

How determined are Secondary Education Students about their higher education choice?

An analysis of the study choice of Dutch VWO students based on the Theory of Planned Behaviour

*University of Twente,
Center for Higher Education Policy Studies (CHEPS)
Christian van Wamelen (s1018825)
Faculty Management and Governance*

*Supervisors: Dr. H.F. de Boer
Prof. dr. J.J. Vossensteyn*

Foreword

This master thesis is the result of seven months of hard work to finish my master program Business Administration (track Service Management). The research topic – study choice of VWO 6 students – differs somewhat from what normally fits in the field of Business Administration, but has provided me with the opportunity to learn a lot about the way humans behave when they have to make an important decision in their life.

Without the support of many, this master thesis would not have been written. First of all, I would like to thank my first supervisor Harry de Boer who guided me throughout the process of writing my master thesis. He helped me to keep faith in a good result in a timely manner. Also the second supervisor Hans Vossensteyn added value to this research. His personal approach helped me to keep focus on the main issues of the master thesis.

Without the willingness and cooperation of the eight participating schools, the research could not have taken place. I am grateful that the deans, teachers, study advisors and students cooperated in the project to help me to get the data in a short period of time.

In my social environment I want to thank Jethro for sparring with me about my master thesis. Also I like to thank Trudy who always supported me in difficult times during the master thesis process. Without you this master thesis would never have been finished, thanks for that! Finally, I dedicate the result of this master thesis to my deceased friend René who is always in my mind.

Finally being graduated it is time to get a nice job to use my knowledge for practical purposes. I hope you will enjoy to read my master thesis!

Apeldoorn, 28 June 2012

Summary

Introduction thesis

This master thesis is focused on the study choice certainty of VWO 6 students in the Dutch educational system. The main research question in this research is:

How certain are VWO students in making their study choice and which factors determine their choice?

The theory of planned behaviour directed the research project. This theory indicates three main variables that explain behaviour: attitude, social environment and perceived behavioural control. These independent variables are supposed to influence study choice certainty. To gather the empirical data a written questionnaire has been designed, which has been completed by 367 secondary school students in the eastern part of the Netherlands.

Results

It appears that most of the VWO 6 students know what kind of study they want to pursue and at which educational institution. 34% of the respondents have some doubts about where they want to pursue a study program and / or what kind of study. Another interesting outcome in this study is that VWO6 students that want to pursue a WO study program have significant more doubt about their study choice than VWO6 students that want to pursue a HBO study program in the coming study year. The motives interest, pleasure and the chance to get a nice job are the main attitude issues that play an important role when it comes to pursue a certain study program. In the student's social environment, parents have most influence on the student when it comes to the a study choice. The group that might be expected to play an important role in the study choice process of students such as teachers, deans, study advisors and mentors have no major influence on the study choice. Another interesting outcome is that VWO6 students that perceive more obstacles limiting their study choice are less likely to be certain about their study choice.

Reflection

An interesting finding compared to previous studies is that the parents play an important role in the study process of VWO6 students. The authors Lacante & Schodts (1997) indicate that only 25% of the parents have a notable influence on the study choice of their child. The outcome that students that see more obstacle are less certain about their study choice is not found in previous research.

Recommendations and further research

Interesting to know after one year is if the students that cooperated in this study are still following the chosen higher education study program or whether the study they chose really brings what they expected. This is not possible in the name of this study. To further guide, or improve, study choice it appears to make sense that the deans start to getting more engaged in conversations with parents to talk about the study choice of the students. Deans can inform parents with useful information about the higher education study programs. Another advice to simplify study choice would be to decrease the amount of higher educational study programs that could lead to less doubt because of the smaller number of options to choose from which eventually could lead to a lower drop-out rate. The respondents in this research complained about the high amount of higher educational study programs that obstructs their study choice and the certainty of their study choice.

Content

Foreword	2
Summary	3
1 Introduction.....	7
1.1 Thesis introduction.....	7
1.2 The Dutch educational system	8
1.3 Second phase model	9
1.4 Study choice and the consequences	10
1.5 Research questions.....	13
1.6 Relevance for science	13
1.7 Relevance for society.....	14
1.8 Outline of the report	15
2 Theoretical Framework	16
2.1 Introduction.....	16
2.2 Making a study choice	16
2.3 Previous research on study choice.....	17
2.4 The theory of planned behaviour.....	18
2.5 Translate theory of planned behaviour to student choice.....	21
2.5.1 The attitude	21
2.5.2 The subjective norm	22
2.5.3 Perceived behavioural control	23
2.6 Conceptual model	26
2.7 Assumptions	27
3 Methodology and operationalization.....	29
3.1 Selection of case studies	29
3.2 Questionnaire, operationalization of main variables.....	30
3.3 Data Analysis	33
3.4 Respondents	34
4 Results	37
4.1 Introduction.....	37
4.2 Certainty about study choice	37

4.3 Attitude.....	39
4.4 Subjective norm.....	42
4.5 Perceived behavioural control	45
4.6 Background characteristics related to study choice	47
4.7 Correlations	50
4.8 Regression analysis.....	51
5 Conclusion	53
5.1 Introduction.....	53
5.2 Study choice certainty	53
5.3 Assumptions	54
5.4 The motivations determines study choice	55
5.5 The influence of the social environment.....	56
5.6 Obstructing factors.....	57
6 Research limitations, further research and recommendations	58
6.1 Limitations of this study	58
6.2 Further research.....	59
6.3 Recommendations.....	60
References:.....	61
Appendix:	67
A. Questionnaire.....	68
B. Results of the background characteristics	72

1 Introduction

1.1 Thesis introduction

This thesis aims to analyse the study choice certainty of pre-university (VWO) students in the Netherlands and the factors that determine the certainty of their study choice.

Dutch VWO Students have to decide, once having completed their secondary education program at the sixth grade, if they want to follow a new course and if so which program they want to pursue. This choice is a complex process and has significant microeconomic consequences for the future labour opportunities of Dutch students. Moreover, it is essential to understand their study choice behaviour from a macroeconomic perspective as the Dutch government strives to maintain a prominent position as a knowledge-based economy (Park & Hong & Leydesdorff, 2005). To achieve this goal a highly skilled labor force is required (Ministerie van OCW, 2011).

In a nutshell, this study explores the underlying intentions and motivations for VWO6 students to apply for either a HBO-Bachelor or a WO-Bachelor program. This chapter structured as follows: by analysis of the HE system in paragraph 1.2. Paragraph 1.3 will provide an overview of the implementation of the Second Phase model, a curriculum reform in the Dutch secondary education that has had a significant impact on the Dutch secondary education system since 1998. Paragraph 1.4 will discuss the concept of study choice and its consequences. The research questions relevant to this thesis are addressed in paragraph 1.5. In Paragraph 1.6 the scientific relevance for drafting this thesis will be discussed followed by a discussion of the social relevance in paragraph 1.7. In the final paragraph, 1.8, I will provide an overview of the entire thesis.

1.2 The Dutch educational system

The Dutch educational system - directed by the Ministry of Education, Culture and Science (DMECS) - is, similar to those of other Western societies, organized into three successive levels: primary, secondary and tertiary education (Sá, 2006). After finishing primary education, parents receive an advice which program their child should follow in secondary education (SE) – in Dutch: *'basisvorming.'* Parents have three options; a) the pre-vocational secondary education (VMBO) that takes four years, b) senior general secondary education (HAVO) that takes five years, and c) pre university education (VWO) that takes six years (Ministerie van OCW, 2009).

The first year of the SE is referred to as the bridging class – in Dutch: *'de brugklas.'* The bridging class provides an opportunity for the student to see if his or her capacities meet the requirements of the program and offers the option to switch between particular levels (Ministerie van OCW, 2009). After finishing the initial stage, the student automatically transfers to the final stage of the SE¹. The final stage of the SE has significantly changed over the last 15 years. In 1998, the DMECS adopted the Law on Profiles - which aimed to improve the transition from secondary education to higher professional education (HBO) and scientific education (WO) (Tweede Fase Adviespunt, 2005). The Law on Profiles translated itself into the Second Phase Model (SPM) – in Dutch: *'Tweede Fase.'* This model will be addressed in paragraph 1.3.

The Netherlands have a binary higher education system. This means that the HBO and WO together comprise the tertiary education system in the Netherlands. VWO is intended to prepare students for academic higher education (WO), The WO (universities) offer both Bachelor and Master Degree programs. The universities of applied science (HBO) mainly offer Bachelor degree programs; a limited number of HBO institutions offer Master degree programs. It must be noted that each SE program provides different options to continue an educational program. Figure 1.1 gives an overview of the Dutch education system.

¹ The initial phase of the SE lasts until the second grade for VMBO students and until the third grade for HAVO & VWO students. The final stage of the SE for VMBO students is from the third until the fourth grade, for HAVO students from the fourth to the fifth grade, and for VWO students from the fourth to the sixth grade

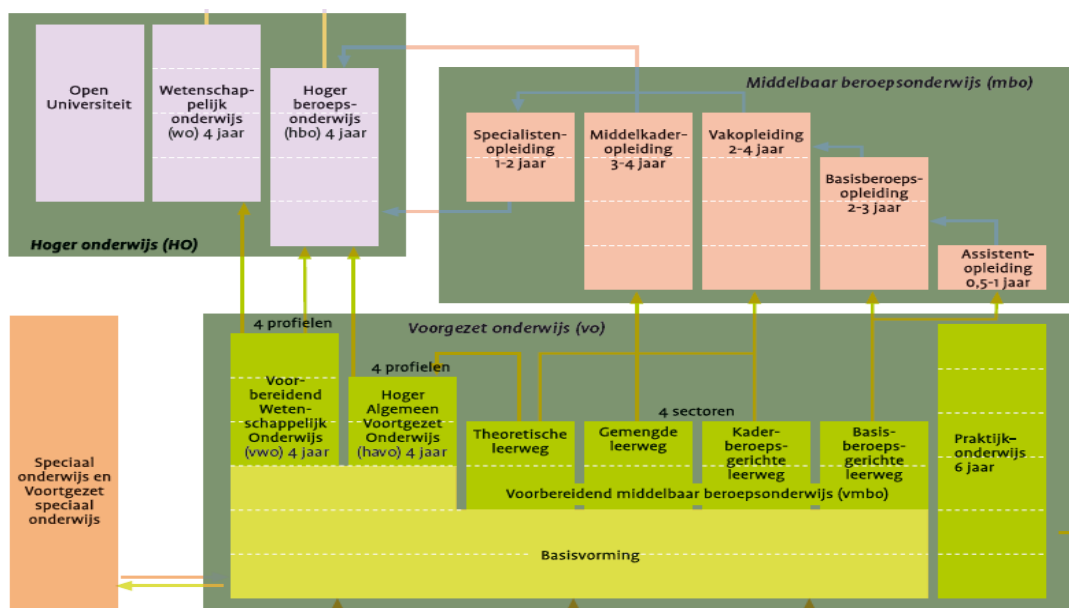


Figure 1.1: Structure of the Dutch educational system (Noordhoff Uitgevers, 2008).

1.3 Second phase model

As previously mentioned, the implementation of the Law on Profiles has had a serious impact on the Dutch SE system. The Law on Profiles, which transferred into the Second Phase Model (SPM), would, besides improving the transition between the SE and HE, focus on modernizing and developing a more coherent Dutch education system (Onderwijsraad, 2005). To achieve this, students had to make a profile choice² based on their interest and capabilities (Verschuuren, 2009). Moreover, the DMECS desired students to work more independently (Tweede Fase Adviespunt, 2005).

During the last ten years, the SPM has gone through many changes³. In 2005, research by the DMECS was conducted on the successes and failures of the SPM in the past seven years. Tweede Fase Adviespunt noted that the SPM has, despite operational problems causing a significant burden to Dutch students, successfully prepared the HAVO5 and VWO6 students for the higher professional education (HBO) and scientific education (WO) programs.

² The following four profiles can be picked by a Dutch HAVO or VWO student at the end of the initial stage of SE: a) Culture and Society which addresses history, art, foreign languages and prepares students for artistic and cultural training; b) Economics and Society which addresses history and economics and prepares students for economics training; c) Nature and Health which addresses natural sciences and biology and prepares students to attend medical training; d) Nature and Technology which focuses on natural sciences, including algebra and geometry, and prepares students to attend technological and natural science training (Tweede Fase Adviespunt, 2005)

³ The last modification occurred in 2007, when the DMECS tried to lower the burden on students' shoulders and provide the schools with "more space to come up with a policy which matches the independent nature of the SPM."

Important for this research project is the notion that VWO students increasingly follow a WO program as a result of the SPM (Tweede Fase Adviespunt, 2005). The latter was confirmed as only 17% of the VWO graduates transferred to HBO as opposed to university (Noordhoff Uitgevers, 2008).⁴ In the nineties about 25% of the VWO students did pursue a HBO study program (de Jong et al. 2001). This means that there is an increase in percentage of VWO students that follow a WO program that eventually could lead to a higher amount of WO graduates if the percentage of WO graduates didn't decrease.

1.4 Study choice and the consequences

Study choice is a vital fact for pupils in the Dutch education system. Both children and parents are subject to making study choices at four different stages ranging from the end of the primary education to the end of the secondary education. In the final year of the primary education, a pupil has to decide which level they will follow in the bridging class. During the bridging class, a student has the option to switch between different educational tracks to determine the right level. Subsequently, students have to decide which profile they will select at the end of the initial stage of the secondary education, and finally after graduation the student has to decide if they want to continue in higher education study program. This research project focuses on the last step: making a study choice during graduation or after graduating from the SE. The study choice process exists out of four choices: 1) does the student want to follow a tertiary study program, 2) HBO or WO education, 3) the choice for an institution, and 4) which program (Van Leeuwen & Hop, 2000). 97% of the students decide to pursue a tertiary study program that could help to maintain a high knowledge-based economy (de Graaf et al, 2006). Still the study choice process related to higher education does have some flaws.

The necessity to carefully evaluate the choice process is related to the fact that a significant amount of students drop out of HE as they have picked the wrong study program (Warps, 2009). To illustrate this with numbers: an estimated 30% of the students enrolling to a HBO program quit after the first year.

⁴ The DMECS notes that in 2008 only 9% of the VWO students enroll into a HBO-Bachelor program (Ministerie van Onderwijs, 2011)

Enrolling to a WO program causes 25% of the students to quit their program (Ministerie van OCW, 2011b)⁵. Some of these students will still pursue another higher education study programs but the waste and cost of one study year is irreversible, both for the student and society at large. Per annum about 153.000 students newly enroll into HE, from which 100.000 follow a Bachelor HBO and 53.000 follow a Bachelor WO (CBS,2010). The DMECS invests € 6.100 per HBO student and € 6.000 per WO student on an annual basis (Ministerie van OCW, 2011a). The amount of students that drop out in the first year of their educational program costs 262, 5 million per annum⁶. Assuming that more students will drop out later on in their study program the total cost of drops outs will be higher than the given amount of 262, 5 million. Besides that, the knowledge driven economy of the Netherlands also needs to be taken into consideration. The Netherlands that relies on their export needs high knowledge people to compete with countries as India and China that sell their product for a low price because of the low labour cost. DMECS has set a target to have 50% high educated citizens in its labour force (Ministerie van OCW/EZ, 2009)⁷. The ambition of the government is in line with the Europe 2020 strategy, which has set a target of 40% of Europe's young people to have a higher education qualification (European commission, 2010).

The students blame higher education and secondary education schools on the lack of qualitative and quantitative information which causes them to make the wrong decision (Zijlstra & Meijers, 2006; Ministerie van OCW, 2011b). The lack in the provision of qualitative and quantitative information in the Dutch educational system was already confirmed by the Tweede Fase Adviespunt, as only 50 percent of the VWO 4 / HAVO 4 students were satisfied with the help they received to determine the right profile selection (Tweede Fase Adviespunt, 2005).

⁵ Additional numbers: In 2007, an estimated 63.580 students stopped studying at the HBO and approximately 21.000 students quit their course on WO (Ministerie van OCW, 2009). After being enrolled for seven years, only 67% of the students were able to graduate (Commissie Toekomstbestendig Hoger Onderwijsstelsel, 2010). Of the remaining students, only 43% graduated within ten years after being enrolled (Ministerie van OCW, 2011b).

⁶ 30% of the students enrolling to a HBO program quit in their first year and 25% of the students that followed an WO program. The estimated cost of drop outs in the first year is €183.000.000 in the HBO program (30% of 100.000 * 6100) and €79.500.000 in the WO program (25% of 53.000*6000) This makes the total cost 262,5 million for the students that drop out in their first higher educational program (Ministerie van OCW, 2011)

⁷ In 2008, 37% of Dutch citizens between the age of 25 and 44 possessed a higher education degree (Ministerie van OCW, 2009). The DMECS adds that on global listing, the successes of the Dutch education system are not valued at a top position – 72%. According to the DMECS, this is due to the fact that only 26% of the Dutch students attend a Master program and only 3,2% of the WO students attend an excellence program (Ministerie van OCW, 2011).

The same research also shows that merely thirty to forty percentage of the Dutch students are satisfied with the help they received to pick the right program in HE (Tweede Fase Adviespunt, 2005). Last year, the DMECS reported that 51% of the students whom prematurely quit their educational program blamed this on the lack of qualitative and quantitative study information (Ministerie van OCWb, 2011).

Having that said, it is unlikely that the availability of qualitative information will be the only solution to solve this issue. Research shows that the underlying reasons for dropping out are never one dimensional; the decision to drop out is often fuelled by a combination of correlating factors (Bennet, 2003; Crossling & Heagney, 2009). These factors are related to the student characteristics, the environment (friends, family) and the institutional characteristics (Jansen, 2004; Van den Berg & Hofman, 2005).

The choice to follow a certain course is in one way influenced by the choice to select an educational institution (Warps, 2007). This research project excludes the choice educational institution and focuses on the rationale behind the selection of a certain course.

Part of the solution could be related to the expectations of students towards enrolling in a higher education program. The explanatory model of Onzovoort (2010) demonstrates that the determination of the study choice has a significant impact on the success of the study performances by Dutch students (Onzovoort, 2010). The moment of study choice is an important part in the selection process and is directly related with the dropout rate. De Jong et al (2002) argued that considerable doubt of the study choice will lead to a high risk of dropping out in the further study program. First year students that are more certain about their study choice and thus have less doubt, will invest more in their study program and will have more chance to successfully finish their study program than first years student that are less certain about their study choice (Lacante & Schodts, 1997). Students with some doubt feel that they are not completely prepared for the study program and find that the study is perceived as heavier whereby the risk of dropping out increases (Lacante & Schodts, 1997). To gain a better understanding of the dropouts in the higher education institutions it is interesting to know how students come to their study choice decision.

1.5 Research questions

In this study following research question is formulated to get a better understanding of the study choice behaviour of students:

How certain are VWO students in making their study choice and which factors determine this certainty in study choice?

The following sub questions aim to answer the main research question:

1. Have VWO students made their study choice just before they graduate from secondary school?
2. How can certainty in study choice theoretically be explained?
3. Which motives play in practice a role in study choice behaviour of VWO students?
4. Which recommendations can be made to further improve or facilitate study choice of secondary school graduates?

This study will use the theory of planned behaviour to give an answer to the main and sub questions mentioned above. The theory of planned behaviour analyzes the behaviour of people through three key variables namely; attitude, subjective norm and perceived behavioural control. The theory of planned behaviour is very broad and looks at different aspects about why and how people come to a specific decision. The data for this study will be gathered through a questionnaire.

1.6 Relevance for science

The relevance for science of this research project is evident, as there is no comparable research project which utilizes Ajzen's planned behaviour theory *to analyse the study choice of Dutch VWO6 Students*. Study choice as a concept has been grasped by scholars (Knoop, 2008; Bloemen & Dellaert, 2001; Verhoeven et al., 2003; Vossensteyn, 2005) and institutions. However, a significant amount of the studies focused on students who are already following a program HE and rarely look at the study choice of students (Roger et al, 2008) when transferring from SE to HE.

Zooming in on this, there is an absence in the available literature of case studies which solely focus on VWO 6 students. Bulk (2011) has performed research in SE, but besides VWO students also addressed VMBO students and HAVO students on subjects such as self-image and future expectations. Verschuuren (2009) has conducted research on the transition from SE to HE, however, her focus was on exact sciences. Verkroost (2007) does focus on VWO6 students; however, his thesis focuses on promoting the Course Commercial Informatics Technology at the University of Twente at the target group. Finally, Cobert (2009) also addresses the transition from SE to HE, however, she focuses on the Flemish education system. None of the discussed research projects utilized Ajzen's theory of planned behavior. This illustrates the added value of this research.

Having that said, the instrument has not been used to cover the scope of this research project: analyzing the study choice certainty and factors that determine the study choice of VWO6 students. This highlighted the uniqueness of this research scope.

Finally, the subject of dropouts within an education system has to be addressed in this context. Even though the scope of this research project focuses solely on the study choice of Dutch VWO6 students, dropouts is a logical consequence of making a 'wrong' study choice. Dropouts in an international context have been addressed by several scholars.⁸ Whilst placing the scope on the Netherlands, dropouts in the lower segment of the SE are discussed by in't Veld et. Al. (2006). Elements of the outcome of this investigation can be used to address if there are some similarities and difference with research like't Veld et. Al. (2006). Also can the outcome of the survey form an essential input to link possible dropouts of the target population with their study choice.

1.7 Relevance for society

This research project has a significant relevance for society on both micro and macro level. On micro level, individuals in the process of making a decision will gain more insight and a better understanding on study choice behaviour.

⁸ For literature on dropouts in the United States see (Tinto, 1975; Rumberger, 2001; Bennet, 2003; Rumberger, 2001) for literature on dropouts in Scandinavia see (Andersson & Johnsson & Berglund & Ojehagen, 2009). For literature on dropouts in the United Kingdom see (Dearden & Emmerson & Frayne & Meghir, 2006; Marchin & Vignoles, 2006) . For literature on dropouts in Australia see (Crossling & Heagney, 2009). For a comparative study on students in Europe versus the United States see (Woessmann, 2004).

One can argue that individuals will be better equipped to make a correct study decision, which may have a great impact on their future lives. (Feltzer & Rickli, 2009) note that students may face psychological cons of dropping out of university. Moreover drop out students are less likely to find and hold jobs that pays sufficient money to keep them out of public assistance (Rumberger, 2001).

On a macro level, policymakers in the economics and educational fields gain actionable knowledge on how students eventually make their choices and service them in making a more certain study choice. Understanding and anticipating on student behaviour forms an essential link in addressing the highly underestimated drop out problem which the Western societies face⁹. By doing so, the DMECS can contribute to its target to have 50% higher educated citizens in its labour force (Ministerie van OCW/EZ, 2009). Besides that, economic incentives for a knowledge-based economy as the Netherlands also need to be taken into consideration as mentioned in paragraph 1.4. Reducing the number of dropouts would provide the DMECS with a short term return on investment. On the long run, graduated students will have a bigger contribution to the Dutch treasury through the tax payments.

1.8 Outline of the report

Chapter 2 will provide the reader with a theoretical approach –the theory of planned behaviour – and how this theory is applicable to this research project. Chapter 3 presents the chosen research design and methodology. Chapter 4 provides and analyses the results of the survey conducted amongst VWO6 students. Chapter 5 summarizes the findings of this thesis and gives some recommendations. Chapter 6 gives an overview of the limitations of this research project and provides suggestions for further research.

⁹ ibid

2 Theoretical Framework

2.1 Introduction

In the previous chapter, the following subjects have been introduced; the Dutch educational system, success and failures of the Second Phase Model, study choice and the relevance for both society and science. To continue, this research project will provide the reader with an in-depth understanding of current research on the field of study choice, and how the Theory of Planned Behavior can be used to analyze the study choice behavior of Dutch VWO students.

2.2 Making a study choice

Sixth grade students at the VWO level are facing an important decision in their lives. The students have a wide range of options to choose from and that choice will have significant influence on their knowledge capabilities and career possibilities. Basically each program will prepare students on a different level and in a different way when it comes to the labor market opportunities (Schreurs, 1996). Knowing this fact it seems logical that students get well informed about their study choice at an early stage.

However the moment students make their final study choice varies considerably. Verkroost (2007) indicated that 25% of the sixth grade students at pre-university VWO level have not yet made a study choice before the final examination. However 30% of the students make their study choice before they have entered the sixth grade (Verkroost, 2007).

Making a decision at a young age remains difficult, as research demonstrates that students who are younger than their peers are less capable to make a well-considered decision (De Graaf, de Jong & Van der Veen, 2006). Croné (2008) added that the brain of young people will be in a development stage until the age of 25 and therefore students could face difficulties by making a study choice. Regardless of this limitation secondary education students must make a study choice that can be described as an unavoidable choice, i.e. they are forced to make a decision even if they are not ready to do so.

2.3 Previous research on study choice

There is a lot of previous research available on the topic of study choice. It is interesting to know how other authors investigated study choice behaviour of secondary education students to specify the differences and similarities with this research scope. Table 2.1 gives a short summary on the theories, research questions and the conclusions that are described in previous research.

Author(s)	Research question	Theory used	Conclusion:
Kastelijjn (2008)	Does the motivation analysis in study groups work for VWO-5 students?	Theory of needs (McClelland, 1961)	Motivation analysis in study groups doesn't work well for VWO students and will not lead to a motivated study choices.
Cobert (2009)	What kind of influence has the social environment and motives on the study behaviour of students and does the choice process correlate with drop out?	Decision theory (Gati & Asher 2001).	The drop out phenomenon is not an enormous problem as previously thought, the social environment, the intrinsic and extrinsic motivations are considered as important factors for making a study choice.
Kerst (2009)	Which factors influence the information needs of a HAVO student about a job, school, city and education?	Theory of Planned Behaviour (Azjen & 1991).	Higher motivation leads to a higher need of information about the job, school, city and education that are primary focused on extrinsic motives.
Verkroost (2007)	Which factors determine the study choice process of VWO students and how can the communication process of the education BIT being improved?	Theory of Planned Behaviour (Azjen 1991).	The study choices are mainly focused on extrinsic and intrinsic motivations and new students must be gathered through a more aggressive manner for example by having more open days and better communication between secondary schools.

This short summary shows that the theory of planned behaviour is used by the authors Verkroost (2007) and Kers (2009) in the area of study choice. Furthermore, the Theory of Planned Behavior by Ajzen has indeed been a popular instrument by scholars to study behavior and intention. Armitage & Conner (2001) note that of 185 independent studies on behavior and intention published up to the end of 1997, the Theory of Planned Behaviour accounted for 27% and 39%, respectively. The theory of planned behaviour is used in different fields like predicting movement behavior (Kwakman, 2008), predicting the choice to call in sick (Hopstaken, 1994), predicting the choice to conduct recreational activities (Ajzen & driver, 1992) and the intention to continue working (Eijk, 2006).

However the scope of this research is different than the scope of Verkroost (2007) and Kers (2009). In this research the certainty of the study choice will be discussed on the basis of the theory of planned behaviour. This research will investigate in dept how VWO 6 students come to a study choice decision and if students with different background characteristics differ in their study choice motives.

2.4 The theory of planned behaviour

Theory of planned behavior is based on predicting behaviour. The theory of planned behaviour is evolved out of the theory of reasoned action (Ajzen & Fishbein, 1980). The succession of the theory of planned behaviour was due to the discovery that the behaviour of people is not always voluntary and often under control (Ajzen, 1991).

In the model, the intention to execute certain behaviour is placed in the center. The Intention is an indicator how hard people are willing to try to show certain behaviour (Ajzen 1991). To a certain extent the intention determines the executed behaviour. The general rule is: the higher the motivation to display certain behaviour, the higher the chance that this behaviour will be displayed.

According to Ajzen's model, human behaviour is influenced by three kinds of determinants namely:

- 1) attitude
- 2) subjective norm
- 3) perceived behavioural control

Attitude consists of two components that are related with each other: belief about the consequences of a certain behavior (behavioural beliefs) and personal judgment of the pros and cons to exert a certain behavior (Kwakman, 2008). The subjective norm is related to the beliefs about expectations of the social environment (normative beliefs) and the positive or negative judgment about each belief. The perceived control is about how much control and confidence a person has to perform a certain behaviour (Ajzen, 1991).

The three determinants of the intention to execute a behaviour do also influence each other (Ajzen, 1998). The opinion of a family member can influence the personal attitude an individual has towards a certain behaviour (Ajzen, 1991). The determinants 'attitude' and 'subjective norms' influence the intention of a person and through the intention the actual behaviour is influenced (Hopstaken, 1994). The perceived behavioural control does actually have a direct influence on the actionable behavior, including the intention to execute a certain behaviour (Telussa, 2010). This can be seen as a strong feature of the model of planned behaviour when it comes to the reliability of research. When an individual expects to, or one already does, experience difficulties, an individual can reject to execute a certain behaviour (Telussa, 2010). For example, an individual can have the intention to exercise sports in a weekend, yet, due to an unforeseen call to work he'll reject the intention to execute the behaviour. Bandura (1982) previously investigated the relationship between the perceived behavioural control and the actual human behaviour. An outcome in this research was that the actual human behaviour is intensely influenced by their confidence in their own abilities (Bandura, 1982). In general, the more confidence a person has in performing a certain task and the fewer the obstacles they anticipate, the stronger the chance is that the intention correlates with the actual behaviour.

Figure 1 briefly illustrates the Model of planned behaviour. It has to be added that the correlation of the attitudes, subjective norms, and the perceived behavioural control on the actual behavior of the variables are positive or negative (Ajzen, 1991). A correlation of -1 indicates a perfect negative correlation, meaning that as one variable goes up, the other goes down. A correlation of $+1$ indicates a perfect positive correlation, meaning that both variables move in the same direction together.

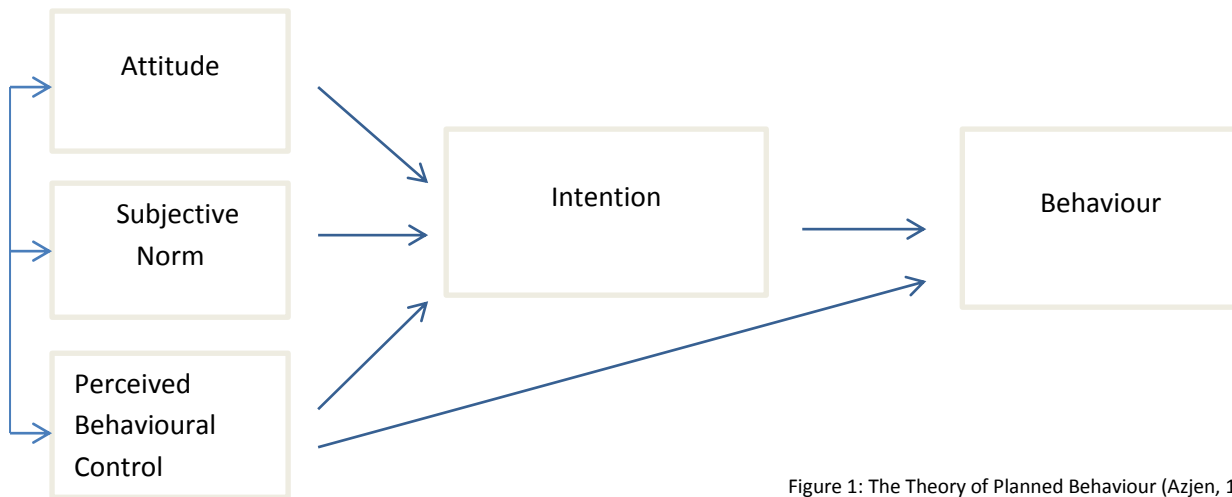


Figure 1: The Theory of Planned Behaviour (Ajzen, 1991).

Ajzen’s model can be used to predict study choice behaviour. The model encompasses the option to provide an accurate display of actionable executed behaviour. The additional factor ‘perceived behavioural control’ will ensure that not only the intention to make a study choice, but also the estimation of an individual’s capabilities to complete this study choice will be taken into consideration. The use of this theory gets an extra dimension when taking into account that other studies already showed that the addition of perceived behavioural control in a theoretical model leads to significant improvements in predicting human behaviour (Ajzen, 1991).

It is noteworthy that predicting behavior by utilizing the Theory of Planned Behaviour does have some flaws. An influential factor to determine the relationship between intention and actual behaviour is the time that passes between measuring the intention and measuring the behavior (Ajzen & Fishbein, 1980). The intention only can be used to *predict* human behaviour and does not give any guarantees that a certain behavior will actually be *exerted*. In the meta-analysis of Armitage & Conner (2001) showed that 40% to 60% of the intention could be explained by the three determinants of the model from Ajzen.

In the study choice process it is possible that the final behaviour differentiates from the previously formulated intention of a student to pursue a certain course. The student can, for example, become ill and reject his intention to follow a certain a course because he simply cannot continue studying. This is a so-called barrier which is not directly visible after measuring the behavioural intent.

Two types of barriers are mentioned in the available literature, being the internal and external barrier. An internal barrier is present when an individual does not pursue a certain behavior because something in his mind keeps him from carrying out his intention. An example is that a student wants to enroll in a specific study program because of his laxity to collect study information he cannot make a well overthought study choice. The external variant is applicable when an individual does not pursue a certain behavior due to an external factor for example a student could not enroll in a specific study program because of the selection procedure (Hopstaken, 1994).

2.5 Translate theory of planned behaviour to student choice

As previously mentioned there are different factors which can influence the behaviour of an individual, including the study choice behaviour of students. The factors which determine the study choice process will be divided into the three determinants which can predict the intention and the final behaviour (Ajzen, 1988).

2.5.1 The attitude

The personal attitude of an individual towards pursuing a follow-up study is formed by various factors. The study options of a student relate to how an individual perceives what the follow-up study will look like, from the transition from one's previous level or course towards the follow-up course, and his selected profile during the SE (Knoop, 2008).

Literature demonstrates that study choice behavior derives from choice motives. These choice motives can be divided into intrinsic and extrinsic motives (Lee, McInerney, Liem, & Ortega, 2010). Intrinsic motives are predominantly aspects such as personal development, interest in a course, and enjoying a course (Foppen, 1982). It can be the case that a student picks his follow-up course to develop his general knowledge. It can also be the case that the student sees his course as an instrument to reach a certain goal. The underlying purpose can be that a student is looking for an interesting job or a well-paid position.

Both of these examples are extrinsic motives (Foppen, 1982; Verkroost, 2007). Students make choice based on their image of a specific study program and the degree of importance of that image (Foppen, 1982).

The literature furthermore shows inconsistencies about which study choice motives determine the final study choice behaviour. Extrinsic motives are motives for reaching a specific goal such as; getting a job, a well-paid job or job with high status. Hofman *et al.* (2002) note that intrinsic motives are more important in a study choice process than extrinsic motives. According to Verhaeghe (2011) study choice motives are influenced by external factors such as the developments on the job market. This means that during times of an economic downturn, extrinsic motives are more important than intrinsic motives when determining which study to choose (Verhaeghe, 2011). It has to be mentioned that there are evident differences in study choice motives between HBO and WO students. HBO students are more extrinsically motivated visa-a-vis WO students (Hofman *et al* 2002). The importance of the motives for enrolling in a certain study also depends on gender. Male students find extrinsic motives more important than intrinsic motivates when it comes to choosing a follow up study program. Where female students determine their study choice on basis of intrinsic motives such as the degree of pleasure and challenge in a specific study (Foppen, 1982). Warps (2009) indicated in his research that male students find status more in important then female students that goes with their study choice.

2.5.2 The subjective norm

Students are, till a certain extent, influenced by their social environment which can be defined as subjective norm. Since their childhood, students are formed by their social environment and adapt their behavior to it (Verhulst, 2005). The social environment in this context includes parents, friends, family, study supervisors, deans and classmates (Oomen & Nierop, 2011).

The parents seem to have a decisive influence in the study choice process of students in secondary education. The roll of the parents is however diminishing. In primary education, the parents seem to play a participating roll at the study choice process of students and in the secondary education the parents have an explaining role (Kans *et al.*, 2009).

This appears to match the conclusion of Crone (2008), after research on the development of the brain of young people. Here Crone states that young people are dependent and need leadership from their social environment until secondary education, especially from their parents.

The students are expected to form their independent opinions from their 25th year (Crone, 2008). Research of Koning (2010) shows that students choose their study directions based on the opinion of their parents.

Lacente & Schodts (1997) show in their research that 25% of the students indicates that the opinion of the parents have a decisive character at making their study choice. In the research of Warps (2007) only 60% of the students discuss their study choice with their parents. Approximately one quarter state that they discuss their study choice with their school dean or with a friend (Warps 2007). Verhoeven *et al.* (2000) however state that 75% of the students discuss their study choice with friends and that 66% discuss their choice with a professional supervisor, for example their teachers. These conversations have a determining character in making the final study choice in 20% of the cases (Verhoeven *et al.* 2000). Kers (2009) concludes in her research that the students mainly discuss their study choice with their parents, friends, teachers, mentors and deans. The degree of influence of these individuals in the research of Kers (2009) was low, it appears that the parents had the most influence on the study choice of their child.

2.5.3 Perceived behavioural control

Executing a certain behaviour is, according to the Planned Behaviour Theory, not only determined by the attitude and influence of others (subjective norms), but also by the perceived behavioural control of an individual. Regarding the study choice process, the final study choice will not only be determined by the study choice motive or by the social environment of an individual, but also by the perceived experience of a person to fulfill the required tasks in his follow-up study.

Different scholars (Verkroost, 2007; Kers, 2009; Warps, 2009) mentioned that students can make their study choice based on his assessment to:

- Selection criteria
- His (academic) self-confidence with regard to completing his follow-up course;
- The tuition fees related and grant loans to his selected follow-up study.
- Availability of reliable program information
- Expected difficulty of a program
- Availability of accommodation

There are strict enrollment requirements to pursue a course in the Dutch HE. These requirements mostly relate to the previously selected profile during the SPM or the selected modules in the final year of graduation (Verbeek *et al.*, 2010). Heemskerk & Fennema (2002) demonstrate in their case study that 7% of the questioned students did not meet the selection criteria and were therefore not granted access to their primary study choice. For example, a student can have the intention to study gynaecology, but if his selected profile during the SPM does not meet the enrollment criteria of the gynaecology student, his intention cannot be executed. Research by Warps *et al.* (2009) shows that students more often take the enrollment requirement for a follow-up study into consideration when selecting a profile during the SPM.

A student cannot choose a certain program if the student expects the course to be too difficult (Hofman *et al.* 2002). It would make sense for a student to select a HBO course above a WO course as the HBO course will, in general, be easier. This was confirmed in a research project by De Jong *et al.* (2001), as graduates increasingly select a follow-up study on a lower level than they are eligible to. Hofman *et al.* (2002) rejects this notion and claims that the study choice by a HBO-student is based on feasibility factors as opposed to their VWO counterpart. The amount of information students have about a possible follow up program could influence their study choice.

Most of the students have obtained information about possible follow up programs through various channels like an open house of an university (Foppen, 1982). Four of the ten students in the research of Foppen (1982) felt that they were inadequately informed about the characteristic of the follow up program. All the research projects do conclude that the severity of a follow-up study is an influential factor in the study choice process.

When a student decides to pursue a follow-up study, direct and indirect costs will enter the equation. Direct costs are related to expenses such as tuition fees, transportation costs and possible accommodation costs. Indirect costs are, for example, the absence of a modal income for the student during his student life (Lacante et al 2007), the chance to be penalized through the long-study-fine, and to return the study loans students receive during their follow-up course (Ministerie van OCW, 2011a).

The long-study-fine is imposed for students incapable of graduating from their bachelor or master course one year after a set deadline. This recently imposed rule can have an impact on the study choice behavior of students. This assumption is reinforced in the research project of de Jong *et al.* (2001). De Jong *et al.* (2001) note that especially students with low-educated parents will re-evaluate their study choice if they expect to be subjected to a high study loan. Steens (2011) also refers to certain side factors which influence study choice behaviour. Examples of these side factors are the attractiveness of student life, the location and availability of dorms at a certain location (Steens, 2011), etc. Foppen (1982) also stated in his research that the availability of dorms is important for students in making their study choice. About 54% of respondents in his research find it very important that they could easily find a dorm (Foppen, 1982).

2.6 Conceptual model

On the basis of the theory of planned behavior that is briefly discussed earlier in chapter 2 a conceptual model for analyzing the study choice of VWO students is presented. The model gives an overview of four variables that influence the dependent variable: study choice. In this conceptual model the study choice intentions of students will be measured by the three determinants attitude, subjective norm and perceived behavioral control of the theory of planned behavior.

The four variables are the background characteristics, attitude, social environment and perceived behavioral control. The background characteristics can be seen as an independent variable that could have a certain influence on attitude, the social environment and the perceived behavioral control of the student. The background variables in this research are gender, birth year and study profile. Researcher demonstrates that a difference in gender can result in a differentiation in study choice behavior (Stake & Nicksens, 2005)

The other three variables have a more direct relationship with the dependent variable (study choice). Attitude is classified into intrinsic and extrinsic motivation. With the subjective norm the influence of the study choice by the social environment will be measured. The perceived behavioral control consist of the control level and confidence level for pursuing and certain study. The dependent variable is classified into the certainty of the study choice. Figure 3.1 give a short overview of the conceptual model of study choice. These determinants are applied to the research topic study choice that is discussed in the paragraph 2.5. The actual executed behavior of the theory of planned behavior will be left out in this research scope.

This behavior could not be measured because the study program at the higher educational institutions begins at a later stadium then the investigation of this research.

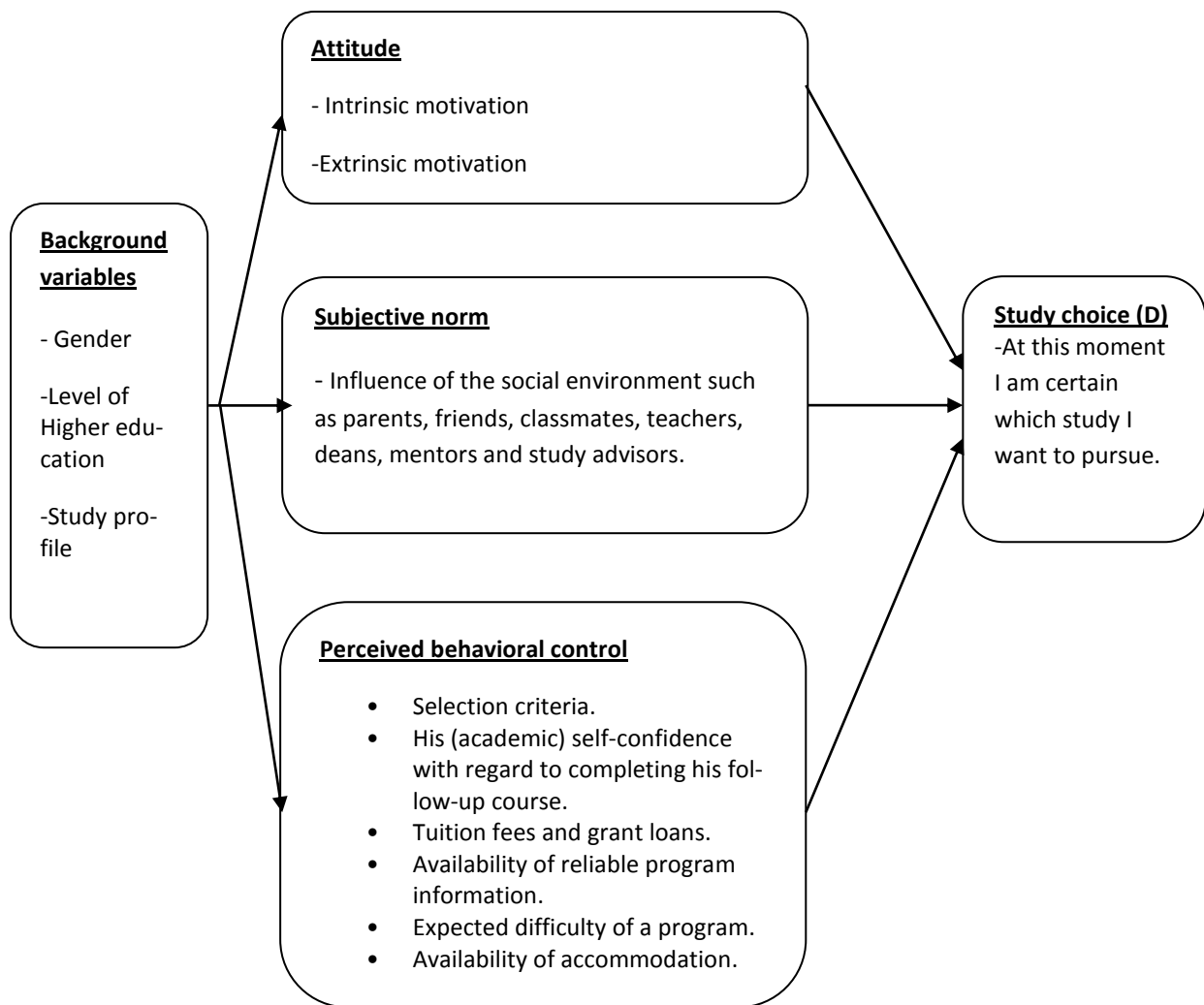


Figure 2.2 the conceptual model of study choice based on theory of planned behaviour Azjen 1991)

2.7 Assumptions

On the basis of the conceptual model and the theory of this study some assumptions are formulated. The following three assumptions will be tested and presented in chapter 5 conclusions, reflections and recommendations:

1) *H₀*: The more intrinsically motivated VWO6 students are for a particular higher education study programme – rather than extrinsically motivated – the more determined and certain they are regarding their future study choice

H1: There is no difference between intrinsically and extrinsically motivated VWO6 students when it comes to their certainty about their study choice.

2) *H₀*: VWO students that perceive a stronger subjective norm will be more certain in their study choice than VWO students that perceive a less strong subjective norm.

H₁: There is no correlation between the influence of the subjective norm and the study choice certainty of VWO6 students.

3) *H₀*: VWO6 students that perceive more obstacles limiting their study choice are less likely to be certain about their study choice.

H₁: There is no correlation between perceived obstacles regarding the choice of study and the certainty of VWO6 students about their study choice.

3 Methodology and operationalization

In this study a literature study and a survey are used to underpin the theory, context and to gather the empirical data. A survey provides a numeric description or opinions of a population by studying a sample of that population. The purpose of a survey research is to generalize from a sample to a population so that inference can be made about some characteristic, attitude, or behaviour of a population (Babbie, 1990).

The data collection questionnaire is used to reach a large group of VWO6 students in a short period of time. Moreover, respondents are guaranteed anonymity which could help to get a higher response rate. The data of the questionnaire can be used to create new theories and/or test the described hypotheses in paragraph 2.7. Through a questionnaire significant difference could be given whereby the researcher could give relationships and difference of variables and background characteristics.

The questionnaire can also be carried out by the researcher or by any number of people with limited affect to its validity and reliability.

However, there are also some disadvantages of this way of data gathering. The written questionnaire contains a limited number of questions, all with closed answer categories. The space to use open questions in the questionnaire is limited which lead to a small chance of comments on the questionnaire and the study choice process of VWO6 students. The respondent can also fill in the questionnaire in different order than the researcher intended that could lead to other answers.

In the first paragraph 3.1 the procedure of the research and respondents is mapped. Paragraph 3.2 will give an overview of the data variables that are used in the questionnaire. How the data is analysed will be described in paragraph 3.3.

3.1 Selection of case studies

This research is conducted in the regions of Almelo, Apeldoorn, Enschede, Hengelo, Zutphen and Zwolle. In total eight different secondary schools participated in this research. Four schools are located in the province Overijssel and four schools in Gelderland. Six of the schools have a Christian background and two of the schools are public schools.

All the schools provide education at of the three secondary educational levels and are above average in size (in terms of student numbers). The target group are the VWO6 students that want to pursue a new study at a higher educational institution.

This group is selected because they have the opportunity to enrol in a higher education institution the coming year. Students that do not want to pursue a higher education study program in the coming study year are left out of the research scope.

To reach the target group, deans of the eight schools were asked if they are willing to cooperate in this research. The written questionnaire was handed out to the students by the author and mentors during lessons of the VWO6 students. The questionnaire for this research has been conducted in the end of April 2012 and can be found in the appendix.

3.2 Questionnaire, operationalization of main variables

The questionnaire consists of 42 closed answer possibilities. All the respondents were asked to provide background information such as gender, birth year and current study profile.

Gender, current study profile and higher education planning were used as control variables in this research to rule out alternative explanations for the findings. The three determinants attitude, subjective norm and perceived behavioural control of the theory of planned behaviour are all processed in the questionnaire. For these kinds of questions a five point Likert scale is used.

Study choice level

Here the respondents are asked to give an indication if they are going to pursue a higher education program and if so at which higher educational level. Through this added question in the questionnaire the difference in study motives, the role of the subjective norm and the obstacles for enrolling in a study program between the different groups HBO and WO study plan could be analysed. The following scale is used to answer this question: (1) University, (2) Higher professional education, (3) Unknown, (4) I am not going to pursue a higher educational program in the coming year.

Certainty of the study choice

One of the important research questions in this study is if the VWO6 students already have made their study choice and if not how far they are in making their study choice.

Besides that VWO6 students could also decide to enrol not in a higher educational study program in the coming study year. Therefore a new measuring scale was created, based on the commitment scales of Bosma (1985) and Germuijs et al. (2006).

The new measuring scale will measure how far the student is in making the study choice.

This is measured using the question: "how far are you in making your study choice". This question is answered using a 5 point Likert scale: (1) I know which bachelor study I want to follow and I know at what institution, (2) I know which bachelor study I want to follow, but I don't know where, (3) I have chosen a bachelor study, but I am uncertain about my choice, (4) I am sure that I will follow a bachelor course next year, but I don't know which study and which institution, but I have reasonable ideas, (5) Next year I am going to follow a bachelor study, but I have no idea about which study or at what institution.

Motivation for the study choice

This variable will be measured in two different motives: the intrinsic and extrinsic motives.

For the intrinsic study choice motives seven questions will be used: "My study must have my interest with respect to the content", "My study must enable my skills", "My study must enable me to solve technical and socially problems", "My study must challenge my capabilities", "My study must give me a good feeling and pleasure", "My study should give me more respect from persons and status", "I study should give me plenty of time for other things". The seven statements form a Cronbach alpha of 0,63. Cronbach's alpha is a way to determine whether multiple items form a scale together. This is tested on the basis of the cross-correlation of the various items. A general rule is applied that the items with an alpha of 0.60 or higher can be used.

The second variable, which measures the extrinsic study choice motives, consists out of four questions. The four questions were formulated as: "The study of my choice should lead to good opportunities for a job", "When I finish the study of my choice, my diploma should foresee in my life-support", "With the study of my choice I must be able to get a nice job", "With the study of my choice I should get a job with a good salary". When the author used these questions the Cronbach alpha will be at an acceptable level of 0,67.

A third variable was added namely; to which extent a student knows what kind of characteristics a certain study has. Does the student think that the study will be interesting or will lead to a good job?

This measuring scale was added because Ajzen (1991) believes that a specific motivation arises through a specific belief and evaluation of an attitude.

The scale consists of 11 items that are related to instrumental and expressive study choice motives. The answers that could be given varies between 1 (form no picture) and 5 (form a comprehensive picture). Seven of the items had to do with intrinsic motives. These seven items had a Cronbach alpha of 0,78. Removing the item "My study should give me more respect from persons and status" lead to a higher alpha of 0,79. The four items of extrinsic motivation has a Cronbach alpha of 0,8. The statements that were used in the first two scales were transformed into statements that measure the influence of the instrumental study choice motives and expressive study choice motives on study choice. This method is used in the theory of planned behaviour by Ajzen & Fishbein (1980) to analyse the influence of the different variables such as attitude, subjective norm and perceived behavioural control.

Subjective norm

The social environment will be measured using three questions to explain the role of the social environment in making a study choice decision. In this investigation the respondents can describe what kind of role the peer groups defined by parents, friends, classmates, teachers and deans/study advisors/mentors play in making a study choice.

The first question measures to which extent students discuss their study choice with the five peer groups.

The second question indicated whether or not the social environment provides the student with a clear advice about their study choice. The answers that could be given varies between 0 (no talk or advise) and 4 (a comprehensive advise). The third question measures the influences of the five parties on the study choice. Here the question relates to which extent the opinion of the five parties is important for the student in making a study choice. The answers that could be given vary between 1 (not important) to 5 (very important). The influence of the five parties is measured in 15 items that have a Cronbach alpha of 0,83.

Perceived behavioural control

Previous researchers like Kers (2009) mention that students can see some difficulties in pursuing a specific study. In this research the construct of control and confident a student can have to pursue a certain study are combined in nine statements.

The student can indicate to which extent they agree or disagree with the nine statements. The answers that could be given varies between 1 (disagree) to 5 (agree). The nine statements are: "If I should be drawn for a study program, then I will not registered myself for this program", "When I expect that I will not be admitted for a certain education, then I will not registered myself for this program", "When I expect that the study would be too difficult for me, then I will not registered myself for this program ", "When I think that study chances of success are small, then I will not registered myself for this program", "When my intended study program is more expensive than the average study program, then I choose another study program ", "When there is small availability of dorms in the city, then I will study somewhere else", "I am not capable to make a study choice because of the lack of information about certain courses", "Because I have not visited an open day I cannot make a study choice", "At the moment I cannot make a study choice because I cannot oversee the financial consequences". The nine statements form a Cronbach alpha of 0,66. Removing one of the items will lead to a lower Cronbach alpha than the 0,66 of the nine items in total.

3.3 Data Analysis

For analysing the data the program SPSS is used. The completed questionnaires are entered in a SPSS data base. The data was cleaned before the data could be analysed.

Students that do not want to pursue a higher education program are left out in the research scope. 17 VWO6 students indicated that they have no plans to pursue a higher educational program that resulted in a reduction of the respondents of 367 to 353. Furthermore there is some non-response on a few variables. Besides that some items are removed to realize a reliable Cronbach alpha of 0,6 or higher. The results in chapter 4 are displayed in frequencies tables. All the data that is displayed does have a Cronbach alpha score of 0,6 or higher. Some of the questionnaires are handed out through the deans or teachers and others by the author itself, this means that not every school underwent the same procedure to require the data.

3.4 Respondents

In total 353 students participated in this research project, that is 0,01% of the Dutch VWO6 students in the Dutch educational system (CBS, 2010). 70% of all the VWO6 students of the eight schools were approximated to cooperate in the research investigation. All approached students filled in the questionnaire. 6% of the respondents indicate that they didn't want to pursue a higher educational study program in the coming study year. That is in line with what *de Graaf et al.* (2006) stated in their research that 97% of the VWO6 students will follow a higher educational study program after they graduated. Table 3.1 gives an overview of the background characteristics of all the respondents.

<i>Background variables</i>	<i>Numbers</i> <i>(n= 353)</i>
<u>Gender</u>	
Male	134 (39,5%)
Female	219 (60,5%)
<u>Birth year</u>	
1991	1 (0,5%)
1992	18 (5%)
1993	100 (28,1%)
1994	221 (62,7%)
1995	11 (3,3%)
1996	2 (0,5%)
<u>Profile</u>	
Culture and society (C&M)	68 (19,3%)
Economy and society (E&M)	124 (35,1%)
Nature and health (N&G)	154 (42,5%)
Nature and technique (N&T)	128 (36,2%)
<u>Planning education level</u>	
WO	264 (71,9%)
HBO	66 (18%)
Unknown	23 (6,3%)
No follow up study	14 (3,8%)

39,5% of the respondent were male and 60,5% female. These figures differ with the national average where 46% of the students are male and 54% female (CBS, 2010). It could be that Christian secondary educational schools represent more female students than the national average of female students. Most of the student was born in the year 1994, about 62,7%. The birth year varies between 1991 and 1996. Some of the respondents did follow 2 or more profiles; most of the students follow the profile nature and health (42,5%). The profile culture and society was the least popular (19,3%). The national figures differ slightly, about 31% follow the profile nature and health. Half of the VWO6 students follow the profile economy and society or the profile nature and technique. Only 15% of the VWO6 students follow the profile culture and society.

96% of the VWO6 students say that they want to pursue a HE program in the coming study year. These outcomes corresponds with the study of de Graaf et al (2006) that mentioned that 97% VWO6 students will pursue a HE study program. Of all the respondents 72% wants to follow a study program at a university and 6% does not already know if they want to pursue a HBO or WO study program. That is in line with the national figures where 71% of VWO6 students choose a study program at a university and 13% a higher professional education (CBS, 2010).

3,8% are certain that they don't want to follow a higher educational program in the coming study year. This group will not be mentioned further on in this research. Therefore table 3.2 gives a short overview of what kind of plans these kinds of students have after they graduated.

<i>Table 3.2 Alternative</i>	<i>Numbers (n=14)</i>
I have no idea what I'm going to do next year	4 (28,6%)
I want to work in the coming year	2 (14,3%)
The financial risks are too high to follow a higher education program	1 (7,1%)
Otherwise(in all the cases: travelling)	7 (50%)

Half of the respondents that don't want to follow a higher educational program in the coming year are planning to travel. 28,6% of the respondents have no clue what to do the next year and could still follow an higher educational program in the coming study year. The results in chapter 4 are displayed in frequencies tables. The background variables will be tested in this research to see if there is any significant difference in the certainty of study choice between these groups. First of all it is meaningful to compare the background characteristics with the national figures before the outcome can be generalized.

4 Results

4.1 Introduction

In this chapter empirical results are represented on the basis of the variables that are described in the conceptual model in chapter 2. First, the empirical results of the dependent variable; the certainty of the study choice will be discussed. After that the results of the three independent variables; attitude, subjective norm and perceived behavioural control will be represented and analysed.

4.2 Certainty about study choice

Students were asked if they already know what kind of higher education study they want to pursue and at which institution. This question ‘measures’ study choice certainty, which is the dependent variable in this study (see also the conceptual model in chapter 2). Table 4.1 gives an overview of the total score of the study choice certainty of the 353 respondents that filled in the specific question.

Table 4.1 Study choice certainty of VWO6 students (in %, N = 353)

	Total(n=353)
I know which bachelor study I want to follow and I know at what institution	(66%)
I have some doubt about my higher educational study choice	(34%)

Two-thirds of the VWO6 students (66%) know which bachelor study they want to follow and at what kind of institution. They are, according to our view in this study, certain about their future study. 34% of the respondents have at least some doubts about where they want to pursue a study program and / or what for kind of study. The kind of uncertainly differs. Only a small number of students seem to have hardly a clue about their Bachelor study, except for the fact that they do want to study (3%)

This is by and large in line with the research outcome of Verkroost (2007) that mentioned that 25% have some doubt about their study choice. When we look at the study choice certainty related to the background variables (gender, profile and educational planning) we see some remarkable statistics.

For gender there is no significant difference between male and female students about the certainty of study choice in this study. There are some significant differences with regard to the certainty of study between the different study profiles that are shown in table 4.3.

Table 4.3 study choice certainty by study profile (in %, N= 121)

Study profile	Certainty of study choice	p
C&M	0.35	0.365
E&M	0.19	0.028*
N&G	0.43	0.141
N&T	0.36	0.272

(* significant $p < 0.05$, scale 1 certain, scale 0 uncertain)

The study choice certainty of students with varied study profiles is tested through a Anova Test. Students that follow an E&M are not very certain about their study choice. Table 4.1 indicates that 66% of the students have already decided which bachelor program they want to follow and where.

Table 4.4 Education level

	HBO (n=66)	WO (n=264)	p
Certainty about study choice	1.2043	1.4874	0.000*

(scale 1 means no doubt at all and 2 at least some doubt)

There is also a significant difference in the certainty of study choice between the educational level programs WO and HBO. HBO students that choose an HBO study program have significant less doubt about their study choice than HBO students that want to pursue a WO study program in the coming study year. All the results about the certainty of the study choice of HBO students in this study can be found in the appendix.

4.3 Attitude

Attitude is the first independent variable that could influence the study choice certainty to be addressed (see also the conceptual model in chapter 2.6). Table 4.5 shows if the respondents have a view of the capabilities of certain higher educational study programs on an average scale from 0 ('not') to 4 ('very clear'). The extrinsic motives are displayed in the blue print.

Table 4.5: The beliefs of VWO6 students about study programs (averages)

The view on certain study programs	Total (n=353)
To which extent do you have a view of how interesting a certain study will be	3.0
To which extent do you have a view of how your study choice will challenge you?	2.9
To which extent do you have a view of a certain study choice will lead to a nice job?	2.8
To which extent do you have a view of how your study choice will enable you to develop yourself?	2.8
To which extent do you have a view of how your study choice will give you a good feeling and pleasure?	2.8
To which extent do you have a view of a certain study choice will provide you of your livelihood?	2.7
To which extent do you have a view of a certain study choice will lead to a job?	2.6
To which extent do you have a view of a certain study choice will lead to a well-paid job?	2.6
To which extent do you have a view of how your study choice will enable you to solve technical and socially problems?	2.4
To which extent do you have a view if your study choice will give you more status and respect?	2.2
To which extent do you have a view how much free time a certain study will give?	2.2

(0= no view....4= comprehensive view)

Four of the five motives of which students have the most comprehensive view are intrinsic in nature. The respondents have a comprehensive view on whether the study is interesting for them, challenging, will develop them and if the study will lead to a nice job.

Their view is less clear with respect to status, respect and free time left as regards their future study. To determine the student's attitude towards the certainty of study choice not only their beliefs about their future study, but also the importance of the intrinsic and extrinsic motives to students need to be determined. Table 4.6 represents the importance of the different motives for pursuing a certain study program.

Table 4.6 Importance of study choice motives of VWO6 student (averages; N = 353)

	Total(n=353)
With the study of my choice I must be able to get a nice job	3.5
My study choice have my interest with respect to the content	3.5
My study choice give me a good feeling and pleasure	3.5
When I finish the study of my choice, my diploma could foresee in my life-support	3.2
My study choice challenge my capabilities	3.1
My study choice enable my skills	3.1
The study of my choice will lead to good opportunities for a job	3.0
My study choice give me plenty of time for other things	2.7
With the study of my choice I should get a job with good salary	2.4
My study choice enable me to solve technical and socially problems	2.1
My study choice should give me status and respect	1.4
(0=not important...4= very important)	

The degree of importance between the intrinsic and extrinsic motives does not differ much from each other. This is an expected outcome because different authors (Hofman *et al.* 2002; Verhaeghe 2011) disagree about the importance of study choice motives. Important for the students is the chance to get a nice job with their study choice, the interestingness of the study and the feeling of pleasure of a certain study choice. Obtaining a higher status and getting more respect does not play an important role in choosing a certain study program. It seems to make sense that students have a better view about the content of the study (intrinsic motives) than the opportunities of the study (extrinsic motives) because first of all it has to be interesting and challenging to help them to get a nice or well-paid job. So they will gather the data about the content of the study before they pursue the study program.

But after all studying is a way to realize a target such as getting a job and foresee in life-support. Azjen en Fishbein (1980) describe that the behavioral beliefs must be multiplied by the outcome evaluations.

The belief and evaluation of an attitude are correlated with each other and will establish a specific motivation that would in their way influence their intention (Azjen, 1991). In this setting it means that the view of a certain study program must be multiplied with the importance of the study choice motives. This result is presented in table 4.7.

Table 4.7 Attitudes	Total (n=352)
My study choice have my interest with respect to the content	10.7
With the study of my choice I must be able to get a nice job	10.4
My study choice give me a good feeling and pleasure	9.8
My study choice enable my skills	9.2
My study choice challenge my capabilities	9.0
When I finish the study of my choice, my diploma could foresee in my life-support	8.9
The study of my choice will lead to good opportunities for a job	8.2
With the study of my choice I should get a job with good salary	6.7
My study choice give me plenty of time for other things	6.0
My study choice enable me to solve technical and socially problems	5.6
My study choice should give me status and respect	4.0
Overall extrinsic motivation	8.5
Overall intrinsic motivation	7.8

(0=no effect...16=extreme effect)

The motives interest, feeling and pleasure and the chance to get a nice job are the main attitude issues that play an important role when it comes to pursue a certain study program. Students attach almost no value if the study choice will enable the student to solve technical and socially problems and will give them status or respect. Overall it seems that the choice of a study program is more based on the extrinsic motives of the student than intrinsic motives.

4.4 Subjective norm

As mentioned in the conceptual model of chapter 2.6 the social environment of the students plays a role in the study choice. Table 4.8 shows to which extent students communicate with persons in their social environment about their study choice.

Table 4.8: Interactions on study choice of VWO6 students with important others (in %; N=352)

<i>Total (n=352)</i>		
	Not or limited	<i>Regularly or extensive</i>
<i>Parents</i>	(12%)	(88%)
<i>Friends</i>	(24%)	(76%)
<i>Classmates</i>	(59%)	(41%)
<i>Teachers</i>	(87%)	(13%)
<i>Deans, mentors and study advisors</i>	(68%)	(32%)

The study choice is mainly discussed with the parents and friends of the student. The research of Warps (2007) indicated that 60% of the students talk to their parents about their study choice. In our study this percentage is much higher. Friend and classmates could be the same person for the student, however not all the classmates can be seen as a friend for the students. Students interact to a far lesser extent with deans, mentors, study advisors and teachers about their future study. Particularly teachers are often not seen as a sparring partner. The fact that deans are more involved as teachers does not surprise: it is one of the main roles of the deans to advice students about their further study capabilities. However, about two-thirds of the respondents report that they do not discuss these issues with their dean. This is compared to previous research a high figure. For example Verhoeven *et al.* (2000) mention that 66% of the students discuss their study choice with deans, mentors, study advisors and teachers.

Besides the measurement of contact with important referents in the social environment, it is relevant to see whether or not this social environment provides the student a clear advice about their study choice (see Table 4.8).

Table 4.9: Clearness of advice from actors in the social environment of VWO6 students (in %, N= 352)

Table 4.9 advice of the social environment			Total (n=352)
	Not or limited	Regularly or extensive	Average score
Parents	(37%)	(63%)	2.7
Friends	(65%)	(35%)	2.0
Deans, mentors and study advisors	(65%)	(35%)	1.8
Classmates	(86%)	(14%)	1.3
Teachers	(88%)	(12%)	1.2

(scale 0 till 2, not or limited, regularly or extensive 3 and 4)

In the eyes of the respondents, their parents give them the clearest advice about their study choice. About a third of the respondents find that their friends and deans, mentors and study advisors advices them clearly. The information they receive from classmates and teachers is considered to be less clear.

If the students do not find the advice from persons in their social environment important, it logically cannot play a single role in the study choice process of the student. Thus, it is important to find out the value student's attach to the opinion of the persons in their social environment. Table 4.10 explores the importance of the opinion of the social environment in the eyes of the students.

Table 4.10 the importance of the opinions of actors in the social environment of VWO6 students (in %, N = 352)

	Total (n=352)		
	Not or limited im- portant	Important or very important	Average score
Parents	(36%)	(64%)	2.7
Friends	(74%)	(26%)	1.8
Classmates	(80%)	(20%)	1.5
Teachers	(87%)	(13%)	1.1
Deans, mentors and study advisors	(94%)	(6%)	0.9

(0= not important....4= very important)

This outcome is to a large extent similar to the previous table. In about two-third of the cases parents give clear advice and student tends to find this advice important. For a large majority of the student, the opinions from the others are not important to them when they are making a study choice. Striking here is the position of deans, mentors and study advisor. Although about a third of the student say that they give clear advice (see previous table), this good advice does not really play a role. It has not been part of this study to find out why this is the case; it certainly would be interesting to explore why a dean's opinion – in many cases judged as clear – is not taken into account.

Also mentioned by Azjen & Fishbein (1980) is that the normative beliefs must be multiplied with the motivation to comply. The belief and motivation of the meaning of the social environment correlates with each other and will establish are judgment about the meaning of the social environment that in their way could influence their intention (Azjen, 1991). For this specific research it means that the extent of advice of the social environment must be multiplied with the importance of the opinion of the social environment in the eyes of the student. This result is presented in table 4.11.

Table 4.11 Influence of the social environment

	Total (n=352)
Parents	7.9
Friends	4.4
Deans, mentors and study advisors	3.9
Teachers	2.2
Classmates	2.0

(0=no influence...16=extreme influence)

The parents have by far the most influence on the study choice of their child. This effect is not overwhelming with a score of 7.9 which is not half of the maximum score of 16. However the authors Lacante & Schodts (1997) indicate that only 25% of the parents have a notable influence on the study choice of their child. The friends have little influence on the study choice of the student. The influence of the teachers and classmates is negligible.

4.5 Perceived behavioural control

As mentioned before, attitudes and perceived social norms are expected to play a role in explaining behaviour, but even in the case of positive attitudes and norms particular circumstances or event may influence behaviour. For this reason a number of potential constraints have been selected and measured. Table 4.12 gives an indication on whether students are reluctant of enrolling in a certain study program because of the potential obstacles.

Table 4.12 Obstacles for students to enrol in a specific HE study program

Total
(n=353)

When I think that chances of success are small, then I will not register myself for this program	2.0
When I aspect that I will not be admitted for a certain education, then I will not register myself for this program	1.8
When I aspect that the study would be too difficult for me, then I will not register myself for this program	1.1
I am not capable to make a study choice because of the lack of information about certain courses	0.9
When my intended study program is more expensive than the average study program then I choose another study program	0.9
When there is small availability of dorms in the city, then I will study somewhere else	0.9
If I should be drawn for a study program, then I will not register myself for this program	0.7
At the moment I cannot make a study choice because I cannot oversee the financial consequences	0.5
Because I have not visited an open day I cannot make a study choice	0.4

(scale 0= disagree..4=agree)

In total, we can see that the students do not see obstacles that might affect the certainty of their study choice. This outcomes contrast previous studies. For example, Foppen (1982) mentions that four of the ten students felt that they were inadequately informed about the characteristic of the follow up program and could not make a well-considered study choice. At the time, we should keep in mind that Foppen's outcomes date back about thirty years and in terms of information changes have taken place.

One might argue that the opportunities for being well-informed have increased over the years. The most important obstacles reported upon are admission rules for a certain education and the chances of a study failure. This is in line with the research of de Jong *et al.* (2001) who stated that graduates increasingly select a follow-up study on a lower level than they are eligible to. Drawing for a study program and not be able to oversee the financial consequences will not cause difficulties for pursuing a certain study program.

4.6 Background characteristics related to study choice

In this sub section the significant differences between the variables gender, education level and study profile are shown in table 4.12. The complete table of all the items and the test values can be found in Table B.1 (appendix B).

For the background variable gender there is only a significant difference on the key variables in the conceptual model (attitude subjective norm and perceived behavioural control).

Table 4.13 gender related to the core variables

	Gender		
	Male	Female	P
Behavioural control	2.13	1.94	0.048*

(Significant by $p < 0,05$)

Table 4.14 detailed difference on the core variables related to gender.

	Male (n=145)	Female (n=222)	P
My study choice should give me status and respect	2.09	1.65	0.000*
<i>Influence parents</i>	2.49	2.80	0.002*
<i>Influence Friends</i>	1.75	1.99	0.025*
<i>Influence teachers</i>	1.36	1.10	0.008*
If I should be drawn for a study program, then I will not registered myself for this program	0.91	0.58	0.001*
When I aspect that I will not be admitted for a certain education, then I will not registered myself for this program	2.00	1.72	0.002*
When I think that study chances of success are small, then I will not registered myself for this program	2.13	1.89	0.015*
Because I have not visited an open day I cannot make a study choice	0.60	0.33	0.000*
At the moment I cannot make a study choice because I cannot oversee the financial consequences	0.70	0.41	0.005*

Male students see more obstacles than female students for enrolling in a specific study program. Male students find status and respect significantly more important than female students when it comes to choosing a study program.

This is in line with the research of Warps (2009) that also stated that male students find status more important than female students. Parents and friends have more influence on the study choice of female students than of male students. On the other hand teachers have more influence on the male students than female students when it comes to the study choice. These are interesting findings because previous research did not mention such differences in influence of the social environment on male and female students. Overall the male students see significantly more obstacles to enrol in a certain study program compared to female students.

The difference in detail with the educational level and the variables that determine certainty of study choice, according to my conceptual modelling, is depicted in table 4.15. The outcome on this subject with all the key variables is not significant and can be found in table B.2 (appendix B).

Table 4.15 detailed difference on the core variables related to educational level	Education level		
	HBO (n=66)	WO (n=264)	P
My study must enable me to solve technical and socially problems	2.36	1.76	0.000*
My study must give me a good feeling and pleasure	3.11	3.37	0.003*
<i>Influence teachers</i>	1.29	0.92	0.004*
<i>Influence deans, mentors and study advisors</i>	1.75	1.45	0.048*
When my intended study program is more expensive than the average study program then I choose another study program	0.80	1.08	0.047*

(Significant by $p < 0,05$)

Students that want to pursue a HBO study program find that their study will enable them to solve technical and social problems significantly more important than students that want to pursue a WO study program. Teachers and deans, mentors and study advisors have significantly more influence on students that want to pursue a HBO study program then students that want to pursue a WO study program.

With respect to the new penalty rule for the long study fine it is interesting that students are not afraid to enrol in a study program even if the study program is more expensive than the average study. Besides that it is interesting that HBO students are looking less at the cost of the study program than WO students because they are in general poorer students because of the social background differences.

The difference in detail between the study profiles and the variables that determine certainty of study choice, according to my conceptual modelling, is depicted in table 4.16. The outcome on this subject with all the key variables is not significant and can be found in table B.3 (appendix B).

Table 4.16 detailed difference on the core variables related to study profile.	Study profile				
	C&M (n=67)	E&M (n=124)	N&G (n=154)	N&T (n=128)	p
The study of my choice will lead to good opportunities for a job	2.56	2.84	2.83	2.89	0.045*
When I finish the study of my choice, my diploma could foresee in my life-support	2.69	2.93	3.04	3.02	0.022*
With the study of my choice I should get a job with good salary	2.15	2.63	2.50	2.55	0.000*
My study must have my interest with respect to the content	3.37	3.17	3.31	3.28	0.003*
My study must enable me to solve technical and socially problems	1.98	2.11	2.43	2.41	0.002*
<i>Influence parents</i>	2.55	2.68	2.77	2.64	0.009*
When my intended study program is more expensive than the average study program then I choose another study program	1.21	0.99	0.75	0.64	0.020*

(Significant by $p < 0,05$)

Students that follow the program C&M find the probability of a job, a good salary and that their diploma will foresee them in their life-support less important than students that follow any other study profile.

This is not a surprising outcome because the public opinion is that students with a C&M profile often choose an art higher education study program that is often related to a low start salary in compare with other higher education studies (Tweede fase adviespunt, 2005). Students with the profile E&M score the lowest score on the item study choice must have my interest with respect to the content. Parents have significantly the most influence on students that follow the study profile N&G. The students with a N&T profile is the last group that cares if their study choice is more expensive than the average study program.

In the first section (4.1 till 4.6) of this chapter the results of the certainty of study choice, attitude, subjective norm, perceived behavioural control and the background variables are described of this study. In the second section (4.7 & 4.8) of this chapter the correlation between the key variables (attitude, extrinsic motivation, intrinsic motivation, subjective norm and perceived behavioural control) and the dependent variable (certainty of study choice) will be tested. Finally a regression analysis will be represented.

4.7 Correlations

To see if the key variables from our conceptual model are related to each other, we have calculated the correlations between attitude, extrinsic & intrinsic motivation, subjective norm, perceived behavioural control and the certainty of study choice. Table 4.17 shows the bi-correlations between a number of variables. The correlation can be positive or negative. A positive correlation means that when one variable scores higher the other variables also scores higher. A negative correlation means higher scores of one variable are related with lower scores on the other variable. The further away the correlation is of zero, how stronger the correlation between the variables will be.

Table 17: correlations between the key variables

	Study choice certainty	Extrinsic motivation	Intrinsic motivation	Subjective norm	Perceived behavioural control
Study choice certainty	1	-0.039	-0.019	0.006	0.229**
Extrinsic motivation	-0.039	1	0.492**	0.199**	-0.036
Intrinsic motivation	-0.019	0.492**	1	0.138**	-0.038
Subjective norm	0.006	0.199**	0.138**	1	-0.102
Perceived behavioural control	0.229**	-0.036	-0.038	-0.102	1

** Correlation is significant at the 0.01 level

The certainty of study choice has a moderate positive correlation with perceived behavioural control. Extrinsic motivation had a high positive correlation with intrinsic motivation and moderate positive correlation with the subjective norm judge as intrinsic motivation.

4.8 Regression analysis

To see if the explanatory variables attitudes, social norm and behavioural controls explain certainty in study choice, a linear multiple regression analyse has been run. First of all the model summary the R square is shown in table 4.18 that can be described as a goodness-of-fit. The results of the regression analysis itself are presented in table 4.19. Here is shown to what extent the independent variables X (extrinsic & intrinsic motivation, subjective norm and perceived behavioural control are linearly related to the dependent variable Y (certainty of study choice). Also the direction of relation between the variables is important.

Model Summary

Model	R	R Square
1	,088	,063

The R Square in this study indicates that the total variation in the certainty of study choice for 6,3% can be explained through their linear regression analysis that is represented in table 4.19. This means that the independent variables (attitude, subjective norm and perceived behavioural control) can hardly predict the dependent variable (certainty of study choice).

Table 4.19 Regression analysis of the determinants Theory of Planned Behavior related to the certainty of study choice.

	B	S.E.	Wald	Df	Sig.	Exp(B)
Extrinsic motivation	,036	,044	,696	1	,404	1,037
Intrinsic motivation	,001	,042	,001	1	,979	1,001
Subjective norm	-,015	,042	,122	1	,727	,985
Perceived behavioural control	-,942	,217	18,876	1	,000	,390
Constant	2,354	,544	18,729	1	,000	10,524

$$\text{Conscious study choice} = 2,354 + 0.036EM + 0.001IM - 0.015SN - 0.942PBC.$$

The regression analysis shows that the relation between perceived behavioural control and study choice certainty is significant ($p < 0,001$). The other three variables extrinsic & intrinsic motivation and social environment have no significant relation with the study choice certainty. The result of perceived behavioural control indicates that restrictions lead to a lower certainty of study choice.

Students that see obstacles for enrolling in a specific study program will lead to a decrease of their study choice certainty with 0.942. If students selected their study based on obstacles it will decrease the chance that the student will be more certain about their study choice with 0.390.

5 Conclusion

5.1 Introduction

In this research the study choice certainty of VWO6 students is investigated through the theory of planned behavior (Ajzen, 1988) in which the variables attitude, social environment and perceived behavioral control are expected to explain behavior (such as for example study choice). Therefore, the study choice certainty is analyzed by these three different components. The research questions of chapter 1.4 will be answered based on the results that are listed in the previous chapter. The question “have VWO students made their study choice just before they graduate from secondary school” will be discussed in paragraph 5.2. In paragraph 5.3 the tested assumptions mentioned in chapter 2 will be discussed. Which motives in practice play a role in study choice behaviour of VWO6 students will be analyzed in paragraph 5.4. How can certainty in study choice theoretically be explained will be discussed in paragraphs 5.1 till 5.6.

5.2 Study choice certainty

The first question that will be answered in this chapter is: have VWO students made their study choice just before they graduate from secondary school? The results in the previous chapter indicated that 66% of the VWO students in the month April of the last study year already know what kind of bachelor study they want to follow and at which institution. They are ‘certain’ about their study plans for the coming year. A third of the VWO6 students do not know where they want to follow a bachelor study and/or what kind of study. In comparison, research such as Verkroost (2007) and Kers (2009) indicate other results when it comes to the study choice moment of VWO students. Kers (2009) describe that 52% of the students know where to follow a study and what kind of study. Verkroost (2007) did a small investigation of the study choice moment but also concludes that more than half of the VWO student made their study choice just before the exam period and that only 30% of the VWO students did made their study choice before their sixth grade. It seems that the VWO6 students from our sample make their study choice in an earlier stage then 5 years ago.

Another interesting outcome in this study is that VWO6 students that want to pursue a WO study program have significant more doubts about their study choice than VWO6 students that want to pursue a HBO study program in the coming study year.

5.3 Assumptions

How can certainly about study choice be explained? According to the theory of planned behavior there are three factors that determine this. Three hypotheses have been formulated to test if these factors explain the student's behavior. The first hypothesis is formulated as follows:

1) *Ho*: The more intrinsically motivated VWO6 students are for a particular higher education study programme – rather than extrinsically motivated – the more determined and certain they are regarding their future study choice.

Table 5.1 Assumption 1

Scores

	F	Sig.
Intrinsic motivation	1,192	0,276

*Significant($p < 0.05$)

The null hypothesis cannot be rejected ($p > 0, 05$), this means that no effect can be seen that intrinsic motivation will lead to a more determined and certain study choice of VWO6 students.

2) *Ho*: VWO students that perceive a stronger subjective norm will be more certain in their study choice than VWO students that perceive a less stronger subjective norm.

Table 5.2 Assumption 2

Scores

	F	Sig.
Subjective norm	1,104	0,294

*Significant ($p < 0.05$)

The null hypothesis cannot be rejected ($p > 0,05$), this means that no effect can be seen that VWO students that perceive a stronger subjective norm will be more certain in their study choice than VWO students that perceive a less strong subjective norm.

3) *Ho*: VWO6 students that perceive more obstacles limiting their study choice are less likely to be certain about their study choice.

Table 5.3 Assumption 3

Scores

	F	Sig.
Subjective norm	7,915	0,005*

*Significant ($p < 0.05$)

The null hypothesis can be rejected ($p > 0,05$), this means that an effect can be seen that VWO6 students that perceive more obstacles limiting their study choice are less likely to be certain about their study choice.

5.4 The motivations determines study choice

The second question that will be answered is: which motives play a crucial role in practice a role in study choice behaviour of VWO students. In comparison with previous findings of other authors this research shows some similarities and differences. In this research it is shown that extrinsic motives play a more dominant role compared to intrinsic motives when it comes to the study choice of VWO6 students. The important motives are the interestingness of the study, good feeling and pleasure with the study choice and it must challenge the capabilities of the students. Remarkable is that the VWO6 students find it more important to get a nice job then actually getting a job at all. The result of this research investigation is in line what Verkroost (2007) that described that extrinsic motives are the main motives for the VWO students to

Hofman *et al.* (2002) stated: that the study choice is namely focused on intrinsic motives. Warps (2009) indicated in his research that male students find status more important than female students that goes with their study choice. This research investigation confirms this outcome.

5.5 The influence of the social environment

Previous research such as Foppen (1982), de Jong *et al.* (2001) indicates that students can be influenced by their social environment when it comes to their study choice. To which extent To investigate how certainty theoretically can be explained the key variable subjective norm is analyzed in chapter 4. The results demonstrated in this research investigation, as in many other research papers, indicate that the parents have the most influence on the entire social environment of the student, however, their effect is not overwhelming.

Besides that students find the opinion of their friends more important than the opinion of their teacher, deans, mentor or study advisor. There is not much influence of the teachers, deans, mentors and study advisors who prepare the students for the higher education. In this respect there is still a challenge for the Dutch educational system. The opinions of the classmates do not have an impact on the study choice. Almost half of the respondents regularly talk with their classmates but do not give this input any value when it comes to making a study choice. The outcome of this research on the area of the influence of the social environment slightly differs from previous research. The research of Foppen (1982) indicates that the parents have by far the most influence on the study choice of their child. However Cobert (2009) states that the teachers had more influence than the friends of the students in the Flemish education which contrasts the result in this research investigation. It seems that the conclusion of Crone (2008) that students of 16 years and older can make an independent study choice based on their own interest is correct. Several studies show that students consult their social environment, especially the parents, when making their study choice. This research shows that the social environment has no influence on the certainty of the study choice of VWO6 students.

5.6 Obstructing factors

Enrolling in a certain study program is not always a smooth process. Students can encounter some obstructing factors in the selection of a study program, which may have an impact on (the moment of) their choice. To investigate how certainty theoretically can be explained the key variable perceived behavioural control is analyzed in chapter 4.

A notable outcome in this research is that students that have some doubt about their study choice are significant less certain about their study choice than students that already have chosen their bachelor program. Also male students see significantly more obstacles than female student for enrolling in a specific study program. However the VWO6 students find that they have enough information to make a study choice.

The research of Kers (2009) previously mentioned that students complain that they have insufficient information to make a well informed study choice. That research sample did not include VWO students but demonstrated a different outcome than the outcome of this research investigation. This research investigation does not confirm the statement of de Jong *et al.* (2001) that concluded that VWO graduates increasingly prefer a HBO program over a WO program. This research indicated a slightly grow (72% versus 70%) when it comes to VWO students that choose a WO study program compared with the research of de Jong *et al* (2001).

The availability of a few dorms has little to no value when it comes to pursuing a certain study program at a specific location.

6 Research limitations, further research and recommendations

6.1 Limitations of this study

The data of the questionnaire is gathered in the lessons of the VWO6 students. Unfortunately in only two of the eight schools the research investigation is perceived by the author, in the other six schools the questionnaire is distributed through the deans and teachers of the school. Because of this approach the author had no view on how the questionnaire is filled out by the respondents and collected by the deans and teachers. Through this approach the respondents could fill in the questionnaire with two or more persons whereby a respondent could fill in a question based on the opinion of his classmates. However all the six schools that conducted the questionnaire by themselves had received a detailed overview on how the questionnaire had to be carried out. In this study each individual had an equal probability of being selected. This all didn't lead to a threat for the internal validity of this research. The outcome of this study could not be generalized in its whole because of the narrow characteristics of the participants. In this study there were more female students selected than the national average of female students. Besides that the data is gathered in a classroom on an individual basis and could therefore only be generalized with other research with the same method of gathering the data.

The paper questionnaire ensured a high response rate of students that were present at the lessons. Another limitation is that this study used the theory of planned behavior that described three key variables (attitude, subjective norm and perceived behavioural control) that only say something about the study choice certainty of VWO6 students and nothing about the dropouts in the HE study programs. Still the theory of planned behaviour was useful in this study for analyzing the study choice certainty that describe how students come to a study choice decision.

The last limitation was that not all VWO6 students of the eight schools could be reached in the research. Because of the upcoming exam period not all the students were present in the lesson where the questionnaire was taken. The students who were not present didn't have another chance to fill in the questionnaire. Finally this research investigated only the study choice on the basis of the theory of planned behaviour.

A direct investigation with the study choice of VWO6 students and the drop out problem in the higher educational institution would lead to a better understanding why students eventually drop out in the higher educational institutions.

6.2 Further research

It would be interesting to know if the students that cooperated in this research investigation would still follow their chosen higher education study program after one year or whether they really choose what they thought to choose now. Through that research investigation it becomes clear what kind of students did drop out and who still follow their study program. This calls for longitudinal research. Most of the students that drop out stop their educational study program in the first year and it is therefore interesting to know why they decide stop to follow their educational program. To get valued results it would be advisable to use the 3 variables attitude, social environment and perceived behavioural control when analysing the outcome. Nevertheless, this research reveals that attitudes and subjective norms are not sufficient factors to explain the certainty of the students regarding their study choice. In addition, more in-depth researches should be conducted to investigate this issue and come up with a theory to explain the certainty of study choice.

It would also be interesting to see if there is a significant difference in motivations for the study choice between drop outs and those who keep following the study program of their choice. Another interesting research investigation will be if a high value of study choice certainty will lead to a lower drop-out rate.

Another important value for the society would be to investigate if the students would finish their study program in the indicated study time and if so if they still have the same thoughts about their chances at the labour market. Besides that is it meaningful to investigate if they are satisfied about the followed study program and if their study did meet their expectations.

It would be recommendable to gather the data through a questionnaire and in-depth interviews. Through interviews the author will obtain a more detailed picture than with a questionnaire (Verhoeven, 1993). On the other hand it would be interesting to analyse the study choice of VWO students in an earlier stage. VWO students make a profile choice in their third study year, interesting to know is if this choice is already coupled to their later choice which this research investigation highlighted.

6.3 Recommendations

One of the outcomes in this study is that 66% of the VWO6 students have already made their study choice and that VWO6 students that perceive more obstacles limiting their study choice are less likely to be certain about their study choice. A recommendation would be to help students to be more certain about their study choice. The parents, deans, mentors, study advisors, teachers, friends and classmates could play a role to make a VWO6 student more certain about their study choice. An advice to the schools would be that the deans must have conversations with parents to talk about the study choice of the students. The deans can inform the parents with their knowledge of useful information about the higher educational study programs. The parents can then in their turn provide their children with useful information. This would be more effective, because this research has shown that the influence of the parents is higher than the influence of the deans. The last advice would be for the Ministerie van OCW to minimize the broad higher educational study programs. The respondents in this study did give comments about the wide range of options to choose from and that made them insecure about their study choice. This could lead to uncertainty about the study choice for the VWO6 students that is in his turn related to a higher chance of becoming a dropout. This all will help to get the right student at the right place to minimize the dropout problem.

References:

- Ajzen, I. (1988). *Attitudes, personality and behaviour*. Milton Keynes. U.K.: Open University Press.
- Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes*. Amherst: University of Massachusetts at Amherst.
- Ajzen, I., & Driver, B. L. (1992). *Application of the theory of planned behaviour to leisure choice*. *Journal of Leisure Research*. Massachusetts: University of Massachusetts. 24, 207–224.
- Ajzen, I., Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.
- Armitage, C.J., Conner, M. (2001). *Efficacy of the Theory of Planned Behaviour: a meta-analytic review*. *British Journal of Social Psychology*. Sheffield: University of Sheffield 40. 471–499.
- Babbie, E. (1990) *Survey research methods* (2nd ed.) Belmont, CA: Wadsworth.
- Bandura, A. (1982). *Self-efficacy mechanism in human agency*. *American Psychologist*. Stanford: Stanford University. 37, 122-147.
- Bennet, R. (2003). Determinants of Undergraduate Student Drop Out Rates in a University Business Studies Department. *Journal of Further and Higher Education*. Brighton: University of Brighton. Routledge, part of the Taylor & Francis Group.
- Bloemen, H.G., B.G.C. Dellaert (2001), *De studiekeuze van middelbare scholieren, een analyse van motieven, percepties en preferenties*, Tilburg: OSA-publicatie.
- Bosma, H. A. (1985). *Identity development in adolescence: Coping with commitments*. *Unpublished doctoral dissertation*, Groningen: RUGroningen, The Netherlands.
- Bulk, H.C.M. (2011). *Later kan ik altijd nog worden wat ik wil: statusbeleving, eigenwaarde en toekomstbeeld van leerlingen in het voortgezet onderwijs*. Utrecht: University of Utrecht.
- CBS (2010). *Jaarboek onderwijs in cijfers*. Den Haag/Heerlen: 66-68.
- Cobert, S. (2009). 'Wat na het 6e?' *Een onderzoek naar studiekeuze bij de overgang van secundair naar hoger onderwijs*. Thesis Faculteit Psychologie en Pedagogische Wetenschappen. Gent: Universiteit van Gent. 1-41.

Commissie Toekomstbestendig Hoger Onderwijs Stelsel (2010) – *Differentiëren in meervoud omwille van kwaliteit en verscheidenheid in het hoger onderwijs*. Den Haag: Min OCW.

Crone, E. (2008). *Het puberende brein*. Amsterdam: Uitgeverij Bert Bakker.4-12.

Crossling, G., Heagney, M. (2009). *Improving student retention in higher education*. Edge Hill: Australian Universities' Review, 51 (2), 9 – 18.

Deci, E.L. (1975). *Intrinsic Motivation*. New York: Plenum Press.

Eijk, van E. (2006) *De inzetbaarheid van de oudere werknemer in de zorg: De theorie van gepland gedrag en de intentie te blijven werken*. Rotterdam: Erasmus Universiteit.

European Commission. (2010). *Europe 2020, a strategy for smart, sustainable and inclusive growth*. Brussel: European Commission.

Feltzer, M.J.A., Rickli, S.G. (2009). *De invloed van persoonlijkheidskenmerken en andere factoren op studie-uitval in het hoger onderwijs*. Tilburg: Universiteit van Tilburg.

Foppen, J. W. (1982). *De studie- en stadkeuze: Een onderzoek naar de achtergronden van de universitaire studiekeuze en keuze voor een universiteit*. . Rotterdam: Erasmus Universiteit.

Gati, I. & Asher, I. (2001). *Prescreening, in-depth exploration, and choice: from decision theory to career counseling practice*. The career development Quarterly, Jerusalem: The Hebrew University of Jerusalem, Department of Psychology. 50, 140-157.

Germeijs, V., & Verschueren, K. (2006a). High school students' career decision-making process: development and validation of the Study Choice Task Inventory. *Journal of Career Assessment*. Leuven: University of Leuven. 14, 449–471.

Graaf, de D., Jong, de U., Van der Veen, I. (2006). *Staken of switchen in het hbo: kunnen instellingen hun studenten behouden?* Tijdschrift voor het hoger onderwijs. Den Haag: Lemma 24 (4). 218-227.

Heemskerk, E.M. & Fennema, M. (2002) *Een Netwerkanalyses van de mediasector in Nederland*. Amsterdam: University of Amsterdam.

Hofman, A., Boom, J. de, Heyl, E., Jong, U. de, Veen, I. van der, Voorthuis, M., Leeuwen, M, van, Korteweg, J.A., Budil-Nadvorníková, H. (2002) *Studentenmonitor 2001: studenten in het hoger onderwijs*. Zoetermeer: Ministerie van OCenW.

Hopstaken, (1994) Willens en wetens" *ziekmelden als beredeneerd gedrag*. Groningen: Rijksuniversiteit Groningen.

In 't Veld, R., Korving, W., Hamdan, Y., van der Steen, M. (2006). *Kosten en Baten van Voortijdig Schoolverlaten*. Den Haag: Min OCW. 3-12.

Jansen, E.P.W.A. (2004). *The influence of the curriculum organization on study progress in higher education*. Groningen: Rijksuniversiteit Groningen.

Jong, U. de, Leeuwen, M. van, Roeleveld, J. & Zijl, M. (2001) *Deelname aan het hoger onderwijs. Toegankelijkheid in beweging*. Kiezen voor hoger onderwijs 1995-2000. Amsterdam: SEO/SCO- Kohnstamm Amsterdam 1981.

Kans, K., Lubberman, J. & Vegt, A. van der (2009). *Monitor Ouderbetrokkenheid in het fundamenteel onderwijs*. Rotterdam: Ecorys.

Kastelij, A. (2008) *SIMA werk(t)?! Een onderzoek naar de werking van een op basis van de SIMA-methodiek ontwikkelde studiekeuzemethode*. Utrecht: Universiteit Utrecht.

Kers, L. (2009) *Informatiebehoefte over vervolgstudie bij havisten en de rol van studiemotivatie*. Enschede: Universiteit Twente.

Koning, J. de. Gelderblom & J. Gravesteijn. (2010). *Techniek: exact goed? Het keuzeprocess van allochtone en autochtone leerlingen in het (v)mbo verklaart*. Rotterdam: SEOR. Pp 138.

Knoop, J. (2008). *Digitale studiekeuzecoach. Onderzoek naar de relatie tussen een studiekeuzeadvies en studiekeuze*. Tilburg: Universiteit Tilburg.

Kwakman, M.(2008) *Welke rol speelt stabiliteit van determinanten van de Theory of Planned Behaviour bij het voorspellen van bewegingsgedrag?* Enschede: Universiteit Twente.

Lacante, M. & Schodts, L. (1997). *Kiezen voor de universiteit?* Karakteristieken van kiezende jongeren. In: Verbeek, J. & Willems, G. (red.), *Levenslijnen. Schoolloopbaanbegeleiding tijdens het secundair onderwijs en in de overgang naar de werkplek of naar het hoger onderwijs* (pp. 179-189). Leuven/Apeldoorn: Garant.

Lacante, M., Almaci, M., Van Esbroeck, R., Lens, W., & De Metsenaere, M. (2007) *Allochtonen in het hoger onderwijs. Onderzoek naar factoren van studiekeuze en studiesucces bij allochtone eerstejaarsstudenten in het hoger onderwijs*. Brussel: Ministerie Van de Vlaamse Gemeenschap.

Leeuwen, M. van, & Hop, J.P. (2000). *Instroom in het hoger onderwijs: het studiekeuzegedrag van havo- en vwo-leerlingen*. Tijdschrift voor hoger onderwijs. Amsterdam: Universiteit van Amsterdam.

Ministerie van OCW. (2009). *Kennis in kaart 2009*. Den Haag: Min OCW, Cultuur en Wetenschappen.

Ministerie van OCW/EZ. (2009). Brief aan de Tweede Kamer: 'naar een robuuste kennis-economie.' Den Haag: Min OCW

Ministerie van OCW. (2007a). *Actieplan Leerkracht van Nederland*. Den Haag: Min OCW.

Ministerie van OCW. (2011a). *Kwaliteit in verscheidenheid; Strategische Agenda Hoger Onderwijs, Onderzoek en Wetenschap*. Den Haag: Min OCW. 5-20.

Ministerie van OCW, (2011b). Prinsjesdag 2011, *specificatie van uitgaven*. Den Haag: Min OCW. 1-3.

Ministerie van Onderwijs Cultuur en Wetenschap. (2011c). *Wetsvoorstel wijziging van de Wet op het hoger onderwijs en wetenschappelijk onderzoek en Wet verhoging collegegeld langstudeerders*. (OCW publicatienummer: W2721.K-2 1, 10929). Den Haag: Min OCW.

Noordhoff Uitgevers. (2008). *Atlas van het onderwijs*. Groningen: Noordhoff Uitgevers. 9-12.

Onderwijsraad. (2005). *Briefadvies wetsvoorstel tweede fase voortgezet onderwijs*. Den Haag: Min OCW.

Onzovoort, C. H. (2010). *Als uitval opvalt. Studie-uitval in het hoger beroepsonderwijs*. Oisterwijk: Uitgeverij Boxpress.

Oomen, A. % Nierop, D. (2011). *Hoe het vwo voorbereidt op het wetenschappelijk onderwijs*. Utrecht: APS.

Park, H.W., Hong, H.D., Leydesdorff, L. (2005). *A Comparison of the Knowledge-Based Innovation Systems in the Economies of South Korea and the Netherlands Using Triple Helix Indicators*. Amsterdam: University of Amsterdam. Scientometrics. 3.

Raaijmakers, I.(2009) *De effecten van een trainingsprogramma op attitudes en intenties ten aanzien van talentontplooiing*. Effectenonderzoek aan de hand van de Theorie van Gepland Gedrag. Utrecht: Universiteit Utrecht.

Rogers, M.E., Creed, P.A. & Glendon, A.I. (2008). The role of personality in adolescent career planning and exploration: a social cognitive perspective. *Journal of vocational behaviour*. South Brisbane QLD: Griffith University. 73. 132-142.

Rumberger, R.W. (2001). *Why students drop out of school and what can be done*. Harvard: University of Harvard.

Sá, C. (2006) Higher Education Choice in the Netherlands. *The Economics of Where to go*. Amsterdam: Vrije Universiteit Amsterdam. 9-22.

Scheurs, M.L.J.J. (1996) Carrièreontwikkeling: de overgang van opleiding naar arbeidsmarkt. 2-6. Maastricht: Universiteit van Maastricht.

Stake, J.E. & Nickens, S.D. (2005). *Adolescent girls and boys science peer relationship and perceptions of the possible self as scientist*. Sex roles. St Louis: University of Missouri, St. Louis. 52, 1-11.

Steens, I.E. (2011). *Should I stay or should I go?* Onderzoek naar de voorspellende waarde van de Studiekeuzetest van Qompas, het studiekeuzeproces en motieven om van studie te switchen of deze af te maken. Enschede: Universiteit of Twente.

Telussa, N. (2009). Bioscopen *MAO-model vs. Theory of planned behavior vs. Perceived Service Quality*. Tilburg: Univeriteit van Tilburg.

Tweede Fase Adviespunt. (2005). *Zeven jaar Tweede Fase, een balans*. Evaluatie Tweede fase. 9. 99-103. Den Haag: Tweede Fase Adviespunt.

Van den Berg, M. N., & Hofman, W. H. A. (2005). *Student success in university education: A multimeasurement study of the impact of student and faculty factors on study progress*. *Higher Education*. Rotterdam: Erasmus university of Rotterdam. 5. 413–446.

Verbeek, F., Glaudé, M. , & Eck, van E. (2010). *Studiekeuzegesprekken in het hoger onderwijs*. Amsterdam: Kohnstamm Instituut UvA bv.

Verhaeghe, A. (2011). *Het imago van office management*. De studie en het beroep. Brussel: ASP (Academic & Scientific Publishers).

Verhoeven, J.C. (1993). *Overgangsproblematiek secundair onderwijs – universiteit*. Enkele overwegingen vanuit de sociologie. In Janssens, P.J, e.a. (red.), *Van secundair naar hoger onderwijs*. Is er een einde aan die jaarlijkse hecatombe? (pp. 49-68). Leuven/Apeldoorn: Garant.

Verhoeven, J.C., Vandeputte, L., & Vanpeé, K. (2000). *Universiteiten en hogescholen elk hun eigen roeping?* Leuven: Universiteit Leuven Departement sociologie.

Verhoeven, J.C., Hermans, D.J., & Aerschot, M. van. (2003). *Gezocht: ingenieur. Een onderzoek naar studiekeuze vanuit genderperspectief.* Antwerpen: Consortium Universiteit Antwerpen en Limburgs Universiteit Centrum.

Verhulst, F.C. (2005). *De ontwikkeling van het kind.* Assen: Van Gorcum.

Verkroost, J. (2007). *Studiekeuze: bedoelt u stuurloos?* Enschede: University of Twente.

Verschuuren, K C.G.G. (2009). *Kiezen voor een betatechnische studie.* Enschede: University of Twente. 58957. 4

VHTO (2008) *Door een andere bril. Aansluiting beta/ technisch hbo en havo.* Utrecht: VHTO.

Warps, J. (2007). *Kiezen voor hogeschool en universiteit; voorlichtinggebruik en keuzeprocess van instromende hbo- en wo-studenten in Nederland, studiejaar 2005-2006.* Nijmegen: Research Ned.

Warps, J. (2009). *Studiekeuze en studiesucces; Een selectie van gegevens uit de Startmonitor over studiekeuze, studieuitval en studiesucces in het hoger onderwijs.* Nijmegen: Research-Ned.

Zijlstra, W., Meijers, F. (2006). Hoe spannend is het hoger beroepsonderwijs? *TH&MA Tijdschrift voor Hoger Onderwijs & Management.* Den Haag: Publicatie Meijers. 13 (2). 53-60.

Appendix:

UNIVERSITY OF TWENTE.

Betreft: Vragenlijst voor VWO leerlingen t.b.v. afstudeeronderzoek studiekeuzemotieven

Beste leerling,

Voor je ligt een vragenlijst die onderdeel is van een afstudeeronderzoek naar de studiekeuzemotieven van studenten van V.W.O. 6. In het kader van mijn afstudeerscriptie voor de Universiteit Twente (UT) zet ik deze vragenlijst uit bij verschillende middelbare scholen. Op basis van de ingevulde vragenlijsten schrijf ik over dit onderwerp een afstudeerscriptie, waarmee ik mijn opleiding aan de UT kan afronden.

Voor mijn afstudeeronderzoek ben ik geïnteresseerd in jouw beleving van en mening over het kiezen van de juiste bachelor studie. Je medewerking wordt bijzonder op prijs gesteld!

Het invullen van de enquête gebeurt anoniem. Dit betekent dat jij je naam nergens hoeft in te vullen. Vul de vragenlijst in zonder overleg met anderen. De enquête bestaat enkel uit meerkeuzevragen; kruis het antwoord aan dat het beste bij jouw beleving of mening past. Per vraag kun je maximaal één antwoord aankruisen (tenzij anders aangegeven).

Het invullen van de vragenlijst zal ongeveer 10 minuten van je tijd in beslag nemen.
Ik dank je bij voorbaat voor je medewerking!

Met vriendelijke groet,

Christian van Wamelen
student Universiteit Twente

A. Questionnaire

Nr.:

VRAGENLIJST VOOR VWO LEERLINGEN

Achtergrondinformatie

1. Wat is je geslacht? Man Vrouw
2. In welk jaar ben je geboren? 19.....
3. Welk profiel heb je gekozen(meerdere antwoorden mogelijk)?
 Cultuur en maatschappij
 Economie en maatschappij
 Natuur en gezondheid
 Natuur en techniek

Geef bij de volgende vragen aan wat je plannen zijn voor volgend jaar en hoe zeker je van deze keuze bent:

4. Op welk hogeronderwijsniveau ben je volgend jaar van plan te gaan studeren?
 WO → ga verder naar vraag 6
 HBO → ga verder naar vraag 6
 Nog onbekend → ga verder naar vraag 6
 Ik ben niet van plan om verder te studeren → beantwoord alleen nog vraag 5
5. Wat is de reden dat je volgend jaar niet een hogeronderwijsopleiding gaat volgen?
 Ik heb nog geen idee wat ik volgend jaar wil gaan doen.
 Ik ga werken.
 Ik ga op een lager niveau verder studeren.
 Voor mij zijn de financiële risico's te groot.
 Andere reden namelijk:
.....
.....
.....

6. Hoe ver ben je in het maken van jouw studiekeuze?

- Ik weet inmiddels zeker welke bachelorstudie ik wil gaan doen en ook aan welke instelling.
- Ik weet inmiddels zeker welke bachelorstudie ik wil gaan doen, maar alleen nog niet waar.
- Ik heb al gekozen voor een bachelorstudie voor volgend jaar, maar ik heb nog wel twijfels over de juistheid van mijn keuze.
- Ik ga volgend jaar zeker een bachelorstudie doen, maar ik weet alleen nog niet precies welke studie of waar, hoewel ik al wel redelijke ideeën hierover heb.
- Ik ga volgend jaar zeker een bachelorstudie doen, maar ik heb nog geen enkel concreet idee over wat of waar.

Huidige kennis van bacheloropleidingen.

	beeld	beeld	beeld	duidelijk beeld
7. In hoeverre heb je op dit moment een duidelijk beeld of bepaalde bacheloropleidingen:				
a) een goede kans bieden op een baan na je studie?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) goede mogelijkheden bieden om later in je levensonderhoud te voorzien?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) zullen resulteren in een leuke baan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) zullen leiden tot een goed betaalde baan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) inhoudelijk zeer interessant zullen zijn?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) je in staat zullen stellen om jezelf verder te ontplooien?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g) je in staat zullen stellen om een bijdrage te leveren tot het oplossen van technische of maatschappelijke problemen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h) je zullen uitdagen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i) je plezier en een goed gevoel zullen geven?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j) je status en aanzien zullen vergroten?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k) je voldoende vrije tijd geven om naast je studie leuke dingen te doen?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Geef aan hoe belangrijk de volgende motieven voor jou zijn bij het maken van je studiekeuze.

	Niet belangrijk	Enigszins belangrijk	Enigszins belangrijk	Heel belangrijk
8. Mijn studie moet later een goede kans op een baan bieden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Niet belang rijk		Enigszins belang rijk		Heel Be- langrijk
9. Op basis van mijn studie moet ik in mijn levensonderhoud kunnen voorzien.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Mijn studie moet leiden tot een leuke baan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Mijn studie moet leiden tot een baan met een goed salaris	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Mijn studie moet inhoudelijk interessant zijn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Mijn studie moet mij in staat stellen mijzelf verder te ontwikkelen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Mijn studie moet mij in staat stellen om technische of maatschappelijke problemen op te lossen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Mijn studie moet mij uitdagen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Mijn studie moet mij plezier en een goed gevoel geven.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Mijn studie moet mij meer aanzien en status geven.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Mijn studie moet genoeg vrije tijd over laten om andere dingen te doen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In welke mate bespreek jij je studiekeuze met de volgende personen?

	Niet		Beperkt		Uitge- breid
19. Ouders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Vrienden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Klasgenoten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Docenten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Decanen, studieadviseurs, mentoren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In welke mate hebben de volgende personen jou voorzien van een duidelijk advies of duidelijke voorkeur voor een bepaalde

	Niet		Beperkt		Uitge- breid
24. Ouders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Vrienden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Klasgenoten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27. Docenten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28. Decanen, studieadviseurs, mentoren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Geef aan in welke mate jij de mening van de volgende personen belangrijk vindt bij het maken van je studiekeu-

	Niet belang rijk		Enigszins belang rijk		Heel be- langrijk
29. De mening van mijn ouders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. De mening van mijn vrienden	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. De mening van mijn klasgenoten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. De mening van docenten	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. De mening van decanen, studieadviseurs, mentoren	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Geef voor de volgende stellingen aan in hoeverre jij het hiermee oneens of eens bent.

	Mee oneens		Neutraal		Mee eens
34. Als ik moet worden ingeloot voor een opleiding, dan zou ik mij niet inschrijven voor deze opleiding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. Als ik verwacht niet te voldoen aan de toelatingseisen van een opleiding (profiel of vooropleiding, toelatingstest of toelatingsoopdracht), dan zou ik me niet inschrijven voor deze opleiding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. Als ik verwacht dat de opleiding zwaar zal zijn, dan zou ik me niet inschrijven voor deze opleiding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37. Als ik mijn slaagkansen voor de opleiding laag zou inschatten, dan zou ik me niet inschrijven voor deze opleiding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38. Wanneer mijn beoogde opleiding duurder is dan de gemiddelde opleiding, dan kies ik een andere opleiding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39. Als er weinig woonruimte beschikbaar is in de plaats waar ik wil gaan studeren, dan ga ik ergens anders studeren.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40. Ik kan nog geen studiekeuze maken omdat ik te weinig informatie heb over bepaalde opleidingen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41. Doordat ik nog geen open dag heb bezocht, kan ik nog geen studiekeuze maken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42. Ik kan nog geen studiekeuze maken omdat ik de financiële gevolgen van het studeren niet goed kan overzien.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Dit is het einde van de vragenlijst.

Hartelijk dank voor je medewerking!

Wanneer je naar aanleiding van deze vragenlijst op- of aanmerkingen hebt, kun je deze hieronder kwijt.

B. Results of the background characteristics

Table B.1

Gender

	Male (n=145)	Female (n=222)	t	df	p
Attitude	7.88	8.16	-0.526	351	0.400
Extrinsic	8.57	8.53	0.072	351	0.424
Intrinsic	7.49	7.94	-0.826	351	0.385
Subjective norm	3.74	4.30	-1.085	351	0.242
Perceived behavioural control	2.13	1.94	3.015	350	0.048*
Certainty about study choice	0.62	0.52	0.910	347	0.364
The study of my choice will lead to good opportunities for a job	2.85	2.77	1.072	350	0.285
When I finish the study of my choice, my diploma could foresee in my life-support	2.98	2.91	0.870	350	0.385
With the study of my choice I must be able to get a nice job	3.12	3.23	-1.509	350	0.132
With the study of my choice I should get a job with good salary	2.56	2.46	1.161	350	0.246
My study must have my interest with respect to the content	3.17	3.28	-1.798	350	0.073
My study must enable my skills	2.87	2.96	-1.100	349	0.275
My study must enable me to solve technical and socially problems	2.25	2.20	0.491	349	0.624
My study must challenge my capabilities	2.98	2.98	0.029	349	0.977
My study must give me a good feeling and pleasure	3.06	3.15	-1.184	349	0.237
My study choice should give me status and respect	2.09	1.65	4.096	349	0.000*
My study should give me plenty of time for other things	2.46	2.44	0.230	347	0.819
<i>Influence parents</i>	2.49	2.80	-3.145	350	0.002*
<i>Influence Friends</i>	1.75	1.99	-2.245	350	0.025*
<i>Influence classmates</i>	1.21	1.03	1.836	350	0.067
<i>Influence teachers</i>	1.36	1.10	2.680	350	0.008*
<i>Influence deans, mentors and study advisors</i>	1.80	1.58	1.824	350	0.069
If I should be drawn for a study program, then I will not registered myself for this program	0.91	0.58	2.942	350	0.001*
When I aspect that I will not be admitted for a certain education, then I will not registered myself for this program	2.00	1.72	1.846	350	0.002*
When I aspect that the study would be too difficult for me, then I will not registered myself for this program	1.10	1.02	0.689	350	0.270
When I think that study chances of success are small, then I will not registered myself for this program	2.13	1.89	1.846	349	0.015*
When my intended study program is more expensive than the	0.83	0.91	-0.722	348	0.383

average study program then I choose another study program					
When there is small availability of dorms in the city, then I will study somewhere else	0.89	0.84	0.494	349	0.231
I am not capable to make a study choice because of the lack of information about certain courses	1.01	0.81	1.511	349	0.490
Because I have not visited an open day I cannot make a study choice	0.60	0.33	2.773	349	0.000*
At the moment I cannot make a study choice because I cannot oversee the financial consequences	0.70	0.41	2.796	349	0.005*

(*Significant by $p < 0,05$)

Table B.2

Education level

	HBO (n=66)	WO (n=264)	t	df	p
Attitude	8.06	8.14	0.105	327	0.620
Extrinsic	8.50	8.71	0.306	327	0.636
Intrinsic	7.82	7.80	-0.016	327	0.534
Subjective norm	4.00	4.17	0.246	327	0.882
Perceived behavioural control	0.58	0.57	-0.414	327	0.750
Certainty about study choice	1.2043	1.4874	-4.511	347	0.000*
The study of my choice will lead to good opportunities for a job	2.83	2.83	-0.063	327	0.950
When I finish the study of my choice, my diploma could foresee in my life-support	2.97	2.89	0.839	327	0.402
With the study of my choice I must be able to get a nice job	3.19	3.29	-1.090	327	0.276
With the study of my choice I should get a job with good salary	2.53	2.48	0.428	327	0.669
My study must have my interest with respect to the content	3.27	3.25	0.220	326	0.826
My study must enable my skills	2.95	2.98	-0.237	326	0.813
My study must enable me to solve technical and socially problems	2.36	1.76	4.467	326	0.000*
My study must challenge my capabilities	2.99	3.11	-1.179	326	0.239
My study must give me a good feeling and pleasure	3.11	3.37	-3.002	326	0.003*
My study choice should give me status and respect	1.88	1.72	1.147	326	0.252
My study should give me plenty of time for other things	2.44	2.52	-0.658	326	0.511
<i>Influence parents</i>	2.65	2.83	-1.318	327	0.189
<i>Influence Friends</i>	1.90	1.89	0.137	327	0.891
<i>Influence classmates</i>	1.15	0.91	1.887	327	0.060
<i>Influence teachers</i>	1.29	0.92	2.888	327	0.004*
<i>Influence deans, mentors and study advisors</i>	1.75	1.45	1.983	327	0.048*
If I should be drawn for a study program, then I will not registered myself for this program	0.69	0.80	-0.772	327	0.440
When I aspect that I will not be admitted for a certain education, then	1.84	1.88	-0.178	327	0.859

I will not registered myself for this program

When I aspect that the study would be too difficult for me, then I will not registered myself for this program

When I think that study chances of success are small, then I will not registered myself for this program

When my intended study program is more expensive than the average study program then I choose another study program

When there is small availability of dorms in the city, then I will study somewhere else

I am not capable to make a study choice because of the lack of information about certain courses

Because I have not visited an open day I cannot make a study choice

At the moment I cannot make a study choice because I cannot over-see the financial consequences

(*Significant by $p < 0,05$)

1.06	1.03	0.228	327	0.819
1.98	2.00	-0.137	326	0.891
0.80	1.08	-1.991	325	0.047*
0.84	0.89	-0.392	326	0.695
0.79	0.77	0.109	326	0.913
0.40	0.30	0.914	326	0.361
0.51	0.51	-0.016	326	0.988

Table B.3

Study profile

	C&M (n=67)	E&M (n=124)	N&G (n=154)	N&T (n=128)	f	df	P
Attitude	9.10	7.92	7.72	7.73	1.536	351	0.191
Extrinsic motivation	9.25	8.33	8.27	8.30	1.123	351	0.345
Intrinsic motivation	9.01	7.69	7.41	7.41	1.685	351	0.153
Subjective norm	5.18	4.11	3.79	3.58	1.524	351	0.195
Perceived behavioural control	1.97	2.01	1.99	2.02	1.114	351	0.350
Certainty about study choice	0.35	0.19	0.43	0.36	4.865	348	0.228
The study of my choice will lead to good opportunities for a job	2.56	2.84	2.83	2.89	2.172	351	0.045*
When I finish the study of my choice, my diploma could foresee in my life-support	2.69	2.93	3.04	3.02	2.510	351	0.022*
With the study of my choice I must be able to get a nice job	3.22	3.18	3.19	3.18	0.398	351	0.880
With the study of my choice I should get a job with good salary	2.15	2.63	2.50	2.55	4.238	351	0.000*
My study must have my interest with respect to the content	3.37	3.17	3.31	3.28	3.448	351	0.003*
My study must enable my skills	3.00	2.86	3.00	2.98	1.433	350	0.201
My study must enable me to solve technical and socially problems	1.98	2.11	2.43	2.41	3.554	350	0.002*
My study must challenge my capabilities	3.06	2.98	3.02	2.98	1.755	350	0.108
My study must give me a good feeling and pleasure	3.28	3.12	3.10	3.04	0.912	350	0.486
My study choice should give me status and respect	1.58	1.91	1.80	1.84	1.869	350	0.085
My study should give me plenty of time for other things	2.52	2.56	2.34	2.32	1.485	348	0.182
<i>Influence parents</i>	2.55	2.68	2.77	2.64	2.923	352	0.009*
<i>Influence Friends</i>	1.75	1.83	2.01	1.94	1.573	352	0.154
<i>Influence classmates</i>	0.90	1.07	1.12	1.19	1.307	352	0.253
<i>Influence teachers</i>	1.10	1.19	1.16	1.29	1.370	352	0.226

Influence deans, mentors and study advisors

If I should be drawn for a study program, then I will not registered myself for this program

When I aspect that I will not be admitted for a certain education, then I will not registered myself for this program

When I aspect that the study would be too difficult for me, then I will not registered myself for this program

When I think that study chances of success are small, then I will not registered myself for this program

When my intended study program is more expensive than the average study program then I choose another study program

When there is small availability of dorms in the city, then I will study somewhere else

I am not capable to make a study choice because of the lack of information about certain courses

Because I have not visited an open day I cannot make a study choice

At the moment I cannot make a study choice because I cannot over-see the financial consequences

(*Significant by $p < 0,05$)

1.66	1.68	1.65	1.68	0.203	352	0.976
0.64	0.72	0.64	0.59	1.806	351	0.097
1.75	1.81	1.82	1.92	0.368	351	0.899
0.94	1.06	0.97	1.00	1.439	351	0.199
2.12	2.02	1.92	1.93	0.988	350	0.433
1.21	0.99	0.75	0.64	2.549	349	0.020*
0.84	0.84	0.85	0.93	0.858	350	0.526
0.63	0.77	0.97	1.03	1.131	350	0.344
0.15	0.44	0.46	0.53	1.655	350	0.131
0.45	0.40	0.57	0.66	1.220	350	0.295