015; Vescovelli et al., 2017). A significant relationship was found between the level of autonomy a student experiences and student coproduction. However, the full mediated
relationship was not statistically significant in this study, therefore the hypothesis was not supported.

The third hypothesis described the relationship between competence and student coproduction in student counselling services. According to Self-Determination Theory, experiencing competence will result in students feeling capable to achieve desired results together with their counsellor (Ahn & Back, 2019; Brockelman, 2009; Mende & van Doorn, 2015). However, this study is contrary to what is described in literature about the effect of competence on students' psychological wellbeing, mediated by coproduction. The results in this study were found to not be significant and does therefore not support previous literature.

The fourth hypothesis described the relationship between relatedness and student coproduction in student counselling services. According to Self-Determination Theory, experiencing relatedness indicates that students have a sense of belonging (Brockelman, 2009). This sense of belonging is vital in student counselling services since they can be considered as high-contact services. Therefore, the relationship between students and their counsellors is crucial for the effectiveness of the student counselling services. However, this study does not show any significant relationship between relatedness and the psychological wellbeing of students, mediated by coproduction.

Hypothesis	Description	Result
1	Coproduction in student counselling services is positively related to students' psychological wellbeing	Not supported
2	Autonomy has a positive influence on the psychological wellbeing of students via student coproduction.	Not supported
3	Competence has a positive influence on the psychological wellbeing of students via student coproduction.	Not supported
4	Relatedness has a positive influence on the psychological wellbeing of students via student coproduction.	Not supported

Table 14: Summary results hypotheses

Even though the four hypotheses are not supported, other insights could be derived from the data. Meeting the three needs of the Self-Determination Theory – autonomy, competence, and relatedness – have shown to lead directly to psychological wellbeing (Ryan & Deci, 2000). This study also showed a significant relationship between autonomy, competence, and relatedness and students' psychological wellbeing. In addition, the three needs of the Self-Determination Theory show to have a significant relationship with all the individual dimensions of students' psychological wellbeing. The relationship between coproduction and the individual dimensions of students' psychological wellbeing were examined, but no significant relationship could be found. Last, Mende & van Doorn (2015) show the significant influence that coproduction has on students' psychological wellbeing. Therefore, the relationship between the distinct items of coproduction and students' psychological wellbeing was examined, but no significant relationship was found.

#### 5.2 Discussion

The hypotheses in this study are all not supported; however, literature does substantiate the hypotheses that have been used in this study.

One of the reasons that the hypotheses in this study are not supported could be because of the measurement of all the variables in this research. When conducting research, it is important to ensure that variables are measured as domain specific as possible. Within this research, wellbeing is measured abstractly, looking at the overall wellbeing in life of students. On the contrary, coproduction is measured based on behaviour and the variables of the Self-Determination Theory are measured based on cognition. These variations in measurement could have created distortions in the questionnaire, resulting in insignificant hypotheses.

The operationalisation of coproduction in this research has only been used before in the research of Mende & van Doorn (2015) in the field of financial counselling. It could be that this operationalisation is not suitable for student counselling services. When conducting further literature analysis, Büttgen et al. (2012) take into account the locus of control, which focusses on the degree to which someone expects that reinforcement of their behaviour is dependent on their own behaviour. The amount of locus of control one has depends on previous life experiences; through learning and experiences someone will have more or less motivation to exert control over the service process. They adapted the notions of locus of control, motivation and coproduction to create a more extensive review of the amount of coproduction one experiences. The richness of this review could also enhance this study.

Furthermore, the operationalisation of wellbeing in this research is based on the PERMA-model. This model comprises both hedonic and eudaimonic wellbeing (Kern et al., 2014; Seligman et al., 2011). However, since the results of this research are insignificant, it could be that this model is not suitable for measuring students' psychological wellbeing after experiencing coproduction in student counselling services. Instead, the Subjective Student Wellbeing Questionnaire could be used. This questionnaire is focussed specifically on wellbeing in educational institutions instead of being focused on wellbeing in general (Renshaw

et al., 2015). This could give a more valid description of the wellbeing that students experience based on coproduction within counselling services within their educational institution.

On the contrary, even though the hypotheses of this research are not supported, this study does show a significant effect of autonomy, competence, and relatedness on students' psychological wellbeing. The positive effect of the three needs of the Self-Determination Theory on psychological wellbeing has been shown in many types of research (Ryan & Deci, 2008). This research also shows that when a student experiences autonomy, competence, and relatedness this will have a significant, positive impact on their psychological wellbeing.

Concluding, the insignificant results of this study show that coproduction within student counselling services does not mediate the relationship between autonomy, competence, and relatedness and students' psychological wellbeing. However, since the positive effect of coproduction is described extensively within literature it is important to not directly disregard this. In addition, this study also shows the significant effect on autonomy, competence, and relatedness and the Self-Determination Theory. It would be beneficial to conduct this study again, taking into account the limitations that have been mentioned. After that, a definite conclusion can be drawn regarding the mediating effect of coproduction on the relationship between autonomy, competence, and students' psychological wellbeing.

#### 5.3 Theoretical implications

After testing the hypotheses in this research no significant effect between coproduction and students' psychological wellbeing has been found. Besides that, the results only show a small significant effect between autonomy and coproduction. No significant effect between competence and relatedness and coproduction has been found. One could question the positive impact that the coproduction process between student and counsellor has on the psychological wellbeing of students. However, since the positive impact of coproduction on psychological wellbeing has been shown in previous research, this should not be disregarded directly.

On the contrary, this research does add to the literature regarding the Self-Determination Theory. Even though the hypotheses in this study are rejected, the data does show a significant effect between the three needs of the Self-Determination Theory – autonomy, competence, and relatedness – and students' psychological wellbeing. The effect of these three needs on psychological wellbeing has been tested in several types of research (Moller et al., 2006; Seligman et al., 2011). This research adds to the literature since it measures the needs among students within a counselling setting, which has not been tested before. Autonomy, competence,

and relatedness also have a significant effect on all the individual dimensions of the PERMAmodel. This shows that there is a strong significant relationship between the Self-Determination Theory and the PERMA-model, which adds significantly to the literature about these two concepts.

#### 5.4 Practical implications

Since the hypotheses show non-significant results, the mediating effect of coproduction within student counselling services on the psychological wellbeing of students remains doubtful.

However, even though many of the results of this study are non-significant, the additional analyses give insightful results. The data show that fostering an environment in which autonomy, competence, and relatedness can be experienced is important when conducting a student counselling session. Students face lots of stresses that can result in a low academic performance, but also lead to several health issues (El Ansari et al., 2011). Student counselling services are created to help students in these kinds of situations. This research shows the importance of the direct and positive effect of experiencing autonomy, competence, and relatedness on the psychological wellbeing of students. Therefore, it is important for student counsellors to take this into account when conducting a student counselling session. This starts with the counsellor ensuring the students' internal frame of reference; having respect for the situation and experiences of the student. Furthermore, it includes trusting the students' capacity to articulate their problems and facilitating a process in which the student can self-regulate their actions, instead of the counsellor imposing their own ideas on them. Fostering this environment in which autonomy, competence, and relatedness is experienced will lead to internalisation and a change in the behaviour of the student, which will reduce the negative symptoms that the student is experiencing (Ryan & Deci, 2008).

### 5.5 Limitations and recommendations for further research

The limitations in this research point to avenues for further research.

First, the sample of the research included students who had experienced a meeting with, amongst others, a study advisor or study counsellor. However, the sample would have been more accurate if only students who experienced a trajectory of student counselling sessions were included. This would have resulted in a more accurate representation of the effects of student counselling services. In addition, this study takes into account all students who have experienced a student counselling session and people that experienced a student counselling session and graduated within the last three years. To improve the results of this study the time frame in which a student received a counselling session could be reduced. Therefore, if further research is conducted, it could be done in cooperation with study advisors from higher educational institutions. This allows the researcher to get access to a more specific target group, which would positively affect the reliability of the research. Besides that, the sample size in this study was large enough to conduct the analysis, however, still relatively small. This could have caused the hypotheses to be rejected. Therefore, a new study could be conducted in which a larger sample size would be recruited.

Second, the operationalisation of coproduction within this research is based on the research of Mende & van Doorn (2015) concerning coproduction in financial counselling. This is the only research in which coproduction has been operationalised in this way. Since this research shows non-significant results concerning the effect of coproduction, it would be interesting to use other operationalisations of coproduction, such as the analysis of Büttgen et al. (2012), who takes into account locus of control and motivation together with coproduction. This broader notion of coproduction could be beneficial for this research and would thus be interesting to include if this research would be conducted again.

Third, the psychological wellbeing of students is studied using the PERMA-model, which comprises hedonic and eudaimonic wellbeing (Kern et al., 2014; Seligman et al., 2011). However, there still is a constant debate as to how wellbeing should be conceptualised and measured. Besides that, since the results of this research show to be non-significant, it could be useful to adapt a questionnaire that is more focused on wellbeing in educational institutions. The Subjective Student Wellbeing Questionnaire was specifically developed to focus on wellbeing of students instead of general wellbeing (Renshaw et al., 2015). Therefore, it would be interesting to use this questionnaire when conducting further research.

Last, this research was conducted with students from the Netherlands. It would be interesting to see what results this research would give in other countries with different cultures. Culture has shown to affect interpersonal communication. Furthermore, the power distance that is present within a culture can determine the amount of coproduction within a service. A higher power distance can result in students making themselves feel powerless within these sorts of interactions (Suyono et al., 2020). Since the Netherlands has a relatively low power distance, there is a higher chance that a student feels more comfortable in coproducing a counselling session together with their counsellor in comparison to someone from a high power distance country (Arends-Tóth & Van de Vijver, 2009; Suyono et al., 2020). Therefore, it would be interesting to conduct this research within a country that has a relatively high power distance.

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# Appendices

Appendix A. Construct definitions independent variables and inculator	Appendix A: Construct	definitions independent	variables and	mediator
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Independent Variable	Definition	Items
Autonomy	The feeling of engaging in a	1. To me, student counselling
(Involvement)	specific action in which one	services are $(1 = unimportant,$
	acts volitionally and willingly	7 = important)
	(Duncan et al., 2020;	2. To me, student counselling
	Engström & Elg, 2015;	services are $(1 = not essential,$
	Ntoumanis & Standage,	7 = essential)
	2009).	(Mende & van Doorn, 2015).
Competence	The intrinsic desire to feel	1. I am confident dealing with
(Literacy)	effective in interacting with	personal matters
	the environment and having a	2. I am confident discussing my
	sense of self-efficacy	personal matters with my
	(Engström & Elg, 2015;	counsellor
	Raven & Pels, 2021;	(Mende & van Doorn, 2015).
	Véronneau et al., 2005).	
Relatedness	The need to care and feel	1. I worry about being neglected
(Attachment anxiety	cared for, and to form deep,	by my counsellor as a student
and attachment	meaningful relationships with	2. My counsellor changes how
avoidance)	others in which trust is an	they treat me for no apparent
	essential component	reason
	(Brockelman, 2009; Duncan	3. I worry that my counsellor does
	et al., 2020; Ntoumanis &	not really appreciate me as a
	Standage, 2009).	student
		4. I worry that my counsellor does
		not care about me as much as I
		care about them
		(Mende & van Doorn, 2015).

Student Coproduction	Students' active participation	1. I prepare myself (and
	in the creation of the	documents, etc.) before
	counselling service (Lusch &	meeting with my counsellor
	Vargo, 2006).	2. I try to work cooperatively with
		my counsellor
		3. I do things to make my
		counsellors job easier
		4. I openly discuss my personal
		situation with my counsellor to
		help them find the best solution
		for me
		5. I perform tasks to help my
		counsellor serve me better
		6. I fully cooperate with my
		counsellor
		(Mende & van Doorn, 2015).

# Appendix B: Construct definitions dependent variable

Dimension of	Definition	Items
nsychological		
wellbeing		
wendenig		
Positive emotions	An indication of hedonic feelings	1. In general, how often do you feel joyful?
	where one experiences feelings of	0 = never, 10 = always
	joy, positivity, and satisfaction	2. In general, how often do you feel positive?
	(Giangrasso, 2018; Kern et al.,	0 = never, 10 = always
	2014).	3. In general, to what extent do you feel
		contented?
		0 = not at all, 10 = completely
		(Butler & Kern, 2016; Umucu et al., 2019).
Engagement	A psychological connection to	1. How often do you become absorbed in what
	certain activities or organisations in	you are doing?
	which one is highly invested (Kern	0 = never, 10 = always
	et al., 2014; Seligman et al., 2011;	2. In general, to what extent do you feel excited
	Umucu et al., 2019).	and interested in things?
		0 = not at all, 10 = completely
		3. How often do you lose track of time while
		doing something you enjoy?
		0 = never, 10 = always
		(Butler & Kern, 2016; Umucu et al., 2019).
Positive	Feeling socially integrated and	1. To what extent do you receive help and support
relationships	having connections with others in	from others when you need it?
	which one feels cared about and	0 = not at all, 10 = completely
	supported (Goh et al., 2021; Kern et	2. To what extent do you feel loved?
	al., 2014; Seligman et al., 2011;	0 = not at all, 10 = completely
	Umucu et al., 2019).	3. How satisfied are you with your personal
		relationships?
		0 = not at all, 10 = completely
		(Butler & Kern, 2016: Umucu et al., 2019).

Meaning	Having a sense of purpose in life	1. In general, to what extent do you lead a
	which is derived from something	purposeful and meaningful life?
	greater than the self (Giangrasso,	0 = not at all, 10 = completely
	2018; Kern et al., 2014; Seligman et	2. In general, to what extent do you feel that what
	al., 2011; Umucu et al., 2019;	you do in your life is valuable and worthwhile?
	Wammerl et al., 2019).	0 = not at all, 10 = completely
		3. To what extent do you generally feel you have a
		sense of direction in your life?
		0 = not at all, 10 = completely
		(Butler & Kern, 2016; Umucu et al., 2019).
Accomplishment	The perception of achievement or	1. How much of the time do you feel you are
	success, feeling capable to do	making progress towards accomplishing your
	certain activities and making	goals?
	progress towards reaching goals	0 = never, 10 = always
	(Goh et al., 2021; Kern et al., 2014;	2. How often do you achieve the important goals
	Seligman et al., 2011; Umucu et al.,	that you have set for yourself?
	2019).	0 = never, 10 = always
		3. How often are you able to handle your
		responsibilities?
		0 = never, 10 = always
		(Butler & Kern, 2016; Umucu et al., 2019).

### Appendix C: Survey

Beste deelnemer,

Bedankt dat u de tijd wilt nemen om deze enquête in te vullen. Mijn naam is Anouk Litan en ik ben masterstudente Business Administration (marketing) aan de Radboud Universiteit Nijmegen. Voor mijn masterscriptie doe ik onderzoek naar het welzijn onder studenten van hogescholen en universiteiten.

Het invullen van deze enquête duurt ongeveer 5 minuten. De onderzoeksgegevens zullen anoniem worden vastgelegd en veilig opgeslagen volgens de richtlijnen voor het beheer van onderzoeksgegevens van de Radboud Universiteit en conform de Algemene Verordening Gegevensbescherming (AVG). Uw resultaten worden uitsluitend gebruikt voor deze masterscriptie. Daarnaast is het invullen van deze enquête vrijwillig en kunt u op ieder gewenst moment stoppen. Mocht u vragen of opmerkingen hebben, neem dan gerust contact met mij op via het volgende emailadres: anouk.litan@student.ru.nl

Door hieronder "Ja, ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven" te selecteren geeft u aan dat:

- U deze informatie hebt gelezen en begrepen;
- U vrijwillig instemt met deelname;
- U beseft dat u op elk moment kunt stoppen met dit onderzoek.

Als u niet wilt deelnemen aan dit onderzoek, kunt u de deelname weigeren door hieronder "Nee, ik ga niet akkoord met deelname aan het onderzoek" te selecteren.

Alvast hartelijk bedankt voor uw hulp.

Met vriendelijke groet, Anouk Litan

- Ja ik ga akkoord met deelname aan het onderzoek zoals hierboven beschreven.
- Nee, ik ga niet akkoord met deelname aan het onderzoek.
- 1. Bent u momenteel aan het studeren of heeft u in de afgelopen drie jaar gestudeerd aan een instelling voor hoger onderwijs (HBO of universiteit)?
  - Ja
  - Nee (einde survey)
- 2. Heeft u ooit een studiebegeleidingsgesprek gehad met een studiebegeleider, decaan, studieadviseur of dergelijke binnen uw instelling voor hoger onderwijs?
  - Ja
  - Nee (einde survey)
- 3. In welke onderwijsinstelling heeft u te maken gehad met studiebegeleiding?
  - HBO
  - Universiteit

- Beide
- 4. Hoeveel studiebegeleidingssessies heeft u gehad gedurende uw studie binnen het hoger onderwijs?
  - 1
  - 2
  - 3
  - 4
  - 5
  - Meer dan 5
  - Dit weet ik niet meer

### Vragen over autonomie

De volgende stellingen vallen onder de categorie autonomie en gaan over uw mening aangaande studiebegeleidingsservices. U kunt deze invullen op een schaal van 1 tot 7.

- 1. Hoe belangrijk zijn studiebegeleidingsservices voor u (1 = onbelangrijk, 7 = belangrijk).
- 2. Hoe essentieel zijn studiebegeleidingsservices voor u (1 = niet essentieel, 7 = essentieel).

### Vragen over competentie

De volgende stellingen gaan over uw gevoel van competentie wanneer het aankomt op persoonlijke kwesties. U kunt deze invullen op een schaal van helemaal oneens tot helemaal mee eens.

- 1. Ik ben zelfverzekerd wanneer ik moet omgaan met persoonlijke kwesties (1 = helemaal oneens, 7 = helemaal eens).
- 2. Ik ben zelfverzekerd wanneer ik mijn persoonlijke kwesties bespreek met mijn studiebegeleider (1 = helemaal oneens, 7 = helemaal eens).

### Vragen over relatie

De volgende stellingen gaan over uw relatie met uw studiebegeleider. U kunt deze invullen op een schaal van helemaal oneens tot helemaal eens.

- Ik maak me zorgen dat ik als student word verwaarloosd door mijn studiebegeleider (1 = helemaal oneens, 7 = helemaal eens).
- 2. Mijn studiebegeleider verandert de manier waarop hij/zij me behandelt zonder duidelijke reden (1 = helemaal oneens, 7 = helemaal eens).
- 3. Ik maak me zorgen dat mijn studiebegeleider mij niet waardeert als student (1 = helemaal oneens, 7 = helemaal eens).

4. Ik maak me zorgen dat mijn studiebegeleider niet zoveel om mij geeft als ik om hem/haar (1 = helemaal oneens, 7 = helemaal eens).

### Vragen over coproductie

De volgende stellingen gaan over de mate van coproductie die u ervaart gedurende een studiebegeleidingsgesprek. U kunt deze invullen op een schaal van helemaal oneens tot helemaal eens.

- 1. Ik bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider (1 = helemaal oneens, 7 = helemaal eens).
- 2. Ik probeer samen te werken met mijn studiebegeleider (1 = helemaal oneens, 7 = helemaal eens).
- 3. Ik onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken (1 = helemaal oneens, 7 = helemaal eens).
- 4. Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden (1 = helemaal oneens, 7 = helemaal eens).
- 5. Ik voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn (1 = helemaal oneens, 7 = helemaal eens).
- 6. Ik werk volledig mee met mijn studiebegeleider (1 = helemaal oneens, 7 = helemaal eens).

### Vragen over positieve emoties

De volgende stellingen gaan over de mate van positieve emoties die u in het algemeen ervaart. U kunt deze invullen op een schaal van 0 tot 10.

- 1. Hoe vaak voelt u zich in het algemeen blij? (0 = nooit, 10 = altijd).
- 2. Hoe vaak voelt u zich in het algemeen positief? (0 = nooit, 10 = altijd).
- 3. In hoeverre voelt u zich in het algemeen tevreden? (0 = nooit, 10 = altijd).

### Vragen over betrokkenheid

De volgende stellingen gaan over de mate van betrokkenheid die u in het algemeen ervaart. U kunt deze invullen op een schaal van 0 tot 10.

- 1. Hoe vaak gaat u op in wat u doet? (0 = nooit, 10 = altijd).
- 2. In hoeverre voelt u zich in het algemeen opgewonden over en geïnteresseerd in dingen? (0 = helemaal niet, 10 = helemaal wel)

3. Hoe vaak verliest u de tijd uit het oog terwijl u iets doet dat u leuk vindt? (0 = nooit, 10 = altijd).

### Vragen over positieve relaties

De volgende stellingen gaan over de mate van positieve relaties die u in het algemeen ervaart. U kunt deze invullen op een schaal van 0 tot 10.

- 1. In hoeverre krijgt u hulp en steun van anderen wanneer u dit nodig heeft? (0 = helemaal niet, 10 = helemaal wel).
- 2. In hoeverre voelt u zich geliefd? (0 = helemaal niet, 10 = helemaal wel).
- 3. In hoeverre bent u tevreden met uw persoonlijke relaties? (0 = helemaal niet, 10 = helemaal wel).

### Vragen over betekenis in het leven

De volgende stellingen gaan over de mate van betekenis in het leven die u in het algemeen ervaart. U kunt deze invullen op een schaal van 0 tot 10.

- 1. In hoeverre leidt u in het algemeen een doelbewust leven? (0 = helemaal niet, 10 = helemaal wel).
- 2. In hoeverre vindt u in het algemeen dat wat u doet in uw leven waardevol en de moeite waard is? (0 = helemaal niet, 10 = helemaal wel).
- 3. In hoeverre heeft u in het algemeen het gevoel dat u een mate van richting in het leven heeft? (0 = helemaal niet, 10 = helemaal wel).

### Vragen over bekwaamheid

De volgende stellingen gaan over de mate van bekwaamheid die u in het algemeen ervaart. U kunt deze invullen op een schaal van 0 tot 10.

- 1. Hoe vaak heeft u het gevoel dat u vooruitgang boekt in het bereiken van uw doelen? (0 = nooit, 10 = altijd).
- 2. Hoe vaak heeft u de belangrijke doelen die u voor uzelf heeft gezet bereikt? (0 = nooit, 10 = altijd).
- 3. In hoeverre neemt u over het algemeen verantwoordelijkheid om uw doelen te bereiken? (0 = nooit, 10 = altijd).

### Vragen over demografische gegevens

- 1. Wat is uw leeftijd? (open vraag)
- 2. Met welke geslacht identificeert u zich?
  - Vrouw

- Man
- Non-binair
- Anders / zeg ik liever niet

### **Einde survey**

Hartelijk dank voor uw deelname aan mijn enquête! Dankzij uw antwoorden wordt er meer inzicht verschaft in het welzijn van studenten in hogere onderwijsinstellingen. Indien u vragen heeft of de onderzoeksresultaten graag zou willen inzien kunt u mij contacteren via het volgende emailadres: anouk.litan@student.ru.nl.

# Appendix D: Sample descriptive

Age (in numbers)	Frequency	Percent	Cumulative
			percent
19	1	0,9	0,9
20	7	6,2	7,1
21	12	10,6	17,7
22	20	17,7	35,4
23	29	25,7	61,1
24	19	16,8	77,9
25	6	5,3	83,2
26	11	9,7	92,9
27	4	3,5	96,5
28	3	2,7	99,1
29	1	0,9	100,0

Table 1: Age distribution

Table 2: Gender distribution

Gender	Frequency	Percent	Cumulative percent
Female	71	62,8	62,8
Male	41	36,3	99,1
Non-binary	1	0,9	100
Rather not say	0	0	0

*Table 3: Type of higher educational institution in which the respondent experienced student counselling services* 

Type of higher educational institution	Frequency	Percent	Cumulative percent
University of Applied Sciences (HBO)	55	48,7	48,7
University	49	43,4	92,0

Both	9	8,0	100,0

Table 4:	Number	of student	counselling	sessions
100000	1	<i>cj since</i>	000000000000	500000000

Number of student counselling sessions	Frequency	Percent	Cumulative percent
1	24	21,2	21,2
2	28	24,8	46,0
3	18	15,9	61,9
4	14	12,4	74,3
5	6	5,3	79,6
>5	12	10,6	90,3
Don't know anymore	11	9,7	100,0

# Appendix E: Factor analysis iteration 1

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure	,827			
Bartlett's Test of Sphericity	Approx. Chi-Square	2091,115		
	Df	406		
	Sig.	,000		

### KMO and Bartlett's Test

### Table 2: Communalities

Communalities	<b>i</b>
Hoe belangrijk zijn	1,000
studiebegeleidingsservic es voor u? Hoe essentieel ziin	1,000
studiebegeleidingsservic es voor u?	1,000
ik ben zeitverzekerd wanneer ik moet omgaan met persoonlijke kwesties	1,000
Ik ben zelfverzekerd wanneer ik mijn persoonlijke kwesties bespreek met mijn studiebegeleider	1,000
lk maak me zorgen dat ik als student wordt verwaarloosd door mijn studiebegeleider	1,000
Mijn studiebegeleider verandert de manier waarop hij/zij mij behandelt zonder duidelijke reden	1,000
lk maak me zorgen dat mijn studiebegeleider mij niet waardeert als student	1,000
lk maak me zorgen dat mijn studiebegeleider niet zoveel om mij geeft als ik om hem/haar	1,000
Ik bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider	1,000
lk probeer samen te werken met mijn studiebegeleider	1,000
lk onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken	1,000
Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden	1,000
lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn	1,000
lk werk volledig mee met mijn studiebegeleider	1,000
Hoe vaak voelt u zich in het algemeen blii?	1,000
Hoe vaak voelt u zich in het algemeen positief?	1,000
In hoeverre voelt u zich in het algemeen tevreden?	1,000
Hoe vaak gaat u op in wat	1,000
In hoeverre voelt u zich in het algemeen opgewonden over en geïnteresseerd in dingen?	1,000
Hoe vaak verliest u de tijd uit het oog terwijl u iets doet dat u leuk vindt?	1,000
In hoeverre krijgt u hulp en steun van anderen wanneer u dit nodig heeft?	1,000
In hoeverre voelt u zich geliefd?	1,000
In hoeverre bent u tevreden met uw persoonlijke relaties?	1,000
In hoeverre leidt u in het algemeen een doelbewust leven?	1,000
In hoeverre vindt u in het algemeen dat wat u doet in uw leven waardevol en de moeite waard is?	1,000
In hoeverre heeft u in het algemeen het gevoel dat u een mate van richting in het leven heeft?	1,000
Hoe vaak heeft u het gevoel dat u vooruitgang boekt in het bereiken van uw doelen?	1,000
Hoe vaak heeft u de belangrijke doelen die u voor uzelf heeft gezet bereikt?	1,000
In hoeverre neemt u over het algemeen verantwoordelijkheid om uw doelen te bereiken?	1,000
Extraction Method: Principal Component Analysis.	

				Rotation Sums
				of Squared
		Loadings <sup>a</sup>		
Component	Total	% of Variance	Cumulative %	Total
1	9,531	32,864	32,864	5,874
2	3,257	11,232	44,096	2,718
3	2,484	8,566	52,662	3,784
4	1,479	5,100	57,762	4,434
5	1,347	4,645	62,408	3,012
6	1,274	4,393	66,800	2,935
7	1,093	3,769	70,570	3,732
8	1,004	3,462	74,031	5,851
9	,905	3,120	77,151	
10	,788	2,716	79,868	
11	,649	2,238	82,105	
12	,569	1,962	84,067	
13	,523	1,805	85,872	
14	,468	1,612	87,484	
15	,429	1,481	88,965	
16	,402	1,386	90,351	
17	,362	1,247	91,598	
18	,343	1,183	92,781	
19	,305	1,052	93,833	
20	,282	,971	94,804	
21	,269	,926	95,730	
22	,235	,809	96,539	
23	,232	,798	97,337	
24	,206	,712	98,049	
25	,162	,558	98,607	
26	,129	,446	99,053	
27	,123	,425	99,479	
28	,079	,272	99,751	
29	,072	,249	100,000	

### **Total Variance Explained**

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added

to obtain a total variance.

### Table 4: Pattern matrix

		2	2	Compo	nent	c	7	
Hoe belangrijk zijn	1	2	3	4	-,876	0	/	- 0
studiebegeleidingsservic es voor u?								
Hoe essentieel zijn studiebegeleidingsservic es voor u?					-,869			
Ik ben zelfverzekerd wanneer ik moet omgaan met persoonlijke	,358					,656		
kwesties Ik ben zelfverzekerd wanneer ik mijn persoonlijke kwesties						,805		
studiebegeleider								
lk maak me zorgen dat ik als student wordt verwaarloosd door mijn studiebegeleider			,744	,277				
Mijn studiebegeleider verandert de manier waarop hij/zij mij behandelt zonder duidelijke reden			,787		,233			
lk maak me zorgen dat mijn studiebegeleider mij niet waardeert als student			,826					
lk maak me zorgen dat mijn studiebegeleider niet zoveel om mij geeft als ik om hem/haar			,818					
lk bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider		,845				-,233		
lk probeer samen te werken met mijn studiebegeleider		,646			-,366			
lk onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken	-,233	,413			-,220	,344		
Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden	-,278	,215			-,320	,486		,20
lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn		,525		-,231			-,395	
lk werk volledig mee met mijn studiebegeleider		,678				,273		
Hoe vaak voelt u zich in het algemeen blij?	,857							
Hoe vaak voelt u zich in het algemeen positief?	,791							
In hoeverre voelt u zich in het algemeen tevreden? )	,832							
Hoe vaak gaat u op in wat u doet?	,278						-,651	
In hoeverre voelt u zich in het algemeen opgewonden over en geïnteresseerd in dingen?	,442						-,487	
Hoe vaak verliest u de tijd uit het oog tenwijl u iets doet dat u leuk vindt?							-,800	
In hoeverre krijgt u hulp en steun van anderen wanneer u dit nodig heeft?								,80
In hoeverre voelt u zich geliefd?								,77
In hoeverre bent u tevreden met uw persoonlijke relaties?								,79
In hoeverre leidt u in het algemeen een doelbewust leven?				,427				,36
In hoeverre vindt u in het algemeen dat wat u doet in uw leven waardevol en de moeite waard is?	,382			,302			-,283	
In hoeverre heeft u in het algemeen het gevoel dat u een mate van richting in het leven heeft?	,342					,209	-,203	,35
Hoe vaak heeft u het gevoel dat u vooruitgang boekt in het bereiken van uw doelen?	,200			,349			-,247	,34
Hoe vaak heeft u de belangrijke doelen die u voor uzelf heeft gezet bereikt?				,758				
In hoeverre neemt u over het algemeen verantwoordelijkheid om				,900				

# Table 5: Cronbach's Alpha Engagement

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted			
Hoe vaak gaat u op in wat u doet?	14,30	7,587	,671	,629			
In hoeverre voelt u zich in het algemeen opgewonden over en geïnteresseerd in dingen?	14,10	7,785	,663	,642			
Hoe vaak verliest u de tijd uit het oog terwijl u iets doet dat u leuk vindt?	14,38	6,791	,521	,821			

### Item-Total Statistics

# Appendix F: Factor analysis iteration 2

## Table 1: Total Variance Explained

		Initial Eigenvalu	les	Rotation Sums of Squared Loadings <sup>a</sup>	
Component	mponent Total % of Variance Cumulative %				
1	9,485	33,875	33,875	6,976	
2	2,931	10,469	44,345	2,728	
3	2,447	8,741	53,085	4,291	
4	1,465	5,233	58,318	5,812	
5	1,346	4,809	63,126	2,830	
6	1,229	4,390	67,516	1,859	
7	1,089	3,890	71,407	3,178	
8	,965	3,446	74,853		
9	,895	3,196	78,049		
10	,682	2,436	80,485		
11	,597	2,133	82,618		
12	,568	2,027	84,645		
13	,523	1,867	86,512		
14	,468	1,670	88,182		
15	,425	1,517	89,699		
16	,369	1,319	91,018		
17	,343	1,225	92,243		
18	,331	1,180	93,423		
19	,283	1,011	94,434		
20	,269	,959	95,394		
21	,241	,861	96,254		
22	,233	,832	97,086		
23	,207	,741	97,827		
24	,168	,598	98,426		
25	,161	,576	99,002		
26	,128	,458	99,459		
27	,079	,282	99,741		
28	,072	,259	100,000		

#### Total Variance Explained

Extraction Method: Principal Component Analysis.

a. When components are correlated, sums of squared loadings cannot be added to obtain a total variance.

### Table 2: Pattern matrix

		rauer	n matrix	·			
	1	2	3	omponent 4	5	6	7
Hoe belangrijk zijn studiebegeleidingsservic es voor u?			-,204		-,853		
Hoe essentieel zijn studiebegeleidingsservic es voor u?					-,864		
Ik ben zelfverzekerd wanneer ik moet omgaan met persoonlijke kweeties	,438			,205		,611	
Ik ben zelfverzekerd wanneer ik mijn persoonlijke kwesties bespreek met mijn studiebeneleider	,250					,720	
lk maak me zorgen dat ik als student wordt verwaarloosd door mijn studiebegeleider			,819				
Mijn studiebegeleider verandert de manier waarop hij/zij mij behandelt zonder duidelijke reden			,762		,229		
lk maak me zorgen dat mijn studiebegeleider mij niet waardeert als student			,847				
lk maak me zorgen dat mijn studiebegeleider niet zoveel om mij geeft als ik om hem/haar			,853				
lk bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider		,732			,221	-,223	
lk probeer samen te werken met mijn studiebegeleider		,661			-,341		
lk onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken	-,211	,561			-,231	,271	
lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn		,597		-,261			-,362
lk werk volledig mee met mijn studiebegeleider		,785					
Hoe vaak voelt u zich in het algemeen blij?	,891						
Hoe vaak voelt u zich in het algemeen positief?	,842						
In hoeverre voelt u zich in het algemeen tevreden? )	,873						
Hoe vaak gaat u op in wat u doet?	,251						-,670
In hoeverre voelt u zich in het algemeen opgewonden over en geïnteresseerd in dingen?	,444						-,501
Hoe vaak verliest u de tijd uit het oog terwijl u iets doet dat u leuk vindt?							-,711
In hoeverre krijgt u hulp en steun van anderen wanneer u dit nodig heeft?	,326	,305	-,281	,382		-,283	
In hoeverre voelt u zich geliefd?	,521			,420			
In hoeverre bent u tevreden met uw persoonlijke relaties?	,398			,520			
In hoeverre leidt u in het algemeen een doelbewust leven?	,257			,598			
In hoeverre vindt u in het algemeen dat wat u doet in uw leven waardevol en de moeite waard is?	,416			,349			-,270
In hoeverre heeft u in het algemeen het gevoel dat u een mate van richting in het leven heeft?	,509			,355			
Hoe vaak heeft u het gevoel dat u vooruitgang boekt in het bereiken van uw doelen?	,348			,518			-,217
Hoe vaak heeft u de belangrijke doelen die u voor uzelf heeft gezet bereikt?				,623			-,277
In hoeverre neemt u over het algemeen verantwoordelijkheid om uw doelen te bereiken?	-,235			,895			

Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization. a. Rotation converged in 17 iterations.

## Table 3: Cronbach's Alpha

## Reliability Statistics

Cronbach's Alpha	N of Items
,759	6

### Table 4: Item-total statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
lk bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider	26,15	16,236	,357	,762
lk probeer samen te werken met mijn studiebegeleider	25,84	15,599	,613	,701
lk onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken	26,58	15,156	,510	,721
Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden	26,01	14,295	,465	,740
lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn	26,06	14,791	,541	,712
lk werk volledig mee met mijn studiebegeleider	25,68	15,880	,596	,706

## Item-Total Statistics
## Appendix G: Separate factor analyses

Table 1: KMO and Bartlett's Test and Total Variance Explained of autonomy

KMO ar	nd Bartlett's Test	
Kaiser-Meyer-Olkin Measure of	of Sampling Adequacy.	,500
Bartlett's Test of Sphericity Approx. Chi-Square		68,233
	Df	1
	Sig.	,000

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1,679	83,938	83,938
2	,321	16,062	100,000

Extraction Method: Principal Component Analysis.

Table 2: KMO and Bartlett's Test and Total Variance Explained of competence

### **KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,500
artlett's Test of Sphericity Approx. Chi-Square		49,637
	df	1
	Sig.	,000

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	1,602	80,078	80,078
2	,398	19,922	100,000

## Table 3: KMO and Bartlett's Test and Total Variance Explained of relatedness

KMO ar	nd Bartlett's Test	
Kaiser-Meyer-Olkin Measure of	,771	
Bartlett's Test of Sphericity Approx. Chi-Square		193,079
	df	6
	Sig.	,000

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,749	68,729	68,729
2	,588	14,707	83,436
3	,387	9,684	93,120
4	,275	6,880	100,000

Extraction Method: Principal Component Analysis.

## Table 4: KMO and Bartlett's Test and Total Variance Explained of coproduction

KMO ar		
Kaiser-Meyer-Olkin Measure c	f Sampling Adequacy.	,810
Bartlett's Test of Sphericity	Approx. Chi-Square	153,869
	Df	15
	Sig.	,000

### **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,837	47,291	47,291
2	,931	15,519	62,811
3	,684	11,396	74,207
4	,590	9,835	84,041
5	,487	8,123	92,165
6	,470	7,835	100,000

## Table 5: KMO and Bartlett's Test and Total Variance Explained of positive emotions

KMO ar	nd Bartlett's Test	
Kaiser-Meyer-Olkin Measure of	,737	
Bartlett's Test of Sphericity Approx. Chi-Square		281,938
	Df	3
	Sig.	,000

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,638	87,925	87,925
2	,240	8,003	95,928
3	,122	4,072	100,000

Extraction Method: Principal Component Analysis.

Table 6: KMO and Bartlett's Test and Total Variance Explained of engagement

### KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,666
Bartlett's Test of Sphericity	ett's Test of Sphericity Approx. Chi-Square	
	Df	3
	Sig.	,000

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,110	70,345	70,345
2	,586	19,534	89,879
3	,304	10,121	100,000

## Table 7: KMO and Bartlett's Test and Total Variance Explained of positive relationships

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,679
Bartlett's Test of Sphericity Approx. Chi-Square		165,088
	Df	3
	Sig.	,000

### **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,318	77,258	77,258
2	,482	16,080	93,338
3	,200	6,662	100,000

Extraction Method: Principal Component Analysis.

## Table 8: KMO and Bartlett's Test and Total Variance Explained of meaning

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure c	,744	
Bartlett's Test of Sphericity Approx. Chi-Square		188,432
	Df	3
	Sig.	,000

### **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,452	81,746	81,746
2	,309	10,305	92,052
3	,238	7,948	100,000

## Table 9: KMO and Bartlett's Test and Total Variance Explained of accomplishment

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		,684
Bartlett's Test of Sphericity Approx. Chi-Square		129,844
	Df	3
	Sig.	,000

#### **KMO** and Bartlott's Tost

## **Total Variance Explained**

	Initial Eigenvalues		
Component	Total	% of Variance	Cumulative %
1	2,221	74,036	74,036
2	,504	16,804	90,839
3	,275	9,161	100,000

## Appendix H: Reliability analysis

Table 1: Cronbach's Alpha of autonomy

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,808,	2	

Table 2: Cronbach's Alpha of competence

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,750	2	

Table 3: Cronbach's Alpha of relatedness

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,844	4	

Table 4: Cronbach's Alpha of coproduction

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,759	6	

Table 5: Cronbach's Alpha of positive emotions

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,930	3	

## Table 6: Cronbach's Alpha of engagement

<b>Reliability Statistics</b>		
Cronbach's		
Alpha	N of Items	
,772	3	

Table 7: Cronbach's Alpha of positive relationships

<b>Reliability Statistics</b>						
Cronbach's						
Alpha	N of Items					
,852	3					

Table 8: Cronbach's Alpha of meaning

<b>Reliability Statistics</b>						
Cronbach's						
Alpha	N of Items					
,888,	3					

Table 9: Cronbach's Alpha of accomplishment

Reliability S	statistics
Cronbach's	
Alpha	N of Items
,822	3

## Appendix I: Assumptions for multiple regression analysis

## Table 1: Descriptive Statistics indicating Skewness and Kurtosis

	N Range Minimum Maximum Mean Std. Deviation Skewness								Kurt	osis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error	
Autonomy	113	6,00	1,00	7,00	4,9646	1,33750	-,704	,227	,428	,451	
Competence	113	5,00	2,00	7,00	4,8274	1,16835	-,616	,227	-,254	,451	
Relatedness_INV	113	4,75	2,25	7,00	5,4226	1,19667	-,918	,227	,169	,451	
StudentWellbeing	113	5,67	3,47	9,13	7,1888	1,03337	-1,288	,227	2,431	,451	
Coproduction	113	3,67	3,00	6,67	5,2109	,76474	-,603	,227	-,036	,451	
Valid N (listwise)	113										

### Descriptive Statistics

Figure 1: Scatterplot relationship autonomy, competence, and relatedness and coproduction



Figure 2: Scatterplot relationship coproduction and students' psychological wellbeing



Table 2: Residuals statistics relationship autonomy, competence, and relatedness and coproduction

## Residuals Statistics<sup>a</sup>

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4,3808	5,8070	5,2109	,30962	113
Residual	-1,95246	1,61923	,00000,	,69926	113
Std. Predicted Value	-2,681	1,925	,000,	1,000	113
Std. Residual	-2,755	2,284	,000	,987	113

a. Dependent Variable: Coproduction

*Table 3: Residuals statistics relationship coproduction and students' psychological wellbeing* 

Residuals Statistics <sup>a</sup>									
	Minimum	Maximum	Mean	Std. Deviation	Ν				
Predicted Value	6,9315	7,3582	7,1888	,08900	113				
Residual	-3,67818	2,12426	,00000	1,02953	113				
Std. Predicted Value	-2,891	1,904	,000	1,000	113				
Std. Residual	-3,557	2,054	,000	,996	113				

#### 1..... ~

## Table 4: VIF value relationship autonomy, competence, and relatedness and coproduction

	Coefficients <sup>a</sup>											
	Unstandardized Coefficients Coefficients 95,0% Confidence Interval for B Collinearity Statistics											
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF		
1	(Constant)	4,245	,402		10,560	,000,	3,448	5,041				
	Autonomy	,232	,052	,406	4,479	,000,	,129	,335	,932	1,072		
	Competence	,044	,060	,067	,732	,466	-,075	,163	,906	1,104		
	Relatedness_INV	-,074	,060	-,115	-1,230	,221	-,192	,045	,873	1,145		
a. D	ependent Variable: C	oproduction										

Table 5: VIF value relationship coproduction and students' psychological wellbeing

	Coefficients <sup>a</sup>									
		Unstandardize	d Coefficients	Standardized Coefficients			95,0% Confider	ice Interval for B	Collinearity	Statistics
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6,582	,673		9,782	,000	5,249	7,916		
	Coproduction	,116	,128	,086	,911	,364	-,137	,370	1,000	1,000
a. D	ependent Variabl	e: StudentWellbe	eing							

Figure 3: Histogram relationship autonomy, competence, and relatedness and coproduction







Figure 5: Histogram relationship coproduction and students' psychological wellbeing





## Appendix J: Relationship autonomy, competence, and relatedness and coproduction

Figure 1: Model summary relationship autonomy, competence, and relatedness and coproduction

Model Summary <sup>b</sup>									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson				
1	,405 <sup>a</sup>	,164	,141	,70882	1,993				

a. Predictors: (Constant), REL\_IV, AUT, COMP

b. Dependent Variable: COP

Figure 2: ANOVA	relationship autonomy	, competence, and	l relatedness and	coproduction
-----------------	-----------------------	-------------------	-------------------	--------------

Model		Sum of Squares	df	Mean Square	F	Sig.			
1	Regression	10,737	3	3,579	7,123	,000 <sup>b</sup>			
	Residual	54,764	109	,502					
	Total	65,501	112						

ANOVA<sup>a</sup>

a. Dependent Variable: COP

b. Predictors: (Constant), REL\_IV, AUT, COMP

Figure.	3: (	Coefficients	relationshi	p autonomv.	competence.	and r	elatedness	and co	pproduction
				,					P

	oventients											
		Unstandardize	d Coefficients	Standardized Coefficients			95,0% Confider	nce Interval for B	Collinearity	Statistics		
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF		
1	(Constant)	4,245	,402		10,560	,000	3,448	5,041				
	AUT	,232	,052	,406	4,479	,000	,129	,335	,932	1,072		
	COMP	,044	,060	,067	,732	,466	-,075	,163	,906	1,104		
	REL_IV	-,074	,060	-,115	-1,230	,221	-,192	,045	,873	1,145		

## Coefficients<sup>a</sup>

## Appendix K: Relationship coproduction and students' psychological wellbeing

Figure 1: Model summary relationship coproduction and students' psychological wellbeing

	Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson						
1	,086ª	,007	-,002	1,03416	1,996						

a. Predictors: (Constant), COP

b. Dependent Variable: SW

Figure 2: ANOVA relationship coproduction and students' psychological wellbeing

	ANOVA <sup>a</sup>										
Model		Sum of Squares	df	Mean Square	F	Sig.					
1	Regression	,887	1	,887	,829	,364 <sup>b</sup>					
	Residual	118,712	111	1,069							
	Total	119,599	112								

a. Dependent Variable: SW

b. Predictors: (Constant), COP

*Figure 3: Coefficients relationship coproduction and students' psychological wellbeing* 

	Coefficients <sup>a</sup>											
		Unstandardize	d Coefficients	Standardized Coefficients			95,0% Confider	nce Interval for B	Collinearity	Statistics		
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF		
1	(Constant)	6,582	,673		9,782	,000	5,249	7,916				
	COP	,116	,128	,086	,911	,364	-,137	,370	1,000	1,000		

### Appendix L: Hypotheses testing

### Table 1: Outcomes SPSS Process Autonomy as Independent Variable

Run MATRIX procedure: Written by Andrew F. Hayes, Ph.D. www.afhayes.com Documentation available in Hayes (2022). www.guilford.com/p/hayes3 Model : 4 Y : SW X : AUT M : COP Covariates: COMP REL IV Sample Size: 113 \*\*\*\*\* OUTCOME VARIABLE: COP Model Summary R-sq ,1639 MSE F R MSE F dfl df2 ,5024 7,1234 3,0000 109,0000 df1 df2 p ,4049 ,0002 Model coeff se t LLCI ULCI р ,0000,0000 ,4019 10,5602 3,4479 4,2445 5,0411 constant 4,4788 **,**1295 ,2323 ,0519 ,3350 AUT **,**4656 **-,**0753 COMP ,0602 ,7323 ,0441 ,1635 ,0599 -1,2302 ,2213 -,1924 REL IV -,0737 ,0450 OUTCOME VARIABLE: SW Model Summary MSE F dfl df2 ,6451 19,3467 4,0000 108,0000 R R-sq р ,6461 ,4174 ,0000 Model coeff t LLCI ULCT se р ,6478 5,9118 ,0000 constant 3,8298 2,5457 5,1139 3,4165 ,0639 ,0009 ,0917 **,**3452 AUT ,2185 ,1085 ,3880 **,**1211 -,0941 -,3092 COP -,8667 6,0393 ,0000 ,2775 COMP ,0684 **,**5487 **,**4131 ,0400 ,0683 ,0066 ,1421 ,2775 REL IV 2,0788 Direct effect of X on Y t р LLCI ULCT Effect se ,2185 ,0639 ,0009 3,4165 ,0917 ,3452 Indirect effect(s) of X on Y: Effect BootSE BootLLCI BootULCI ,0413 COP -,0218 ,0293 **-,**0795 \* ANALYSIS NOTES AND ERRORS \* Level of confidence for all confidence intervals in output:

95,0000 Number of bootstrap samples for percentile bootstrap confidence intervals: 5000 ----- END MATRIX -----

Table 2: Outcomes SPSS Process Competence as Independent Variable

Run MATRIX p	rocedure:					
*****	**** PROCES	S Procedur	e for SPSS V	Version 4.1	*******	*****
Wr	itten by And	rew F. Hay	es, Ph.D.	www.af	hayes.com	
Document	ation availa	ble in Hay	es (2022). w	ww.guilfor	d.com/p/hay	es3
* * * * * * * * * * * *	* * * * * * * * * * * *	* * * * * * * * * *	* * * * * * * * * * * *	******	* * * * * * * * * * *	* * * * * * *
Model : 4						
Y : SW	_					
X : COM	P					
M : COP						
Covariates: AUT RE	L IV					
	_					
Sample						
5126: 115						
* * * * * * * * * * * *	* * * * * * * * * * * *	* * * * * * * * * *	* * * * * * * * * * * *	******	* * * * * * * * * * *	* * * * * * *
OUTCOME VARI. COP	ABLE:					
Model Summar	V					
R	- R-sq	MSE	F	df1	df2	р
,4049	,1639	,5024	7,1234	3,0000	109,0000	,0002
Model						
110 0.0 1	coeff	se	t	q	LLCI	ULCI
constant	4,2445	,4019	10,5602	,0000	3,4479	5,0411
COMP	,0441	,0602	,7323	,4656	<b>-,</b> 0753	,1635
AUT	,2323	,0519	4,4788	,0000	,1295	,3350
REL_IV	-,0737	,0599	-1,2302	,2213	-,1924	,0450
* * * * * * * * * * * *	* * * * * * * * * * * *	* * * * * * * * * *	* * * * * * * * * * * *	******	* * * * * * * * * * *	* * * * * * *
OUTCOME VARI. SW	ABLE:					
Model Summar	v					
R	- R-sq	MSE	F	df1	df2	р
,6461	,4174	,6451	19,3467	4,0000	108,0000	,0000
Model						
	coeff	se	t	р	LLCI	ULCI
constant	3,8298	,6478	5,9118	,0000	2,5457	5,1139
COMP	,4131	,0684	6,0393	,0000	,2775	,5487
COP	-,0941 2195	,1085	-,866/ 2,4165	,3880	-,3092	, 1211 2452
REL IV	,1421	,0683	2,0788	,0400	,0066	,2775
—						·
* * * * * * * * * * * * *	***** DIREC'	T AND INDI	RECT EFFECTS	G OF X ON Y	********	******
Direct effec	t of X on Y					
Effect	se	t	р	LLCI	ULCI	
,4131	,0684	6,0393	,0000	<b>,</b> 2775	,5487	

Indirec	t effect(s)	of X on Y	Υ:			
	Effect	BootSE	BootLLCI	BootULCI		
COP	-,0041	,0108	-,0281	,0176		
*****	******	***** ANA	LYSIS NOTES	AND ERRORS	************	********
Level o 95,00	f confidence 00	e for all	confidence	intervals i	n output:	
Number 5000	of bootstrap	o samples	for percent	tile bootstr	ap confidence	intervals:
	END MATRIX -					

Table 3: Outcomes SPSS Process Relatedness as Independent Variable

```
Run MATRIX procedure:
Written by Andrew F. Hayes, Ph.D.
                                                       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3
Model : 4
    Y : SW
X : REL_IV
    M : COP
Covariates:
AUT COMP
Sample
Size: 113
OUTCOME VARIABLE:
COP
Model Summary

        R
        R-sq
        MSE
        F
        df1
        df2

        ,4049
        ,1639
        ,5024
        7,1234
        3,0000
        109,0000

                                                                                     р
                                                                               ,0002
Model
                         setpLLCI,401910,5602,00003,4479,0599-1,2302,2213-,1924,05194,4788,0000,1295,06027323,4656-,0753
                                                                LLCI ULCI
3.4479 5,0411
            coeff
4,2445
constant
REL_IV
             -,0737
                                                                        ,0450
              ,2323
                                                                            ,3350
AUT
               ,0441
                                                    ,4656
                                                               -,0753
COMP
                           ,0602
                                       ,7323
                                                                             ,1635
*****
OUTCOME VARIABLE:
SW
Model Summary
                R-sq MSE F df1 df2
,4174 ,6451 19,3467 4,0000 108,0000
         R
                                                                                    р
                                                                               ,0000
      ,6461
Model
               coeff
                             se
                                          t
                                                                LLCI
                                                       р
                                                                             ULCT

        Se
        C
        P
        LLC1

        , 6478
        5, 9118
        ,0000
        2, 5457

        , 0683
        2, 0788
        ,0400
        ,0066

        , 1085
        -, 8667
        ,3880
        -,3092

        , 0639
        3, 4165
        ,0009
        ,0917

                                                                          5,1139
             3,8298
constant
                                                             ,0066
-,3092
                                                                          ,2775
REL IV
              ,1421
COP
             -,0941
,2185
                                                                           ,1211
AUT
                                                                            ,3452
```

,4131 ,0684 6,0393 ,0000 ,2775 ,5487 COMP Direct effect of X on Y se t p LLCI ULCI ,0683 2,0788 ,0400 ,0066 ,2775 se Effect ,1421 Indirect effect(s) of X on Y: Effect BootSE BootLLCI BootULCI ,0069 ,0122 -,0123 ,0370 COP Level of confidence for all confidence intervals in output: 95,0000 Number of bootstrap samples for percentile bootstrap confidence intervals: 5000 ----- END MATRIX -----

# Appendix M: Direct relationship autonomy, competence, and relatedness and students' psychological wellbeing

# Table 1: Model Summary, ANOVA and Coefficients relationship between autonomy and students' psychological wellbeing

	Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson						
1	,369ª	,136	,128	,96485	2,073						

a. Predictors: (Constant), AUT

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16,266	1	16,266	17,473	,000 <sup>b</sup>
	Residual	103,333	111	,931		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), AUT

### Coefficients<sup>a</sup>

		Unstandardize	d Coefficients	Standardized Coefficients			95,0% Confider	ice Interval for B	Collinearity	Statistics
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	5,774	,350		16,480	,000	5,080	6,468		
	AUT	,285	,068	,369	4,180	,000	,150	,420	1,000	1,000

Table 2: Model Summary, ANOVA and Coefficients relationship between competence and students' psychological wellbeing

#### Model Summary<sup>b</sup> Adjusted R Durbin-Std. Error of R R Square Square the Estimate Watson Model 1 ,553ª ,306 ,299 ,86500 2,112

a. Predictors: (Constant), COMP

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36,546	1	36,546	48,843	,000 <sup>b</sup>
	Residual	83,054	111	,748		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), COMP

### Coefficients<sup>a</sup>

		Unstandardize	d Coefficients	Standardized Coefficients			95,0% Confider	ice Interval for B	Collinearity	Statistics
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	4,829	,347		13,900	,000	4,140	5,517		
	COMP	,489	,070	,553	6,989	,000	,350	,628	1,000	1,000

Table 3: Model Summary, ANOVA and Coefficients relationship between relatedness and students' psychological wellbeing

## Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	,371ª	,137	,130	,96413	2,025

a. Predictors: (Constant), REL\_IV

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16,420	1	16,420	17,665	,000 <sup>b</sup>
	Residual	103,179	111	,930		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), REL\_IV

### Coefficients<sup>a</sup>

		Unstandardized Coefficients		Standardized Coefficients			95,0% Confider	ce Interval for B Collinearity		Statistics
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	5,454	,423		12,903	,000	4,616	6,291		
	REL_IV	,320	,076	,371	4,203	,000	,169	,471	1,000	1,000

Appendix N: Relationship autonomy, competence, and relatedness and separate dimensions of the PERMA-model

Table 1:	Relationship	Autonomy and	separate	dimensions	PERMA-model
----------	--------------	--------------	----------	------------	-------------

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.091	.315	.084	3.499	.001
Engagement	.077	.292	.087	3.219	.002
Positive Relationships	.115	.351	.089	3.946	.000
Meaning	.086	.308	.094	3.405	.001
Accomplishment	.043	.227	.073	2.451	.016

Table 2: Relationship Competence and separate dimensions PERMA-model

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.237	.494	.088	5.982	.000
Engagement	.141	.386	.096	4.408	.000
Positive Relationships	.148	.395	.100	4.525	.000
Meaning	.274	.530	.096	6.576	.000
Accomplishment	.199	.454	.076	5.361	.000

Table 3: Relationship Relatedness and separate dimensions PERMA-model

Relationship	Adjusted R Square	Beta	Std. Error	t	Significance
Positive Emotions	.076	.290	.095	3.194	.002
Engagement	.054	.249	.099	2.714	.008
Positive Relationships	.157	.405	.097	4.672	.000
Meaning	.079	.295	.106	3.253	.002
Accomplishment	.062	.265	.080	2.892	.005

# Appendix O: Relationship separate items of coproduction and students' psychological wellbeing

*Table 1: Model summary, ANOVA, and coefficients relationship coproduction 1 and students' psychological wellbeing* 

## Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	,085ª	,007	-,002	1,03425	1,952

a. Predictors: (Constant), lk bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,866	1	,866	,810	,370 <sup>b</sup>
	Residual	118,733	111	1,070		
	Total	119,599	112			

a. Dependent Variable: SW

 b. Predictors: (Constant), lk bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider

### Coefficients<sup>a</sup>

Unstandardized Coefficients Model B Std. Error		Standardized Coefficients Beta	t	Sig.	95,0% Confider Lower Bound	nce Interval for B Upper Bound	Collinearity Tolerance	Statistics VIF		
1	(Constant)	6,810	,433		15,740	,000	5,952	7,667		
	Ik bereid mijzelf (en documenten etc.) voor voordat ik een gesprek heb met mijn studiebegeleider	,074	,082	,085	,900	,370	-,089	,237	1,000	1,000

# Table 2: Model summary, ANOVA, and coefficients relationship coproduction 2 and students' psychological wellbeing

Model Summary <sup>b</sup>										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson					
1	,057ª	,003	-,006	1,03633	1,985					

a. Predictors: (Constant), lk probeer samen te werken met mijn studiebegeleider

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,386	1	,386	,360	,550 <sup>b</sup>
	Residual	119,213	111	1,074		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), lk probeer samen te werken met mijn studiebegeleider

	Coefficients <sup>a</sup>									
Unstandardized Coefficients			Standardized Coefficients			95,0% Confider	nce Interval for B	Collinearity	Statistics	
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6,851	,572		11,984	,000	5,718	7,984		
	lk probeer samen te werken met mijn studiebegeleider	,062	,104	,057	,600	,550	-,143	,268	1,000	1,000

a. Dependent Variable: SW

Table 3: Model summary, ANOVA, and coefficients relationship coproduction 3 and students' psychological wellbeing

## Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	,114 <sup>a</sup>	,013	,004	1,03124	1,964

a. Predictors: (Constant), Ik onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,556	1	1,556	1,463	,229 <sup>b</sup>
	Residual	118,043	111	1,063		
	Total	119,599	112			

a. Dependent Variable: SW

 b. Predictors: (Constant), Ik onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken

	Coefficients <sup>a</sup>												
Unstandardized Coefficients				Standardized Coefficients			95,0% Confiden	ice Interval for B	Collinearity	Statistics			
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF			
1	(Constant)	7,668	,408		18,802	,000	6,860	8,476					
	lk onderneem dingen om het werk van mijn studiebegeleider makkelijker te maken	-,102	,085	-,114	-1,210	,229	-,270	,065	1,000	1,000			

a. Dependent Variable: SW

*Table 4: Model summary, ANOVA, and coefficients relationship coproduction 4 and students' psychological wellbeing* 

## Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson	
1	,125 <sup>a</sup>	,016	,007	1,02986	2,023	

 a. Predictors: (Constant), Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1,871	1	1,871	1,765	,187 <sup>b</sup>
	Residual	117,728	111	1,061		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden

### Coefficients<sup>a</sup>

Model		Unstandardize B	d Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	95,0% Confider Lower Bound	ice Interval for B Upper Bound	Collinearity Tolerance	Statistics VIF
1	(Constant)	6,697	,383		17,489	,000	5,938	7,455		
	Ik bespreek mijn persoonlijke situatie openlijk met mijn studiebegeleider om hem/haar te helpen de beste oplossing voor mij te vinden	,094	,070	,125	1,328	,187	-,046	,233	1,000	1,000

a. Dependent Variable: SW

*Table 5: Model summary, ANOVA, and coefficients relationship coproduction 5 and students' psychological wellbeing* 

	Model Summary <sup>b</sup>											
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson							
1	,031ª	,001	-,008	1,03752	1,989							

a. Predictors: (Constant), lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn

b. Dependent Variable: SW

#### Sum of F Sig. Squares df Mean Square Model .746<sup>b</sup> 1 Regression 1 ,106 ,114 ,114 Residual 119,485 111 1,076 Total 112 119,599

## ANOVA<sup>a</sup>

a. Dependent Variable: SW

b. Predictors: (Constant), lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn

### Coefficients<sup>a</sup>

	Unstandardized Coefficients		Standardized Coefficients			95,0% Confider	nce Interval for B	Collinearity	Statistics	
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	7,047	,445		15,822	,000	6,165	7,930		
	lk voer taken uit om mijn studiebegeleider te helpen mij beter van dienst te zijn	,027	,084	,031	,325	,746	-,138	,193	1,000	1,000

*Table 6: Model summary, ANOVA, and coefficients relationship coproduction 6 and students' psychological wellbeing* 

## Model Summary<sup>b</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin- Watson
1	,179 <sup>a</sup>	,032	,023	1,02134	2,050

a. Predictors: (Constant), Ik werk volledig mee met mijn studiebegeleider

b. Dependent Variable: SW

## ANOVA<sup>a</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3,812	1	3,812	3,654	,059 <sup>b</sup>
	Residual	115,788	111	1,043		
	Total	119,599	112			

a. Dependent Variable: SW

b. Predictors: (Constant), lk werk volledig mee met mijn studiebegeleider

### Coefficients<sup>a</sup>

	Unstandardized Coefficients		Standardized Coefficients			95,0% Confidence Interval for B		Collinearity Statistics		
Model		В	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	6,061	,598		10,140	,000	4,877	7,246		
	lk werk volledig mee met mijn studiebegeleider	,202	,106	,179	1,912	,059	-,007	,411	1,000	1,000