



MASTER THESIS

# TWENTE OFFERS GREAT OPPORTUNITIES

Factors influencing the Migration Intention after  
Graduation

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UNIVERSITY OF TWENTE.

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Factors influencing the Migration Intention after Graduation  
Researching the Influence of the Social Network

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## Abstract

This study focusses on students' intention to migrate after graduating at the University of Twente. The municipality of Enschede has great interest in knowing which factors do influence the intention to migrate, stay in or leave Twente of students studying at the University of Twente (UT). Higher educated people are the most mobile group of people (Faggian et al., 2008; Haapanen and Tervo, 2012), and therefore more likely to consider not only the region in which they completed their study as a region to find a job, but also other regions or even countries. Furthermore, Enschede has a strong outflow of students directly in the first year after graduation (Venhorst et al., 2013). Earlier studies on Twente explain different factors to play a role in the students' intention, as such the region on its own, the facilities offered, the work prospect (Sprakel, 2008; Timmer, 2008) these factors are also considered as important in other studies on migration intention (Bjerke and Mellander, 2016; Fiore et al., 2015; Hansen et al., 2003). The study by Timmer (2008) on Twente also explained that the social network of a person can be considered as an influential factor, however different aspects of the social network were not treated, which will be done in this research. Based on more recent studies (Kaplan, 2016; Rainer and Siedler, 2009) it can be stated that the social network of a person, but also the network on social networking sites (SNS) are of importance in the migration intention. Therefore, this study will focus on residential area factors and employment prospects and will integrate factors in which the social network is treated. Namely, the number of peers in the region and online on SNS, the job information provision of the social network via SNS, and lastly social influence, the way in which the social network's opinion can influence the migration intention of students. While analysing the constructs of the variables for further analysis in this research, it became clear that another factor on the social network can be added, namely the proximity to the network.

A qualitative research study was held among UT students (N=387), diversity in the field of study they are enrolled in was preferred. The qualitative study examined the influence of 16 factors on the intention to migrate. Also distinctions in field of study, place of origin, and nationality are made in the analysis. In analysing the influence of the factors on the intention to migrate in the hierarchical regression analysis, the factors (from now on called predictors) found to be significant were related to the social network, namely Social Influence and Number of Peers in the region and online on SNS. The opinion of the network matters most in the intention to stay in the region, because the network of the students do think Twente is a good residence option. However, the lack of number of peers in Twente makes that the students will leave the region. An interesting finding is that the employment prospect is not a significant predictor, neither positively towards Twente, nor negatively towards Twente. Which means that even though expected the Randstad does not seem to be significantly more attractive in job opportunities. Moreover, when the social network is not taken into consideration the students do think positively about the employment prospect in Twente and results to be a significant predictor towards staying in Twente. In conclusion, the outcome differs from earlier research on Twente, the factors on the social network are more important than residential, and work and locational factors.

Keywords: Intention to migrate, Social network, Social Influence, Peers in region, University students.

## 1. Introduction

The city of Enschede within the region Twente, The Netherlands, is located close to the German border. This results in companies that do business in both countries. Job openings that focus on these markets can be fulfilled by enthusiastic students who chose the University of Twente in Enschede to learn more during technical as well as non-technical studies. The University attracts students out of The Netherlands, Germany and other parts of the world. Students do find this region interesting to learn all about their technical or non-technical interests, but after studying students tend to search for a job in other parts of the country. For the Dutch students, mostly the provinces and cities in the west. But what factors do, both Dutch and International, students consider as most important in their migration decision? The aim of this study is to gain insight into these factors and whether social networks and social influence are important in this decision. This is of importance for the municipality Enschede (Gemeente Enschede) in relation to marketing and communication strategies for the region Twente, to keep human capital and talent in the region.

Graduates that studied in the peripheral regions of a country are often moving to the urban regions after graduation to start their working career. Students that completed a degree of higher education, master degree, are the most mobile group of people (Hansen et al., 2003; Faggian et al., 2008; Haapanen and Tervo, 2012). A study among bachelor students of Saxion University of Applied Science, and bachelor and master students of University of Twente, both located in Enschede, showed that students of the University are more likely to leave the region after graduating than students of Saxion (Sprakel, 2008; Timmer 2008). This is an relevant outcome for this study, since the focus will be on students of the University of Twente. In the case of Enschede the outflow of graduates can be explained as a loss of human capital and therefore 'Brain Drain' in the area, meaning that higher educated people leave the study region, especially immediately after graduation (Venhorst et al., 2010; Haapanen and Tervo, 2012; Hansen et al., 2003). More evidence on students who are leaving the region Twente directly after graduation is found in a study on the migration flows of higher educated graduates in nine cities in the Netherlands, including Enschede. Enschede has a continual inflow of students choosing to live in Enschede for study purposes. Students therefore come to Enschede at the beginning of their study. However, a strong outflow is measured directly in the first year after graduation. Compared to the western part of the Netherlands, this outflow in the first year in Enschede is very strong. Amsterdam does first have the advantage of a great inflow of graduates out of other regions trying to find a job in the city. Only four years after graduating people will leave Amsterdam again, still the outflow is more spread compared to the strong and rapid outflow in Enschede in the first year. In the case of Enschede, the most recent measured stream (2005) of students migrating out of Enschede in the first year after graduation is bigger than the earlier measurement ones (1990-2004), indicating that the brain drain effect is an serious issue in Twente, and the prospect is that it will continue to increase in the future (Venhorst et al., 2013).

Regional development is related to higher education in a specific region, because human capital (knowledge and expertise) are made possible at the university and can be implemented in regional labour, but people are becoming more and more geographically mobile which increases human capital migration behavior (Faggian et al., 2008). This explains why keeping talent in the region of Twente is important for regional development. The larger or more developed the local labour market, the more graduates stay or feel attracted to stay in that area, especially large metropolitan areas (Haapanen and Tervo, 2012). A larger or more developed labour market could also be a reason why graduates out of

other regions are attracted to Amsterdam after graduating, because Amsterdam attracts a lot of people in the first year after graduation (Venhorst et al., 2013).

Different studies on graduates leaving the region Twente has been done. The study by Sprakel explained that students of the University of Twente (UT) are less positive about Twente as a region to work and live. Students originating from the region Twente and students who came to study in the region but originating from other regions do not have different results on their opinion towards working and living in the region. However, students originating from Twente have a stronger positive feeling with the region than students not originating from Twente. According to this study there are five most important indicators for feeling connected with Twente, namely whether a student is originating from Twente, job embeddedness (due to a partner originating from Twente), involvement in study relevant activities, the students' goal for studying in Twente, and the image of Twente. The latter being the most important indicator. Participants were also asked whether they would stay in Twente when offered a good job, two third of the participants answered positively by saying they were willing to do so. However, the study did not take into account why students would choose Twente as the region to start their working career, or why they would choose other regions or countries.

Another study focussing on Twente included social networks among other factors, as a factor that stimulated migration of graduates (Timmer, 2008). In research the brain drain in Twente is mostly related to different factors such as lifestyle, economic and community factors. However, limited research on social networks and social influence has been done but explained as an important factor (Timmer, 2008; Kaplan et al., 2016). Furthermore, the influence of social networking sites (SNS) are not taken into account in researched studies focussing on Twente, but a lot has changed in the use of internet since 2008. SNS are used more and more nowadays by young adults (Hurrell and Postatny, 2015; Sin and Kim, 2014) and also in job search (Nikolaou, 2014), it is interesting to find out if using SNS facilitates migration decisions of graduates. Therefore, this study will go a step further to see if the influence of different factors on the intention to migrate differ since 2008 and whether social networks and sites could play an important role.

This study has been divided into five chapters. First the introduction mentions the relevance and the aim of the research. The second chapter explains the theoretical framework, the literature found on the constructs, including the hypothesis formulated for this study and the research model. The third chapter includes the methodology, the participant selection and the survey held is treated. Furthermore the chapter includes the outcomes of the factor analysis of the pre-test and the main research including the reliability of the variable constructs. In the fourth chapter the analysis performed is discussed and the results can be found. Finally, chapter five includes the discussion and conclusion of the outcomes. Also the answer to the research question, the recommendations for the municipality of Enschede, and the overall conclusions are given.

## 2. Theoretical framework

The variables this study will be based upon will be explained in this theoretical framework, first of all the mobility of graduates, secondly the factors influencing mobility or migration including social networks and social influence. And the awareness of job possibilities in region, and how students tend to search for jobs by social networking sites (SNS).

### 2.1 – Intention to migrate

Expected is that people who grew up in rural regions have a different view on and perception of the region compared to people who grew up in urban regions. The characteristics and satisfaction that result from being located in the current region, explains the likelihood of staying in the region (Bjerke and Mellander, 2016). This is confirmed in research on Twente, explaining that people originating from Twente do have a more positive view on the region and are more likely to stay, also because of the proximity to family and friends in the region (Sprakel, 2008; Timmer, 2008). This background information on the origin of participants is needed to take into account when measuring the intention to migrate. Measuring a behavioral intention, in this case the intention to migrate, is best suited to situations where the control over factors associated with the decision are in hands and strongly controlled by the people, those with the intention towards the behavior to migrate. Considering the relatively wealthy individuals in a welfare society (for example, members of the middle class in Europe) mobility and job-function changes can be financed by people themselves and mobility is becoming more common. Therefore, people will fit in successfully in the new community (Simmons, 1986). This explanation is applicable to students in the region Twente, and therefore also applicable on measuring their intention towards migration, because students can decide themselves where to start their career and whether they will move to a new region. A study on different ways in which the intention to move within a study can be measured, explained that the way in which this question is formulated differs greatly among the five compared studies. According to this study, the ideal way of measuring the intention to move explains that the question should take three aspects into account. Namely, the '(a) degree of intention (from "very certain" through "possible" to "uncertain"), (b) the anticipated place of destination, and (c) the time period under consideration' (Simmons, 1986, p. 126). Besides measuring the intention to migrate after graduation, it is necessary to find out which factors do influence the intention.

### 2.2 – Factors important for migration decisions

Research on students and their motives to locate in peripheral or urban areas has been done, resulting in a set of factors explaining graduates mobility. Factors such as personal, household, and labour market characteristics do have an influence on migration decisions of graduates. Gender, age and level of education are often investigated as influential factors for migration (Haapanen and Tervo, 2012). Factors that do not stimulate migration to another region are strong family ties and home ownership, but also social networks and familiarity with a particular location (Hansen et al., 2003). But, it can stimulate migration among graduates who studied in another region, away from their family ties, the social network in a particular region.

#### 2.2.1 – Residential Area factors

Personal and household factors (Haapanen and Tervo, 2012), and a city's cultural and social attraction, the atmosphere (King et al., 2016) are related to what the region has to offer and what living in that



region is based upon. Therefore, the variables are divided into Quality of life, Sociability and Number of Facilities, explained by using relevant literature.

### **Quality of life**

A study among German graduates and their reasons for moving to London explained that mainly a city's cultural and social attraction, the urban and multicultural atmosphere are factors that are prioritised above economic motives (King et al. 2016). Also the quality of the environment, among others the feeling of safety of living in a specific region (Fiore et al., 2015; Bijker et al., 2012; Timmer, 2008) and the space it has to offer are seen as important (Bijker et al., 2012). Not only are the quality of the environment but also the dynamic atmosphere (Timmer, 2008) and pleasant living environment (Sprakel, 2008; Timmer, 2008) considered as important in considering to stay and live in a region. Natural amenities could also attract people to certain regions (Rickman and Rickman, 2011), such as nature parks, recreational water, and land facilities (Fiore et al., 2015; Timmer, 2008; Hansen et al., 2003). The balance between urban and nature in a region (Fiore et al., 2015) and whether the region is characterized as more urban than rural area (Timmer, 2008) does also include natural amenities.

Other items found that relate to the quality of life in a region are the availability of a job for spouse or partner (Hansen et al., 2003), a younger median age of community members (Fiore et al., 2015; Hansen et al., 2003), the high availability of houses (Sprakel, 2008), as well as the overall attractiveness of the residential areas (Timmer, 2008). These factors are important in measuring the importance of the place itself to live in, as part of the migration intention.

*H1a: The higher the Quality of life in the region, the lower the Intention to Migrate out of Twente.*

### **Sociability**

Factors that are considered as important in the decision to migrate are also related to the social environment. Seen as important is the adoption/integration into the new community. Not only a good atmosphere within the community is taken into consideration, also openness of the residents, friendliness and kind-heartedness, and commitment among people within the community (Bijker et al., 2012; Sprakel, 2008; Timmer, 2008). But also because of the feeling of being easily accepted by the community (Timmer, 2008) is related to the sociability of the region, which can influence the intention to migrate. When migrating to a new region, sociability focusses on the community a person needs to fit in, it is not the social network an individual already has, maybe even in another region. Therefore, a distinction is made. Another social factors that can be thought of to play a role in the intention to migrate is the presence of family and friends in the region (Timmer, 2008; Hansen et al. 2003). This is a factor that could make a person stay in that specific region. Or in case a person studied in another region than originating from, he could be motivated to migrate in order to live closer to friends and family (Bijker et al., 2012). The social support from family and friends living in the region of origin, towards another region, and the social network at the region of origin and the region migrating to can be related to migration (Kaplan et al., 2016). The importance of social networks and social influence will be treated in subparagraph 2.2.3 (p. 13). Therefore, sociability aspects will be treated as one factor, and as explained focusses only on the new community a person will be part of when starting to live in a region.

*H1b: The higher the Sociability in the region, the lower the Intention to Migrate out of Twente.*

### **Number of Facilities**

‘Cultural and recreational amenities that appeal to young professionals in high-growth sectors help to attract a “creative class” of people essential to economic growth and productivity’ (Florida, 2002, as cited in Hansen et al., 2003, p. 133). The availability of cultural events (Fiore et al., 2015; Hansen et al., 2003), regular organization of events, theatres, museums, rich historical background (Timmer, 2008), and recreational opportunities, presence of cafes and restaurants, the quality of the nightlife (Timmer, 2008; Hansen et al., 2003) is found to be important in the decision to migrate to a specific region.

The ability of consumption can attract the highly educated to, in that case, the more urban areas. Reasoned that urban areas have a larger variety of consumption options, the consumption options has become more important in location decision making as incomes increase, because people are able to consume more. Therefore, the most attractive places to migrate to are those with a large variety of consumption options (Bjerke and Mellander, 2016). Important in that case is the access to basic goods (Fiore et al., 2015), a variety of shops (Timmer, 2008) but also access services as to health facilities (Fiore et al., 2015; Timmer, 2008). A study using a list of 37 community features explained that features that are frequently selected and ranked in the top ten include, safety, access to basic consumer goods and health facilities, restaurants, events, length of home to work travel. However, the first two ranked features related to the Economic factors (Fiore et al. 2016) which will be treated in the following subparagraph in this research.

*H1c: The higher the Number of Facilities present in the region, the lower the Intention to Migrate out of Twente.*

### **2.2.2 – Work and Economic factors**

Labour market characteristics together with the strength of the local economy have an influence on the migration decision (Haapanen and Tervo, 2012; Fiore et al., 2015), also education can play a role (Fiore et al. 2015; Hansen et al. 2003). Therefore, the Work and Economic related factors are divided into the following variables, Employment prospect, Economic prospect and Accessibility, and Education possibilities.

#### **Employment prospect**

The importance of employment prospect is stressed by a study which included a set of 21 elements regarding job and location priorities. The top four ranked factors considering as important in their motivation to migrate are related mostly to job requirements, such as a challenging job, employer benefits, starting salary (Hansen et al., 2003). Also the job description is of importance (Timmer, 2008; Hansen et al., 2003). One major motive for migration to urban regions is the stronger labour market bigger regions expose, namely the offer of higher wages, access to a high number of employers, and a more effective and faster networking interaction with other highly educated and skilled individuals in the region. The people locating in the bigger areas get access to the before mentioned factors, which will increase and make the labour market stronger in case more people make the same decision (Bjerke and Mellander, 2016), therefore urban regions with a strong labour market can attract people to start their career in that region. When people attended a longer university education they can feel like they had a more costly investment in their education. Therefore, they could feel the need to move to an urban region to find a more creative knowledge job which also more likely is better paid. Creative knowledge jobs are important in the decision of higher educated people to migrate, to use the knowledge they attained during their university education (Bjerke and Mellander, 2016). Factors that

are also related to employment that could attract people to a region are, new job opportunities, personal job development in the future, and a range of interesting employers in the region, job description, and a challenging job (Timmer, 2008). Other factors related to employment that could stimulate the intention to migrate are a change of job, and the desire to live closer to work (Bijker et al., 2012)

*H2a: The higher the Employment prospect in the region, the lower the Intention to Migrate out of Twente.*

### **Economic prospect and Accessibility**

Regional unemployment and low financial resources could stimulate migration, especially graduates originating from other regions with more promising labour market opportunities are more likely to return to this region after graduation. Highly educated are moving from regions with less promising job opportunities to expanding regions (Haapanen and Tervo (2012), which means the economic prospect of the expanding region is seen as more positive by students. In a city or region wage levels compensate for the presence or absence of amenities, such as climate, scenery, or lower living costs (Hansen et al., 2003). Both studies by Hansen et al. (2003) and Fiore et al. (2015) asked participants to rank or choose the most important factors regarding migration. The first mentioned study had a set of 21 elements regarding job and location priorities, the top ranked factors are related to work, but the next factor within the top ten is cost of living or housing. The second mentioned study is based upon four factors influencing migration, namely work, being close to family and friends, community features, and housing (Burke and Edelman, 2008, as cited in Fiore et al., 2015, p. 26). The study used a list of 37 community features, including among others, economy, cost of living, health, leisure and culture, recreation opportunities. Explained is that economic features are most important, first two items ranked are overall cost of living and strong local economy. A study on Latvians and their motivation to migrate to London, explained that motives are directly related to economic opportunities, in this case probably because of the restricted work options and lower incomes at home and the smaller labour market (King et al., 2016). The importance of economic opportunities was placed above the culture and amenities within the new location. Strong local economy, a prosperous region, cost of living, cost of housing and salary level are found to be important in other research (Timmer, 2008).

Moreover, the accessibility of the region can be seen as a factor that is taken into account when considering a region to start work and live in. The aspects related to accessibility of an area, and taken into account in research are highway access, public transportation (Fiore et al., 2015) and length of commute to work (Fiore et al., 2015; Timmer, 2008; Hansen et al., 2003), the accessibility to and from other regions, and the central location of the region with respect to other regions (Timmer, 2008). These factors show that a region becomes more appealing to live in or start a career when people are able to travel easily to other regions. Moreover the location within the country is important for people in order to decide to migrate to that region. The proximity to Germany will also be taken into account in this research since this is specific to Twente.

*H2b: The higher the Economic prospects of the region, the lower the Intention to Migrate out of Twente.*

*H2c: The higher the Accessibility of the region, the lower the Intention to Migrate out of Twente.*

### **Educational possibilities**

Attractive labour markets are not the only reason urban areas grow faster, education plays an important role in attracting human capital (Fiore et al., 2015; Hansen et al., 2003). Migration can also be related to the desire to get an (specific) education (Bijker et al., 2012). Furthermore, the importance of education level of residents is stressed in research on factors influencing migration within Europe, explaining that higher educated people are more likely to be attracted to regions with highly skilled residents and therefore a highly skilled labour market where a high level is demanded. Regions with a high percentage of residents working in the agricultural sector are being less attractive (Rodríguez-Pose and Ketterer, 2012), also explaining that regions with highly skilled residents are more attractive. Corresponding evidence in the education level of residents playing a role is found in another study, highly educated people move to bigger cities because they like to be around other highly educated people (Bjerke and Mellander, 2016). In a study on ranking the most important community features in the migration decision, education features were also listed as quite important, namely features as education level of residents, closeness of higher education, and the quality of education in a region (Fiore et al., 2015). In the eyes of individuals, the quality of education can also be related to good primary and secondary schools (Timmer, 2008) and the fact that an undergraduate institution and university are located in the region (Timmer, 2008; Fiore et al., 2015).

*H2d: The higher the Number of Educational possibilities in the region, the lower the Intention to Migrate out of Twente.*

### **2.2.3 – Social Networks and Social Influence, and the use of Social Media (SNS)**

Besides residential and employment factors the intention to migrate can also be stimulated by social networks and norms (Kaplan et al., 2016; Timmer, 2008), but the use of social networking sites (SNS) is not taken into account. The importance of social networks in migration is divided into the variables SNS network's job information provision, Number of Peers in region and on SNS, and Social influence. Next to the three variables, also explained is how social media is applicable. The use of SNS is integrated in the variables, because of its growing use for job openings and can therefore play a role in migration intention. An earlier study on Twente already explained that social networks are important in considering where to start a career after graduating (Timmer, 2008). This was found to be so in 2008, which could be even more enhanced these days by the growing use of SNS among students and for the purpose of finding a job.

#### **SNS network's job information provision**

The importance of social networks in the migration decision is supported by explaining that distance to family, friends and other connected persons is stronger in influencing location choice than the potential income as a decision factor (Sorenson, 2009, 2010, as cited in Miguélez and Moreno, 2014). Because this network is able to provide a person with information on job opportunities (Raider and Siedler, 2009). Miguélez and Moreno (2014) also explain that this is a rather strange result, because research explains that students who completed a degree in higher education are the most mobile group of people (Hansen et al., 2003; Faggian et al., 2008; Haapanen and Tervo, 2012), therefore it is not directly expected that the location decision of this group of people is based on their network. Still this group of people searching for a job do obtain most positions via connections, moreover people tend to make location decisions based on professional relations and networks (Miguélez and Moreno, 2014). A link to SNS can be made because students do have a network on SNS by using these media.

### *Link to Social Media (SNS)*

The Internet is considered as a useful medium informing about career information, job openings and for example assessment tool. These tools can be used by recruiters, assessing them in their search for candidates (O'Halloran et al., 2002). Job-board websites are easy tools to search and browse the online job-market (Joos, 2008). Nowadays, SNS are becoming the most popular tools on the Internet and not only job-seekers as well as job recruiters use SNS besides the more traditional job boards. Recruiters do consider LinkedIn being more effective over Facebook in job recruitment processes (Nikolaou, 2014). It is therefore interesting to find out whether students at the university do also use social media in their search for information on job possibilities, whether they have a network on social media that can provide this kind of information, and whether the network on social media makes the information gathering easier. Besides that SNS are more used tools, the medium is very rich according to the Media Richness Theory, Dennis and Kinney (1998) explain that media differ in richness, whereas face-to-face communication is the richest media, other media are leaner when its capable of sending fewer cues (e.g. gestures) or providing slower feedback. SNS can be considered as rich media since discussion and interaction among users is directly possible (Constantinides, 2014). Young professionals graduating from University can be referred to as millennials or generation Y (between 18-29 years old). This group of people spend on average at least eight hours daily with digital technologies, and social media is becoming their primary medium to use when communicating and searching for information. This digital generation becomes an influential online community (Hurrell and Postatny, 2015). Sin and Kim (2014) do support this statement by mentioning that University students use social media for everyday life information seeking. Using social networking sites is playing a role in the information provision, people find that they can get specialized knowledge and information through social media and that social media interactions with others allow exchange of information and opinions with others (Hwang and Kim, 2015).

*H3a: The higher the Provision of information via the network in the region, the lower the Intention to Migrate out of Twente.*

### **Number of Peers in the region and online**

Another way in which social networks are important considering the intention to migrate to another region after graduating, is that integration in the region can be facilitated by the network present in that region, e. when moving back to the region originating from (Rainer and Siedler, 2009). This factor differs from the Sociability of the residential area (p. 9) in the way that a smoother integration in a region can be facilitated by the number of peers in the region, the number of people you already know and are close to you such as family and friends. Sociability of the region is directed towards the way in which the community accept others, therefore this does not refer to the peers known by a person.

Migration into a new region will run smoother, and people are more likely to choose for migration when the social network - family, friends and professional connections - is large in that region. Besides social network, a shortage on job possibilities and bad job perspectives are indicators of intention to migrate (Hunger, 2003 as cited in Timmer, 2008), these factors are already mentioned in paragraph 2.2.2. In earlier research on Twente, it was concluded that students originating from Twente have a stronger positive feeling with the region than students not originating from Twente (Sprakel, 2008) resulting in students not originating from Twente being more likely to migrate (Timmer, 2008). Therefore, aspects to base the decision to migrate on will be whether the region is the region of origin, whether a lot of friends and family live in the region (Kaplan et al., 2016), whether the participant has

a big social network in other regions (Kaplan et al., 2016; Timmer, 2008; Hansen et al., 2003), whether they think a network in a region is important for them to consider starting to a career in that specific region, and whether people would move to a region when friends living in that specific region give advice on job possibilities. Not clear yet is how social influence and use of SNS play a role in the migrate intention in Twente, which can be enhanced since the use of SNS has increased in the last years. The presence of the social network can also be linked to SNS.

#### *Link to Social Media (SNS)*

The connections people have with family and friends, explained as social networks, do also exist on social networking sites (SNS). A study shows that social networking sites were used by participants to follow others and/or seek out the same experiences, for example being exposed to updates of friends backpacking influenced others to study overseas (Beech, 2014). As explained in other studies, decisions are made due to social interactions with friends and family (Miguélez and Moreono, 2014) and networks function as an effective transmission of information about job opportunities, and can also facilitate the integration in a new region because of social support and useful contacts in searching for a job (Rainer and Siedler, 2009). Job search is one of the main reasons why people use and decide to join SNS, especially SNS's that focus on professional audience, such as LinkedIn (Nikolaou, 2014). Users can be exposed to job posts of different companies because employees of the organization often may spread vacancies among friends or professional connections. This can both be done on the more personal SNS called Facebook, but also on the more professional SNS called LinkedIn. Hereby, the vacancy will be announced on a large scale (Caers and Castelyns, 2011) and can reach people living in other regions as well.

Having a person on social media that can be trusted for advice about making important decisions is one of the aspects of the network on social media that provides support (Hwang and Kim, 2015). In the intention to migrate, making this decision can be facilitated by a trusted person on social media giving advice on job possibilities. This research will also focus on the questions regarding the number of peers online and the influence on the migration decision. Does the number of peers out of a specific region that one is connected to on SNS play an important role in supporting one to also move to that specific region. Is a person attracted to a region when a lot of SNS connections live there, and would a negative opinion about a region by a person's SNS connections influence the decision to migrate to that specific region.

*H3b: The higher the Number of Peers in region, the lower the Intention to Migrate out of Twente.*

*H3c: The higher the Number of Peers in the region on SNS, the lower the Intention to Migrate out of Twente.*

#### **Social Influence**

As mentioned, the study by Fiore et al. (2015) indicated four factors influencing migration, the second one mentioned is being close to family and friends. This factor is also taken into account in the study by Kaplan et al. (2016), herein it is explained that the likelihood of inter-regional migration in Germany is related to social networks at the destination to migrate to. Moreover, very important is the support of family and friends out of the region of origin towards migration to another region. The other way around, strong social networks (family and friends) and the network's opinion also count as one of the main reasons to stay in the region of origin. The support of family and friends could be explained as social norm, where the opinions and behavior of people - within the social network of the student - on

the region of origin and the destination region are seen as important (Kaplan et al. 2016). The intention to migrate is 'a primary determinant of behavior, and a product of social norms - the perceptions of what significant others think about the behavior - and expectations that one will attain valued goals as a consequence of the behaviour' (De Jong, 2000, p. 309). The study explained that the major determinants of migration intentions are the expectations that goals can be reached in an alternative location together with perceived family norms about the migration. Both supporting and non-supporting arguments and or opinions about a region by family and friends, the social network, play a role in migration decisions (Timmer, 2008). Also social norm leads to people complying with the opinions of others (Manning, 2009), in the theory of planned behavior this is explained as the subjective norm. The subjective norm in predicting intentions does refer to 'the perceived social pressure to perform or not to perform the behavior' (Ajzen, 1991, p. 188). The perceived pressure to perform can be translated to the person's thoughts about how his family and friends want him to behave regarding staying in or moving to a specific region, the expectation of this group of people, which can influence the intention. Social norm, how your network thinks about the behavior, is part of social influence (McDonald and Crandall, 2015). Social influence explains the way people affect or influence other's behaviors, and can be distinguished in local and global influences. Local influences is defined as the influence of friends or acquaintances on an individual's behavior (Onnela et al., 2010). In this study the influence of family and friends, local influences, can be expected to be most important.

*H3d: The higher the Social Influence of the network in the region, the lower the Intention to Migrate out of Twente.*

#### 2.2.4 – Awareness of chances and Receiving information about work

Researched are the awareness of job possibilities, and initiatives and websites that could provide information about available job openings and companies in the region. Starting with the an university activity on jobs, websites on jobs in Twente, and finally the interest in receiving career updates through SNS of these initiatives based in Twente.

An earlier study among students in Twente, explained that almost fifty percent of students does not has a clear view on job possibilities in Twente. More specifically, only one-third of the participants did know where to find information about job possibilities (Sprakel, 2008). This clarifies the fact that students are mostly not aware of career chances in Twente after graduating in this region. The before mentioned study also explained that two-thirds of the participants would like to receive information on job possibilities, only one-fifth part is aware of the institutions that could offer help in job search, forty percent of the participants indicated that they would like to receive information about these institutions. However, the study did not take into account whether students are familiar with specific websites or events focussing on job possibilities in Twente, and how they would like to receive information, e.g. via more career events, social networking sites, e-mail etc. The importance of receiving information is supported in a study where the majority of graduates indicated that university activities, e.g. job fairs, are the most helpful activities for students in finding a job (Braswell and Gottesman, 2001). To provide students with more information on job possibilities, it is interesting to find out whether they are familiar with websites and career events within the region and if they visited these initiatives before. For students it is important to have opportunities to meet employers who are located in the region. The opportunities to meet more employers out of other regions compared to the local employers can be an factor in predicting migration intentions. Students graduate in an

international market and decisions on whether to stay in a specific region or not can be based on the employer that offers them the first opportunity (Braswell and Gottesman, 2001). This means that career fairs with a high number of companies within the region can increase the number of students that stay in the region. According to research, graduates would like to receive more information on job openings and did not know where to find information on this topic. Therefore, the following initiatives and websites about job openings in Twente could be researched on whether students are familiar with them, and whether they find it relevant to receive information about jobs via SNS by these initiatives.

### **University activity**

*Career Fair - Bedrijvendagen Twente*; The Bedrijvendagen Twente is a career fair which is organized by the University of Twente once a year. About 140 companies participate and each sector is represented by either small regional companies or large multinationals. Activities that are being organized during the Bedrijvendagen are one-on-one conversations with a company students are interested in. Other activities are the job market, various training sessions are organized to help prepare for job interviews in the future, and even company breakfast, lunch or dinner (Bedrijvendagen Twente, 2017). This is an activity organized by the University during which students can get more information on job possibilities. However, not only within the region but also national or even international, therefore it can be one of the activities in which students could get more knowledge about the regional jobs which is important in considering to stay in a region (Braswell and Gottesman, 2001).

*H4a: The higher the awareness of University activities on job possibilities in Twente, the lower the Intention to Migrate out of Twente.*

### **Job websites on region Twente**

*Kennispark.nl*; The Kennispark Twente Foundation and a diverse number of partners work on linking highly educated and talented people with companies in the region Twente. For international people an expat desk at the WTC Twente could offer help in finding a job. Kennispark is the largest innovation campus in The Netherlands, with 384 registered companies providing 6,300 jobs (Kennispark Twente Foundation, 2013).

*Twente.com*; The website Twente.com offers a range of job openings in the region, more than one hundred profiles of companies in various sectors can be found on the website. People searching for jobs in the region can become a member to receive updates on new job openings, also work experiences of professionals can be found online (Twente.com).

If students are aware of both websites mentioned, and know that it provides help in finding a job, this can help students in becoming aware of the career chances the region could offer them. What could lead to students deciding to start their career in Twente. Initiatives offering help in finding a job was explained in earlier research as one of the factors students are not yet familiar with (Sprakel, 2008).

*H4b: The higher the awareness of Kennispark on job possibilities in Twente, the lower the Intention to Migrate out of Twente.*

*H4c: The higher the awareness of Twente.com on job possibilities in Twente, the lower the Intention to Migrate out of Twente.*



### **Interest in SNS updates on jobs**

The university activities and websites in Twente on job possibilities for students almost graduating the University of Twente do also use different types of social media:

- Career Fair - Bedrijvendagen Twente uses Facebook, LinkedIn and Twitter.
- Kennispark Twente uses Facebook, LinkedIn, Twitter, and YouTube.
- Twente.com uses Facebook, LinkedIn, Twitter, and YouTube.

Different studies already explained that social networking sites (SNS) are more and more used by people searching job openings online (Nikolaou, 2014; Caers and Castelyns, 2011). Corresponding evidence can be found in an American study among 2.300 adults by Jobvite (2016). Which shows that job seekers are mostly present on Facebook, and recruiters on LinkedIn. This research also explains that of the people who used SNS to find their most recent job, 67% used Facebook and only 35% used Twitter. Whereas of the recruiters 87% used LinkedIn and only 55% used Facebook. Research could find out whether students would like to follow the social networking sites of initiatives that could inform about job opportunities. The interest in the SNS pages of the initiatives can be measured.

*H4d: The higher the Willingness to follow SNS updates on job possibilities in Twente, the lower the Intention to Migrate out of Twente.*

### **2.2.5 – Individuals background as moderator**

Students come from different regions to study at the university, more often also from different countries. Also the different fields in which students obtain their degree could influence students' opinion on whether the region could offer a suitable job in that field. Therefore, a distinction could be made between field of study, origin, and nationality of participants in the factors influencing the migration intention.

### **Field of study**

The difference in field of study among students could make different factors to be important in the decision to stay in the region where they all obtained their degree. As mentioned before, research on the field of study of students and their view on migration after graduation, can provide information on the gains and losses of talent in those different fields (Braswell and Gottesman, 2001). The author expected field of study to be a significant predictor of migration, however in the institution as part of the research it did not show to be a predictor which has been the fact in the research by Tornatzky et al. (2001, as cited in Braswell and Gottesman, 2001). In the region Twente, not only the UT focusses on the technical aspect of the region being the strongest point of Twente (Twente.com, 2016). The sectors with relatively many job openings within the region (compared to all the other areas of The Netherlands) are commerce, repair, health and welfare, and metal engineering industry (Twente Index, 2013). The focus is mainly on the Technical aspect, which is considered as a unique and important aspect when referring to the region. Also the career fair Bedrijvendagen has a high number of companies present at the fair, aimed at the Technical students of the UT (Stichting Bedrijvendagen, 2016). Therefore, expected could be that Technical students are more likely to stay in the region considering the attention given to the technical focus of the region, and the technical demand which is emphasized in different ways.

*H5a: Attaining a Technical study instead of a Non-Technical, the lower the Intention to Migrate out of Twente.*

*Subquestion H5a: Do different factors play a role in influencing the Intention to Migrate, considering students' Field of Study?*

### **Origin and Nationality**

Another factor of an individual's background is the origin, the region or country a person lived and or studied before choosing another city and/or region as a place to gain further knowledge. An American study at a university found that 51% of individuals originating from the state where the university was located were planning on staying in the same region after graduation (McCauley, 1999, as cited in Braswell and Gottesman, 2001). In another American research the time a person spent in a specific state, by which is meant the state where a person also went to school and college before university, the higher the chance these persons would start their career in the same state (Tornatzky, et al., 2001, as cited in Braswell and Gottesman, 2001). Therefore, evidence in literature is found that origin, the region a person lived before going to university, plays a role in migration decisions. An earlier study on students in Twente shows that individuals who originate from Twente have a stronger feeling of being connected with the region, compared with students who are not from this region (Sprakel, 2008). However, the sample did not include international students studying in the region. Studying abroad becomes a more and more popular choice, but other studies on the region Twente did not include the opinion of foreign students on staying or leaving the region after graduation. To illustrate, a lot of German students study at the UT which could make an analysis between nationalities on differences in factors influencing the intention to migrate possible.

*H5b: Originating from Twente instead of another region or country, the lower the Intention to Migrate out of Twente.*

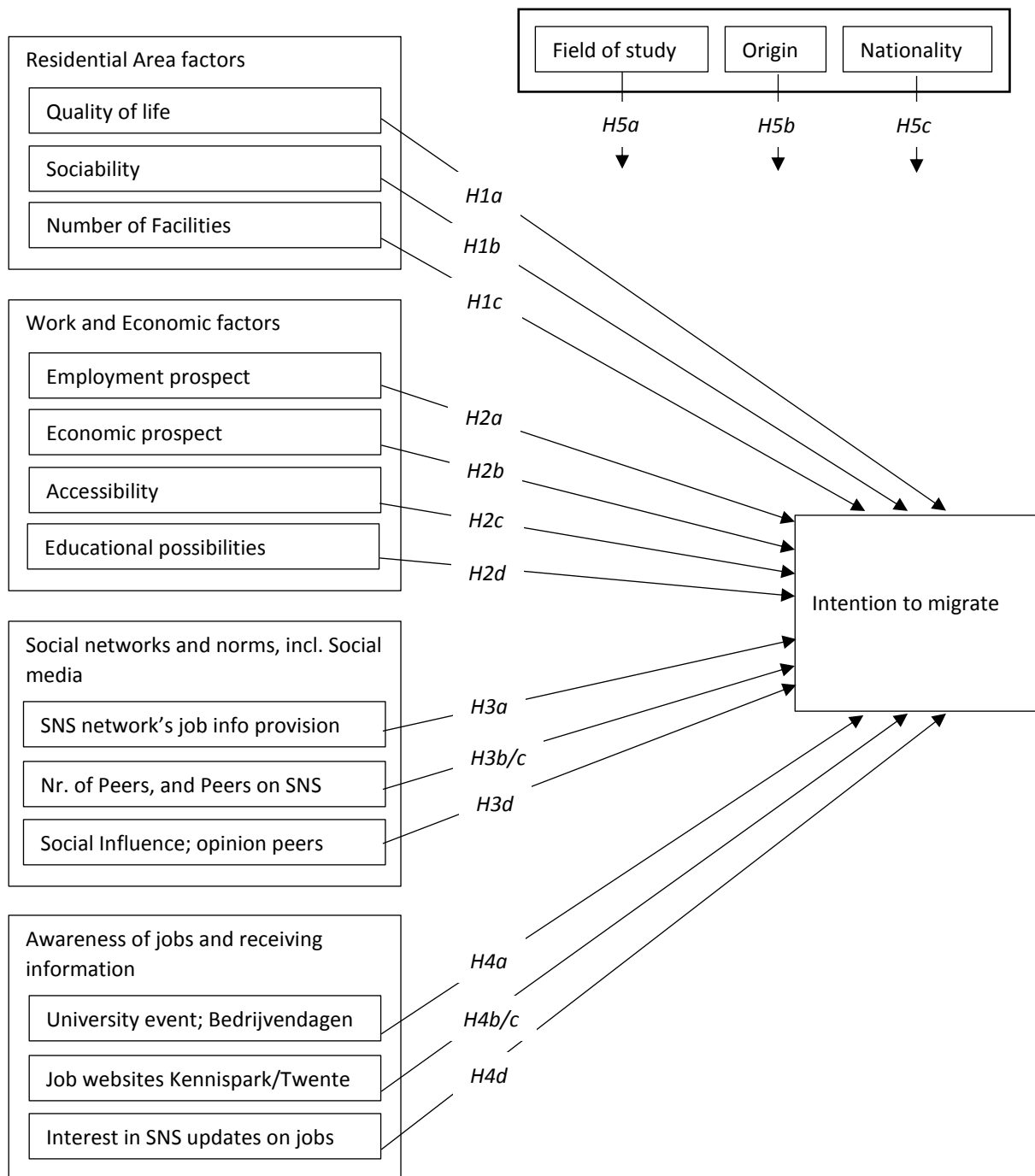
*Subquestion H5b: Do different factors play a role in influencing the Intention to Migrate, considering students' Origin?*

*H5c: Having a Dutch instead of another Nationality, the lower the intention to Migrate out of Twente.*

*Subquestion H5c: Do different factors play a role in influencing the Intention to Migrate, considering students' Nationality?*

### 2.3 – Research model

The aim of this study is to research which factors of migration decisions are most important for students after graduating university and choosing where to live and work (figure 1).



**Figure 1 – Schematic representation of the research model**

### 3. Methodology

The factors gathered out of literature are measured by the distribution of a survey among students at the UT. The participants and survey will be discussed, furthermore the pre-test and the analysis by which the constructs of the variables are formed. This makes that further analysis can be performed.

#### 3.1 – Participants

The study focusses on students currently studying at the University of Twente (UT) in Enschede. Not only Dutch students do study at this university, also international students. Participants are both Dutch and International students, to see if differences in binding factors of Twente can be found between different nationalities, German students will be looked at specifically as well. Students out of all faculties will be taken into consideration, as factors for migration decisions may vary among different studies. In the analysis in the next chapter a distinction will be made between Technical and Non-technical students, based on the study they mentioned to be enrolled in in the survey.

- **Pre-test participants:**

The 46 participants for the pre-test were asked to fill out an online survey, in total 114 people were emailed to participate. All participants are students at the UT and were asked personally at the UT to participate and to provide their email address. An email request to participate was sent afterwards. By randomly asking students who were studying at the different UT buildings on the days the researcher gathered the email addresses, the pre-test includes different fields of study.

- **Main research participants:**

To reach as many students from different faculties ten study associations at the UT were contacted asking to distribute the survey among their members. However high amounts of money were asked for distribution, therefore the survey is not distributed among their members. Also a number of 100 flyers were distributed at the university library to ask students to fill out the online survey. No exact number of participants could be seen in the survey tool Qualtrics.

Another tool used is the SONA System of the UT, a tool to distribute an online survey among students of the UT (only Bachelor Psychology and Communication students). The students participating were granted with a credit, obtaining credit is a compulsory part of their study. For the timeslot 300 students could sign-up and participate in the online survey, in total 230 students signed up and 223 students completed the survey.

To get a more equal distribution between Bachelor and Master students and different fields of study, the researcher collected email addresses of UT students by personally asking students to participate. A request by email to fill out the survey was sent to 430 students. Most email addresses were collected at the University Library, since this is a place students of all different fields of study go to. In total 159 of them participated. Unfortunately, 89 participants who started the survey did not manage to complete the survey.

The total number of people that participated in the study is 428 UT students (pretest; 46 students, sona-system; 223 students, final email distribution; 159 students). However, the completed surveys of 41 participants have not been taken into consideration in the further analysis. Therefore, N=387. Reasoning behind this decision is that participant's did not properly answered a part of the questions, e.g. 'high-school' or 'finished master degree' as an answer to their current education level, or because of consistently answering items on one level of the Likert-scale. Therefore, these participants did not provide a trustworthy response.

### 3.2 – Questionnaire

The questionnaire was composed and distributed among the participants with the use of an online tool, called Qualtrics. In the first part of the questionnaire, the demographic information of the participants was gathered, including gender, age, nationality, origin (city/country), and living situation (with whom). Also asked was where they live during their study at the UT, to make sure a distinction in research can be made between students living in Enschede and those who do not. Furthermore, information was gathered on the field of study, the number of years studying at the UT, and finally what made the students decide to study at the UT.

The information provided in this section of the questionnaire can be used as moderators in the data analysis, e.g. to get insight in the differences in the participants intention to migrate based on their field of study.

#### **Measurement of Intention to migrate**

The intention to leave the region, the intention to migrate, was measured by asking how likely the participants consider themselves to move within the next 3 months after graduation (scale 1 – 5). This question is consistent with the literature found on how to measure intentions (Simmons, 1986).

Next, an open question asked participants to give the most important reasons to stay in Twente after graduating University (maximum of three reasons). And the most important reasons to leave Twente (maximum of three reasons). This was done to see which factors are being mentioned by participants before the exposure to the items measuring the influence of the different variables. In the analysis afterwards, the variables analysed as most important in the intention to migrate can be compared to the reasons given by the participants in the open question beforehand. Furthermore, asked was in which area they want to search for their job, and migrate to (Twente; another region in The Netherlands, namely .. ; another country, namely ..). Followed by an open question asking for a motivation regarding their decision for the previously mentioned region/city.

After the intention to migrate, the specific items regarding the variables Residential Area, Work and Economic, Social Networks and Social Influence including SNS use, and Awareness of job initiatives were measured. These items do refer to Twente and give the participant the option to agree or disagree with the items on a five point Likert-scale. The measurement items can be found in appendix 1 (p. 52).

### 3.3 – Pre-test

The complete questionnaire (appendix 2, p. 55) including all the measurement items is pre-tested among 46 people, all students of the University of Twente. The measurement items are based on different studies in the literature review, a factor analysis should make sure that the components do agree with the before mentioned combinations of measurement items that do form the variables of this research.

In the analysis the Principal Components analysis is used to extract maximum variance from the data set with each component, reducing a large number of variables into smaller number of components (Young and Pearce, 2013). The output of the following factor analysis can be found in appendix 3, p. 62.

### **Factor analysis 'Residential area' (H1a – H1c) and 'Work and Economic' (H2a – H2d) factors**

The factor analysis (figure 3 in appendix 3, p. 62) resulted in thirteen components, however only the first eight components have a logic combination of more than 3 items. The other components should not be included as variables. The items out of literature (measurement tables 12 and 13, appendix 1, p. 52) can be found in the following combinations as components:

- Component 1: related to Employment Prospects (H2a)
- Component 2: related to Sociability (H1b)
- Component 3: related to Quality of life (H1a)
- Component 4: related to Housing/living costs (H2b); in table 13 originally described as 'Economic Prospect'
- Component 5: related to Educational possibilities (H2d)
- Component 6: related to Safety (in table 12 originally part of H1a)
- Component 7: related to Number of Facilities (H1c)
- Component 8: related to Accessibility (H2c)

Items within the components that do not match the other items are 'a possibility to live close(r) to work' (in the appendix called; H2a\_6), 'a short home-to-work travel' (H2c\_1), 'in general little traffic' (H2c\_6), 'good primary and secondary schools' (H2d\_2). A second factor analysis without the four before mentioned items did show more similarities between the measurement items out of literature and the components out of the analysis. However, in the main research the items were part of the survey. After the data was collected of a larger sample size the factor analysis was executed again to analyse the final components (paragraph 3.4).

### **Factor analysis 'Social network, influence and SNS use' (H3a – H3d)**

The factor analysis (figure 4 in appendix 3, p. 63) resulted in six components. The original variables were SNS network's job info provision, Number of Peers in region, Number of Peers on SNS, and Social Influence. The items out of literature can be found in the following combinations as components:

- Component 1: related to Number of Peers in region (online and offline) (H3b and H3c)
- Component 2: related to Location decision based on network (..)
- Component 3: related to Number of Peers in region SNS (H3c)
- Component 4: related to SNS network's job info provision (H3a)
- Component 5: related to Social Influence (H3d)
- Component 6: related to Network's location (..)

The components of the pre-test factor analysis do contain all the items, however spread over more components than presented in table 14 of the measurement items in appendix 1. Therefore, all items were part of the main research. After the data collection of a larger sample size the factor analysis was executed again to analyse the final components. This way the number of components that are used as variables in the analysis of the results can possibly be reduced.

### **Factor analysis 'Awareness of jobs and receiving Information' (H4a – H4d)**

The factor analysis (figure 5 in appendix 3, p. 63) resulted in four components, explaining that the measurement items are related to four different variables regarding the importance job related initiatives.

- Component 1: related to Interest in SNS updates of Initiatives (H4d)
- Component 2: related to Twente.com as website in region (H4c)
- Component 3: related to Kennispark as website in region (H4b)

- Component 4: related to Bedrijvendagen as University initiative (H4a)

The items that do not match the component are 'It's interesting to get in contact ... during the career fair' (H4a\_3) and 'It's interesting to visit the career fair ... located in Twente' (H4a\_4), both items should better fit in component 4. The item 'It's interesting to be updated ... Twente.com on career news' (H4b/c\_6) should better fit component 1 related to SNS. The mentioned items do match with the corresponding component if the items related to the SNS updates are taken out of the factor analysis. However, all items are part of the survey for the main research. The factor analysis was executed again to examine changes in component constructs with a larger sample size in the final data gathering.

The order in which the questions related to the Initiatives are asked was changed in the survey for the main research. In the pre-test the participant's familiarity with the three initiatives is firstly measured, afterwards items on a 1-5 scale are given on the importance of the initiatives. Because these items ask the participants how important they find the initiatives and how likely they feel themselves to follow the initiatives on SNS, it is found to be necessary by the researcher that the participants are also familiar with the initiatives. This is also a result of the suggestions participants could leave after filling out the survey. Therefore, the pre-test explains that only when answered 'Yes' on being familiar with the initiatives, the participants in the main research were exposed to the items on importance of the initiatives etc. on a five point Likert-scale on agreement.

### 3.4 – Factor analysis main research

The factor analysis is executed to form variables that are based on the components of the final sample size (N=387). The outcomes of the factor analysis can be found in appendix 4, p. 64.

#### **Factor analysis 'Residential area' (H1a – H1c) and 'Work and Economic aspects' (H2a – H2d)**

The first factor analysis on the items of H1a – H1c and H2a – H2d explained that the following seven items are taken out of the analysis, because of a negative value in a component ('good health services' H1c\_6) or component construct of only two or three items without forming a logical combination of items out of literature ('enough space in residential area' H1a\_7; 'a green environment (nature)' H1a\_9; 'enough shops for basic goods' H1c\_2; 'a rich historical background' H1c\_7; 'a possibility to live close(r) to work' H2a\_6; 'a short home-to-work travel' H2c\_1; 'in general little traffic' H2c\_6; 'good primary and secondary schools' H2d\_2). These items were taken out of the factor analysis (figure 6 in appendix 4, p. 64), because participants' suggestions at the end of the survey explained that students judged themselves not having enough knowledge on for example the two items mentioned related to living close to work. Next, an overview of the variables computed are given, including two items per variable to explain the factor being measured. The complete constructs of the variables can be found in appendix 5 (table 16, p. 66).

#### *Residential area*

- Attractiveness of region (H1a) - a pleasant living environment; a high quality of the environment.
- Safety (H1a-2) - a low crime rate; safety, at home and in the streets.
- Sociability (H1b) - a friendly community; solidarity among community members.
- Number of Facilities (H1c) - a variety of shops; enough events, organized regularly.

A new name was given to the variable 'Attractiveness of region', because 'Quality of life' was not applicable for the items within the new construct. The factor analysis showed a new construct variable with less items than originally formed out of literature.

#### *Work and Locational factors*

- Employment prospect (H2a) - a range of interesting employers; a prosperous market.
- Costs of living/Housing (H2b) - reasonable housing costs; low living costs.
- Accessibility (H2c) - good infrastructure; good connection to other regions in NL.
- Educational possibilities (H2d) - high quality of education; possibility to get an (further) education.

A new description was given to 'Costs of living/Housing'. The variable that was previously formed out of literature covered more items related to the economic prospect of the region, therefore the variable was named accordingly. However, the factor analysis showed that two items of this variable better fits the employment prospect variable (the last two items in H2a). Therefore, 'Economic prospect' is not applicable as a construct name. In further analysis, 'Work and Economic factors' is changed in 'Work and Locational factors', since locational refers to housing and also to accessibility and education.

#### **Factor analysis 'Social network, influence and SNS use' (H3a – H3d)**

The factor analysis (figure 7 in appendix 4, p. 65) resulted in one item having a negative outcome ('many of my social media friends live in other regions in NL' recoded H3c\_5) or scoring low as part of an variable ('my family/friends think west NL is better than east' recoded H3d\_4; 'many of my social media friends live abroad' recoded H3d\_6), these item are deleted. The factor analysis explained five components could be formed, the last referring to 'Nr of Peers on SNS', which will be further treated in paragraph 4.2 Reliability. The following variables are computed. The complete constructs of the variables can be found in appendix 5 (table 16, p. 66).

#### *Social network and SNS*

- SNS network's job info provision (H3a) - social media makes it easy to find a job through my network; using social media I can get specialized information on job possibilities.
- Nr of Peers online/offline (H3b) - many of my (social media) friends live in Twente; my network provides information on jobs in Twente.
- Proximity to network (H3b-2) - being close to family and friends is important when considering place to work; it is important to have a network in the region I will start to work.
- Social Influence (H3d) - my family/friends generally think positive about Twente; my family/friends see Twente as a good residence option.

#### **Factor analysis 'Awareness of jobs and receiving Information' (H4a – H4d)**

The factor analysis resulted in H4d being only related to the items on Social Media (figure 8 in appendix 4, p. 65). Whereas in the pre-test, the item 'It's interesting to visit the career fair mainly for the companies located in Twente' was part of the component related to Social Media, instead of the career fair Bedrijvendagen (H4a). Therefore, the following variables are computed. The complete constructs of the variables can be found in appendix 5 (table 16, p. 66).

#### *Awareness of initiatives on jobs*

- Bedrijvendagen (H4a) - visiting the career fair Bedrijvendagen Twente helps to get in contact with



companies; it's interesting to get in contact with companies located in Twente during the career fair.

- Kennispark (H4b) - it's interesting to get in contact with companies in Twente with the help of Kennispark; for job search Kennispark Twente is important.
- Twente.com (H4c) - becoming a member of Twente.com helps to get in contact with companies in Twente; visiting Twente.com helps to get in contact with companies in Twente.
- Interest SNS updates initiatives (H4d) - it's interesting to follow .. on Social media; it's interesting to be updated via the social media of .. on career news (asked for all three initiatives separate).

All items grouped into the new variables will be used to analyse the research question of the main research. The items grouped as variables as outcome of the literature review will therefore be overruled by the outcome of the factor analysis. Main reason to do so is that the items out of the literature review were not gathered out of one study, but were combined items into one variable out of different studies. The factor analysis of the main results resulted in variables by statistical proof.

### 3.5 – Reliability variable constructs

For the variables out of the factor analysis the reliability level was measured using Cronbach's  $\alpha$  (table 1). The factor analysis did result in sub constructs 'Safety' (H1a-2) and 'Live close to peers' (H3b-2). The sub construct 'Safety' has a low number of items but an adequate reliability level above  $\alpha = .70$ , therefore the sub construct will remain part of the research, to measure whether there is an effect on the dependent variable 'Intention to migrate'. The sub construct 'Proximity to peers' is part of H3b as a separate variable and will be treated as a variable. This construct was not taken out of literature as a separate variable, but since the reliability level is good – adequate it will remain part of the research.

The construct 'Nr. of Peers in region online/offline' is a combined construct of the items related to the offline and online network of the participants in the region. A possible reason for this could be that participants do consider the same people as part of their network when asked about agreeing on the items 'many friends live in Twente' and 'many social media friends live in Twente'.

Unfortunately, the factor analysis and Cronbach's alpha of the construct 'Nr. of Peers in region on SNS' did not result in a reliable construct ( $\alpha = .51$ ). However, H3b showed to be a combination of the online and offline network.

### 3.6 – Normality

The Kolmogorov-Smirnov test was performed in order to test whether the variables are normally distributed. The Kolmogorov-Smirnov test is the most used test in statistics (Ghasemi and Zahediasl, 2012). The test shows a p-level of .00 for the 16 independent variables and the dependent variable 'Intention to migrate'. All variables score below the significance level of  $p=0.05$ , therefore the data is not normally distributed (Huizingh, 2014). The variables are also plotted in a histogram to check normal distribution, all data was skewed. Depending on whether the data was positively or negatively skewed, the variables were transformed by performing Log transformations. The new variables are used in further analysis.

### 3.7 – Correlation

The Pearson correlation coefficient analysis has been performed to measure the extent to which the independent variables are related, either a positive or negative relation (Huizingh, 2014). Table 1 provides the correlations between the variables. The bold numbers are significant correlations between variables, however not all of them are positive. The r-value of 0.90 to 1.00 indicates a very high correlation, 0.70 to 0.89 a high correlation, 0.50 to 0.69 a moderate correlation, 0.30 to 0.49 a low correlation and 0.00 to 0.29 little if any correlation (Asuero et al., 2007).

To illustrate, there is a moderate, positive correlation between 'Attractiveness of region' and 'Sociability' ( $r = .60$ ,  $N = 387$ ,  $p < .01$ ). The same applies to 'Attractiveness of region' and 'Nr of Facilities' ( $r = .55$ ,  $p < .01$ ). High correlations are measured between the initiatives on jobs; 'Bedrijvendagen' and 'Kennispark', and the 'Interest in job updates on SNS' of these initiatives. However, the former negatively ( $r = -.75$ ,  $p < .01$ ) and the latter positively ( $r = .72$ ,  $p < .01$ ). The other initiative on jobs 'Twente.com' also has a moderate positive correlation ( $r = .60$ ,  $p < .01$ ). However, all other correlations cannot be considered as moderate, the values below 0.50 indicate low correlations or no correlations between the variables.

**Table 1 – Pearson Correlation coefficients, including mean, standard deviation and Cronbach's alpha**

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Attractiveness region	2.33	.55	<b>.78</b>															
2. Safety	2.42	.81	.27**	<b>.72</b>														
3. Sociability	2.37	.67	.60**	.28**	<b>.89</b>													
4. Nr of Facilities	2.55	.66	.55**	.17**	.46**	<b>.71</b>												
5. Employment prospect	2.89	.51	.46**	.07	.32**	.34**	<b>.88</b>											
6. Housing/Costs of living	2.62	1.04	.17**	.12*	.13**	.01	.12*	<b>.82</b>										
7. Accessibility	2.70	.67	.41**	.15**	.36**	.40**	.32**	-.26**	<b>.66</b>									
8. Educational possibilities	1.91	.61	.44**	.17**	.29**	.39**	.24**	.11*	.26**	<b>.68</b>								
9. SNS network's job info provision	2.90	.71	.09	.10	.08	.05	.17**	.15**	.02	.04	<b>.78</b>							
10. Peers in region online/offline	3.27	.95	-.17**	-.11*	-.17**	-.09	-.14**	-.36**	.06	.04	-.29**	<b>.74</b>						
11. Proximity to network	2.80	.78	.12*	.11*	.15**	.14**	.20**	-.08	.18**	.08	.21**	-.04	<b>.65</b>					
12. Social influence	2.86	.71	.39**	.09	.36**	.30**	.26**	.13*	.17**	.23**	.07	-.44**	.00	<b>.69</b>				
13. Bedrijvendagen	2.26	.69	.10	.09	.05	.09	.18**	.49**	-.19**	.19**	.23**	-.28**	-.02	.10*	<b>.72</b>			
14. Kennispark	2.48	.71	-.07	-.03	.01	.04	-.12*	-.32**	.12*	-.12*	-.12*	.18**	-.01	-.08	-.36**	<b>.79</b>		
15. Twente.com	2.57	.69	-.01	-.11*	-.06	.07	-.05	-.20**	.07	-.04	-.16**	.14**	.05	-.06	-.30**	.34**	<b>.90</b>	
16. Interest job updates SNS	3.03	.90	-.07	.20	-.03	.01	-.12*	-.46**	.23**	-.13**	-.28**	.32**	.03	-.10	-.75**	.72**	.59**	<b>.92</b>

(\* = correlations are significant at  $p=0.05$ ; \*\* = correlations are significant at  $p=0.01$ ; numbers in bold are significant)

## 4. Results

The results on the main research will be discussed in this chapter. Firstly, the hypothesis are tested by a hierarchical regression analysis in SPSS. Secondly, the participants reasoning behind staying in Twente or leaving Twente after graduation will be discussed. Furthermore, the demographic information, and the educational level of the participants will be discussed.

### 4.1 – Intention to migrate

The Intention to migrate was measured by asking participants how likely they considered themselves to leave Twente in three months after graduation. Table 2 indicates that 59.4% of the respondents indicated their intention is to leave Twente after graduation, either likely to or very certain to. The mean of 2.29 also explains that on average students are likely to leave Twente.

**Table 2 – Intention to migrate (N=387)**

	Mean	SD
Leave Twente after graduation	2.29	1.081
	Freq.	%
Very certain	110	28.4
Likely	120	31
Maybe	105	27.1
Unlikely	40	10.3
Very uncertain	12	3.1

Differences in the Intention to migrate can also be present per Field of study, origin and nationality. A distinction is made in Technical and Non-technical studies on all different studies the participants explained to be following. The students following a Technical study (N=125) are Likely to Very certain to leave Twente after graduating, namely 52.8% of them. More of the Non-Technical students (N=262) feel Likely to Very certain in leaving, namely 62.6%. For both groups a much lower number of participants feel Unlikely to Very Uncertain in leaving, only 18.4% of the Technical students, and 11.1% of the Non-technical students. Concluded can be that Non-Technical students are more certain about leaving Twente after graduation.

A distinction in intention to migrate categorized in origin has been made. The students who originate from Twente (N=69) are more Unlikely or Very Uncertain to Leave Twente after graduation, indicated by 37.7% of them (24.6% is Likely to Very Certain to leave). The other students either who originate from other regions in the Netherlands (N=119) or from other countries (N=199) indicate they are more Likely to Very Certain to Leave Twente, respectively 63.9% and 68.8% of them. Only respectively 9.2% and 7.5% are Unlikely to Very Uncertain to leave.

The last analysis can be done on the different nationalities of students at the UT. Among Dutch students (N=188), 49.5% are Likely to Very Certain to Leave Twente after graduation. For the students with a German nationality (N=170) and students with other nationalities (N=29) this is even higher, respectively 70.0% and 62.1%. Only 19.7% of the Dutch students considers it Unlikely to Very Uncertain to leave Twente. For the German students this is even lower, only 5.3%. A different outcome can be seen for the other nationalities, where 20.7% feels Unlikely to Very Uncertain in leaving.

The study also asked the participants to name the main reasons when considering to stay in, and to leave Twente after graduation. A maximum of three reasons were asked for both scenarios. In total the participants provided 735 reasons to stay in Twente, the answers were clustered in 35 different categories. The top ten of reasons given by the participants (table 3) explains that Social life is considered as really important, both Friends and Family can be found in the top. Secondly Job opportunity is mentioned, this does indicate that students will stay if offered a job. It does not indicate that students think they have a good chance or see Twente as a region with a lot of job opportunities, this was categorized as 'Interesting jobs' ranked as reason twelve.

In total 776 reasons to leave Twente after graduation are given by the participants of the study. The reasons were categorized into 37 categories. Table 4 shows the top 10 of reasons to leave Twente. The main reason would be 'No job opportunity', by this is meant that the participants did not see Twente as a region offering a lot of job opportunities. Also Family and Friends are again mentioned many times. Also going Back to Germany, Language and Job opportunity in Germany are reasons in the top 10. The three indicate that most of the German students would like to go back to Germany for either reasons related to their origin, home country, and lack of knowledge of Dutch language and see no chance on working in The Netherlands, and because they think they have a better chance on getting a job in Germany. The latter one was mostly related to getting a job in Psychology, since a lot of students in the field of Psychology participated in this study.

**Table 3 – Top 10 Reasons to stay in Twente**

	N	%	Cum.%
Social life; Friends	105	14.3	
Job opportunity	81	11.0	25.3
City Enschede attractive	58	7.9	33.2
Mentality of residents Twente	50	6.8	40.0
Social life; Family	47	6.4	46.4
Further educational developm.	44	6.0	52.4
Familiar feeling	40	5.4	57.8
Low costs	33	4.5	62.3
Atmosphere	28	3.8	66.1
Nature	26	3.5	69.7

**Table 4 – Top 10 Reasons to leave Twente**

	N	%	Cum.%
No job opportunity	126	16.2	
Social life; Family	80	10.3	26.5
Small city	52	6.7	33.2
Travel	49	6.3	39.6
Social life; Friends	46	5.9	45.5
Back to Germany	44	5.7	51.2
Language	38	4.9	56.1
Further educational developm.	36	4.6	60.7
Region not attractive	33	4.3	64.9
Job opportunity in Germany	29	3.7	68.7

In the hierarchical regression analysis following this paragraph, the significant predictors of the Intention to migrate will be examined. Also between the groups of students based on their Field of study, Origin and Nationality. The analysis could also show that even if the likelihood of the Intention to migrate do not differ that much between, for example field of studies, the predictors of the Intention can differ.

## 4.2 – Hierarchical Regression analysis

A hierarchical regression analysis was performed to determine the effect of the different factors (IV) on the Intention to migrate (DV) after graduation, which factors do significantly predict the intention to migrate (leaving Twente). Firstly all IV, Residential Area factors (H1a-c), Work and Locational factors (H2a-d), Social network and influence (H3a-c), and Awareness on jobs and receiving information (H4a-d) are taken into consideration (N=387). Afterwards, the analysis will be further tested among participants' differences in, among others Field of study and Nationality.

### 4.2.1 – Hierarchical Regression - Total sample

A significant regression equation was found for model four including all IV (table 5) on  $F(16, 370) = 8.401$ ,  $p < .001$ . With an  $R^2$  of .266 explain that the DV Intention to migrate, leave Twente can be explained by 26.6% by the IV's. In the fourth model the three IV, Peers in region online/offline H3b ( $b = .280$ ,  $p < .001$ ), Social influence H3d ( $b = -.23$ ,  $p < .001$ ), SNS network's job info provision H3a ( $b = .10$ ,  $p < .05$ ) are significant predictors of the Intention to leave Twente.

Concluded can be that Social Influence is the negative predictor of the intention to leave Twente. Social Influence contains items as 'my family/friends see Twente as a good residence option', and 'my family/friends want me to stay in Twente'. The negative influence of this variable indicates that the network thinks positively about Twente as a region and the participant is positively influenced in considering to stay in Twente by the opinion of his family/friends. However, the other two variables (Peers in region online/offline, and SNS network's job info provision) are positively related to the Intention to leave Twente. Items of the variables were, respectively 'many of my social media friends live in Twente', and 'social media makes it easy to find a job through my network'. The positive influence on leaving Twente explains that the network of students is probably located more outside Twente. Explained by the mean score of this construct ( $M = 3.29$ ) and the mean score on the item 'a lot of my family members live in Twente' ( $M = 4.02$ ) that participants are more inclined to disagree with the number of peers in Twente, indicating that this makes them leave. This cannot directly lead to the conclusion that if it would be the other way around, that if participants agree on having a lot of peers in Twente would lead to students to stay in Twente. But this could found to be true. At least concluded can be that students think the number of peers, family and friends, in a region is important for them in the intention to migrate. Also the SNS network's job info provision will give more information of jobs outside Twente, which is why it increases the intention to leave Twente, this is supported by literature (Kaplan et al., 2016; Sorenson, 2009, 2010, as cited in Miguélez and Moreno, 2014).

Also significant is Educational possibilities ( $b = -.09$ ,  $p < 0.1$ ). Educational possibilities also has a negative effect on leaving Twente (at a significance level of 90%), this is a predictor that slightly influences students on staying in Twente, because they see a possibility in accomplishing their Bachelor or Master degree at the University, and think the quality of education is high. This is an outcome that could be caused by the fact that a lot of students are still in their firsts years of studying (78% studies between 0 - 2.5 years at the UT, table 9), and one of the top ten reasons to stay in Twente was 'further educational possibilities' (table 10).

The other hypothesised independent variables are not significant predictors of the Intention to migrate, leave Twente. However, when taken model one till three into consideration (table 5) it shows that other variables are also significant predictors when H3, related to Social networks, is not included. Firstly, model one explains that both Attractiveness of region H1a, and Sociability H1b are significant

predictors of UT students to leave Twente after graduation (respectively,  $b = -.20$ , and  $b = -.14$ , both  $p < .05$ ). This models explain that both Attractiveness of region, and Sociability are significant predictors referring to the Residential area. Both factors do negatively influence the Intention to leave Twente, explaining that the students tend to stay in Twente based on the attractiveness, a pleasant living environment, and the warm-hearted community, being easily accepted, as also found in (Fiore et al., 2015; Hansen et al., 2003).

In model two the IV on Work and locational factors are included in the analysis, seen can be that both Attractiveness of region and Sociability become weaker predictors in the Intention to leave Twente. Here, the IV Employment prospect is a significant predictor at a 90% significant level ( $b = -.10$ ,  $p < 0.1$ ). The negative effect on leaving Twente explains that students think positively about the Employment prospect in Twente. As found in literature Employment factors are also important in the decision to migrate after graduation (Bjerke and Mellander, 2016; Timmer, 2008; Hansen et al., 2003).

Model three shows that after including H3 related to Social networks, the IV Attractiveness of region and Sociability cannot be considered significant predictors. Moreover, the IV Employment prospect becomes a weaker predictor, and even weaker when H4 related to Awareness of Initiatives on jobs is included. Concluded can be that these factors are important in the decision making process of students as found in literature. However, the social network has more power on students' decision to stay or leave, corresponding with Kaplan et al. (2016). The change in R square explains that model three provides the highest increase ( $R^2 = .101$  to  $R^2 = .255$ ), the model in which the social network is included. When the social network of the person itself is involved the students are more likely to leave Twente based on their social network, the residential area factors are not important anymore.

#### *Hypothesis supported*

The hierarchical regression analysis on the total sample ( $N=387$ ) explains that the following hypothesis are supported when taking all variables into account (model 4, table 5):

- The higher the Social Influence of the network in the region, the lower the Intention to Migrate out of Twente (H3d), supported at  $p < .001$ .
- The higher the number of Educational possibilities in the region, the lower the Intention to Migrate out of Twente (H2d), supported at  $p < .10$ .

Further distinctions in Field of study (technical, non-technical), Origin (Twente, other part of NL, other country), Nationality (Dutch, German, other). To analyse whether differences between these groups can be found in predictors of the intention to leave Twente after graduation.

**Table 5 – Coefficients of the variables on the Intention to migrate**

	B	Std. Error	Beta
1 (Constant)	.52	.05	
Attractiveness of region - H1a	-.42	.14	-.20**
Safety - H1a_2	.01	.07	.01
Sociability - H1b	-.25	.11	-.14**
Nr of Facilities - H1c	.04	.12	.02
2 (Constant)	.62	.07	
Attractiveness of region - H1a	-.28	.16	-.13*
Safety - H1a_2	.01	.07	.01
Sociability - H1b	-.24	.11	-.13**
Nr of Facilities - H1c	.05	.12	.03
Employment prospect - H2a	-.29	.16	-.10*
Housing/Costs of living - H2b	-.09	.07	-.07
Accessibility - H2c	.08	.12	.04
Educational possibilities - H2d	-.10	.09	-.06
3 (Constant)	.42	.10	
Attractiveness of region - H1a	-.14	.14	-.07
Safety - H1a_2	.02	.07	.01
Sociability - H1b	-.12	.11	-.07
Nr of Facilities - H1c	.13	.11	.07
Employment prospect - H2a	-.19	.15	-.07
Housing/Costs of living - H2b	.03	.06	.02
Accessibility - H2c	.04	.11	.02
Educational possibilities - H2d	-.16	.08	-.10*
SNS network's job info provision - H3a	.17	.10	.08*
Peers in region online/offline - H3b	.41	.08	.30***
Proximity to network - H3b_2	-.09	.08	-.05
Social influence - H3d	-.43	.11	-.22***
4 (Constant)	.44	.11	
Attractiveness of region - H1a	-.17	.14	-.08
Safety - H1a_2	.02	.07	.02
Sociability - H1b	-.12	.11	-.07
Nr of Facilities - H1c	.17	.11	.08
Employment prospect - H2a	-.16	.15	-.06
Housing/Costs of living - H2b	.06	.07	.05
Accessibility - H2c	.00	.11	.00
<b>Educational possibilities - H2d</b>	-.14	.08	<b>-.09*</b>
<b>SNS network's job info provision - H3a</b>	.21	.10	<b>.10**</b>
<b>Peers in region online/offline - H3b</b>	.39	.08	<b>.28***</b>
Proximity to network - H3b_2	-.11	.08	-.06
<b>Social influence - H3d</b>	-.44	.11	<b>-.23***</b>
Bedrijvendagen - H4a	-.07	.08	-.08
Kennispark - H4b	-.07	.05	-.11
Twentecom - H4c	-.03	.05	-.03
Interest job updates SNS - H4d	.09	.12	.10

(\*\*\*= significant at  $p < .001$ , \*\* = significant at  $p < .05$ , \* = significant at  $p < .10$ )



#### 4.2.2 – Hierarchical Regression - Field of study

A distinction between fields of study can be made on students following a Technical study or Non-technical study. The hierarchical regression analysis explains the significant predictors in four models, the four different groups of variables, as performed before. However, the results will only focus on the fourth model, including all the IV of this research.

A significant difference was found to be present between the two groups Technical and Non-Technical,  $F(385, 386) = 2.838$ ,  $p < .10$  ( $b = -.09$ ). However, the significance level of  $p < .10$  is not that strong. There is a difference in the Intention to migrate of Technical and Non-Technical students, which can be supported by the percentages indicating the measurement of the intention to migrate of the different groups (paragraph 4.1). The students following a Technical study ( $N=125$ ) are Likely to Very certain to leave Twente after graduating, namely 52.8% of them. More of the Non-Technical students ( $N=262$ ) feel Likely to Very certain in leaving, namely 62.6%. The percentages contribute to the difference found in statistics that is not strong. The expectation that Technical students are more likely to stay in Twente cannot be supported.

However, the sub-question on whether different factors do play a role in the Intention to migrate of Technical and Non-Technical students can still be performed.

**Table 6 – Coefficients Technical and Non-Technical students**

	B	Std. Error	Beta
<i>Technical students (N=125)</i>			
Employment prospect - H2a	.45	.22	.19*
Peers in region online/offline - H3b	.54	.16	.32***
Social influence - H3d	-.62	.20	-.29**
Bedrijvendagen - H4a	-.43	.13	-.33***
<i>Non-Technical students (N=262)</i>			
Nr of Facilities - H1c	.40	.15	.21**
Employment prospect - H2a	-.51	.21	-.16*
Peers in region online/offline - H3b	.32	.09	.24***
Social influence - H3d	-.38	.12	-.21**
Twentecom - H4c	-.14	.07	-.15*
Interest job updates SNS - H4d	.32	.16	.34*

(\*\*\* = significant at  $p < .001$ , \*\* = significant at  $p < .01$ , \* = significant at  $p < .05$ )

First Technical students ( $N=125$ ) are taken into consideration. A significant regression equation was found the model including all IV of,  $F(16, 108) = 5.329$ ,  $p < .000$ , with  $R^2 = .441$ . The predictors of the intention to leave Twente (table 6) that do not differ from the total sample are; Peers in region online/offline H3b ( $b = .32$ ,  $p < .001$ ), and Social Influence ( $b = -.29$ ,  $p < .01$ ). The same conclusion can be made as in the analysis of the total sample. Moreover, two other IV are significant predictors. For Technical students also Employment prospect H2a ( $b = .19$ ,  $p < .05$ ), and the University's activity on jobs named Bedrijvendagen H4a ( $b = -.33$ ,  $p < .001$ ) score significant on the Intention to migrate. Employment prospects positively influences the Intention to leave Twente, indicating that Technical students do not see Twente as a region that can offer them a job, they don't think there are enough jobs or attractive companies offering jobs. However, the Bedrijvendagen as a career fair on jobs makes Technical students more likely to stay. The variable Bedrijvendagen did contain items, such as 'Visiting the career fair helps to get in contact with companies', and 'It's interesting to get in contact with

companies located in Twente during the career fair'. Based on the questions asked in this research, concluded can be that the career fair is important for Technical students, and they think it is interesting to get in contact with companies in the region.

Non-Technical students (N=262) are analysed, and resulted in a significant regression equation of the model including all IV,  $F(16, 245) = 5.861$ ,  $p < .000$ , with  $R^2 = .277$ . As seen in the analysis on Technical students, here the predictors Peers in region online/offline ( $b = .24$ ,  $p < .001$ ), and Social Influence ( $b = -.21$ ,  $p < .01$ ) are also significant. The same effect of both factors is measured as for Technical students. Furthermore, for this group of respondents Employment prospect has a negative coefficient ( $b = -.16$ ,  $p < .05$ ), instead of positively in case of Technical students. In contrast to Technical students, Non-technical students think more positive about the Employment prospect in Twente. Concluded can be that students following for example Psychology and Communication science are more positive to stay based on Twente having challenging jobs to offer, and interesting companies in the region.

The Number of Facilities is a positive predictor in leaving Twente ( $b = .21$ ,  $p < .01$ ). Concluded, students do not think Twente has a lot to offer concerning facilities, they are not positive about the Number of Facilities in Twente, which is considered a reason to leave the region. Furthermore, one of the Websites on jobs named Twente.com is a significant predictor for non-technical students ( $b = -.15$ ,  $p < .05$ ). Twente.com has a negative effect on leaving Twente, concluded can be that Non-technical students are interested in this website and see an advantage in becoming a member to get information on jobs in the region.

Interest in job updates on SNS is the last predictor for these group of students ( $b = .34$ ,  $p < .05$ ). This variable is focusses on the interest in updates via SNS of initiatives on jobs in the region, among others Bedrijvendagen and Twente.com. Interest in the use of SNS does not predict students to stay in Twente.

In both cases, the R square changed mostly in the third model, where H3 related to Social network was included in the hierarchical regression analysis. Respectively the prediction of the Intention to leave Twente increased by 22.2% and 12.8%.

As found in literature, differences in field of study on the intention to migrate can provide information on the gains and losses of talent in those different fields (Braswell and Gottesman, 2001). However, the study of the author itself did not result in a significant predictor of migration, another study did (Tornatzky et al., 2001, as cited in Braswell and Gottesman, 2001, p. 16). This study explains that differences in factors influencing the intention to migrate can be found between Technical and Non-Technical studies, even though no significant evidence is found that Technical students are more likely to stay in Twente.

Concluded, for Technical studies the career fair of the University is important in staying in Twente, next to the Social influence of the network. For the Non-technical studies the website Twente.com on jobs in the region, and the Employment prospect is important in staying in Twente, next to the Social influence of the network.

#### 4.2.3 – Hierarchical Regression - Origin

The origin of participants can be divided into either originating from Twente, another region in The Netherlands, or another country.

Significant differences between the Origin of students is found,  $F(384, 386) = 30.613$ ,  $p < .001$  ( $b = -.27$ ). The difference can be found in the indications of students' intention to migrate (paragraph 4.1). Students out of Twente are more Unlikely or Very Uncertain to Leave Twente after graduation, indicated by 37.7%. For the other two groups, students originating from other regions in The Netherlands, and another country concluded can be that only respectively 9.2% and 7.5% are Unlikely to Very Uncertain to leave. The hypothesis on Origin, indicating that students originating from Twente are less likely to leave the region, is statistically supported.

Therefore, an analysis is performed to answer the sub-question on whether different factors do play a role in the Intention to migrate of students originating from different regions.

Firstly, an analysis was performed on the participants originating from Twente ( $N=69$ ). A significant regression equation of the model including all IV,  $F(16, 52) = 2.409$ ,  $p < .01$  with  $R^2 = .426$ .

Proximity to Network remains the only significant predictor ( $b = -.26$ ,  $p < .05$ ) in the model containing all IV. However, when variables on the Social network (H3) is not taken into account, Attractiveness of region ( $b = -.40$ ,  $p < .05$ ) and Safety ( $b = -.25$ ,  $p < .05$ ) are significant predictors. Proximity to Network is more important compared to Attractiveness of region and Safety, indicating that students in Twente think the network is important, corresponding with literature indicating that being close to the network is an important factor in the migration decision (Kaplan, 2016; Fiore et al., 2015).

When the R square is examined further, the highest value for the model only containing the variables of H1 is measured for students originating from Twente,  $R^2 = .263$ . When included the other variables in the before mentioned analysis, H3 causes a high increase in the R square. However, in this case H3 does not result the highest change in the R square (.107), indicating that H1 has a high power as predictor. The residential area itself has a high power as predictor because the people feel connected with the region they grew up in, as explained in literature, people who originate from this region are more likely to stay in the region (Sprakel, 2008). This is supported by other studies explain that when a person lived for a longer period of time in a region, e.g. also accomplished other educational degrees in the region he is more likely to stay (Tornatzky, et al., 2001, as cited in Braswell and Gottesman, 2001).

For students originating from other regions in The Netherlands ( $N=119$ ) and other countries ( $N=199$ ) the significant predictors of the Intention to migrate are the Peers in region online/offline (respectively,  $b = .37$ ,  $p < .001$ , and  $b=.17$ ,  $p < .05$ ) and Social Influence (respectively,  $b = -.25$ ,  $p < .05$ , and  $b = -.18$ ,  $p < .05$ ). Which means that the students do not consider themselves to have a lot of friends in Twente, and this network will not provide information on jobs in Twente. Which leads to an increase the intention to leave the region after graduation. Factors on the residential area and employment are no significant predictor for participants out of other regions or another country, which is an interesting outcome. Because the participants indicated that their number one reason to leave Twente (table 4) is because they think there are not a lot of job opportunities in the region. The tenth reason mentioned is that they think there are more job opportunities in Germany, and the eleventh reason, not in the table, is that students think that the Randstad will offer more job opportunities. A

high number of students out of another country are German students, therefore the next analysis will be performed between Dutch and German students.

Concluded, different factors are important in staying in Twente based on the origin of participants. For students originating from Twente the Proximity to the Network in the region is the most important factor. For the participants out of other regions in The Netherlands and other countries the Social influence of the network is the most important factor in influencing the intention to stay in Twente.

#### 4.2.4 – Hierarchical Regression - Nationality

The nationality of participants can be divided into either Dutch, German or another nationality. Whereas the latter one exists of a group of people with 19 different nationalities. The analysis on participants with another nationality did not result in significant predictors of the dependent variable, Intention to migrate. This is also due to the low number of people who participated (N=29) with another nationality than Dutch or German.

Significant differences between the Nationality of students is found,  $F(384, 386) = 7.998, p < .01$  ( $b = -.14$ ). The difference can be found in the indications of students' intention to migrate (paragraph 4.1). Among Dutch students (N=188), 49.5% are Likely to Very Certain to Leave Twente after graduation. For the students with a German nationality (N=170) and students with other nationalities (N=29) this percentage is even higher, respectively 70.0% and 62.1%. The hypothesis on Nationality, indicating that Dutch students' intention to migrate is lower, is statistically supported.

Therefore, an analysis is performed to answer the sub-question on whether different factors do play a role in the Intention to migrate of students from different nationalities.

Firstly, for the Dutch students (N=188) a significant regression equation is found,  $F(16, 171) = 7.300, p < .001$ , with  $R^2 = .406$ . The factor related to Educational possibilities ( $b = -.14, p < .05$ ) is a significant predictor of the Intention to migrate, together with the two factors related to the Social network; Peers in region online/offline ( $b = .33, p < .001$ ) and Social Influence ( $b = -.26, p < .01$ ). Educational possibilities has a negative effect on leaving Twente, indicating that Dutch students consider further educational development and the high quality of education as a reason to stay in Twente. As explained in the analysis on the total sample, this is due to the fact that a lot of the participants are still in their first years of studying at the UT and study at a bachelor level which means they will start a master degree at the UT afterwards. Also the factor Social Influence is a predictor for Dutch students to stay in Twente, explaining that their social network considers Twente as a good residence option, and are in general positive about Twente. And the students are likely to stay based on the opinion of their network. If excluding the factors related to the Social network (H3), and only including the factors on Residential area, and Work and Location in the analysis, Attractiveness of region is the only significant predictor ( $b = -.21, p < .05$ ). Overall Dutch students are relatively positive on Twente as a region. The negative effect of this variable on the Intention to leave explains that Dutch students in general think Twente is has attractive residential areas and has a pleasant living environment.

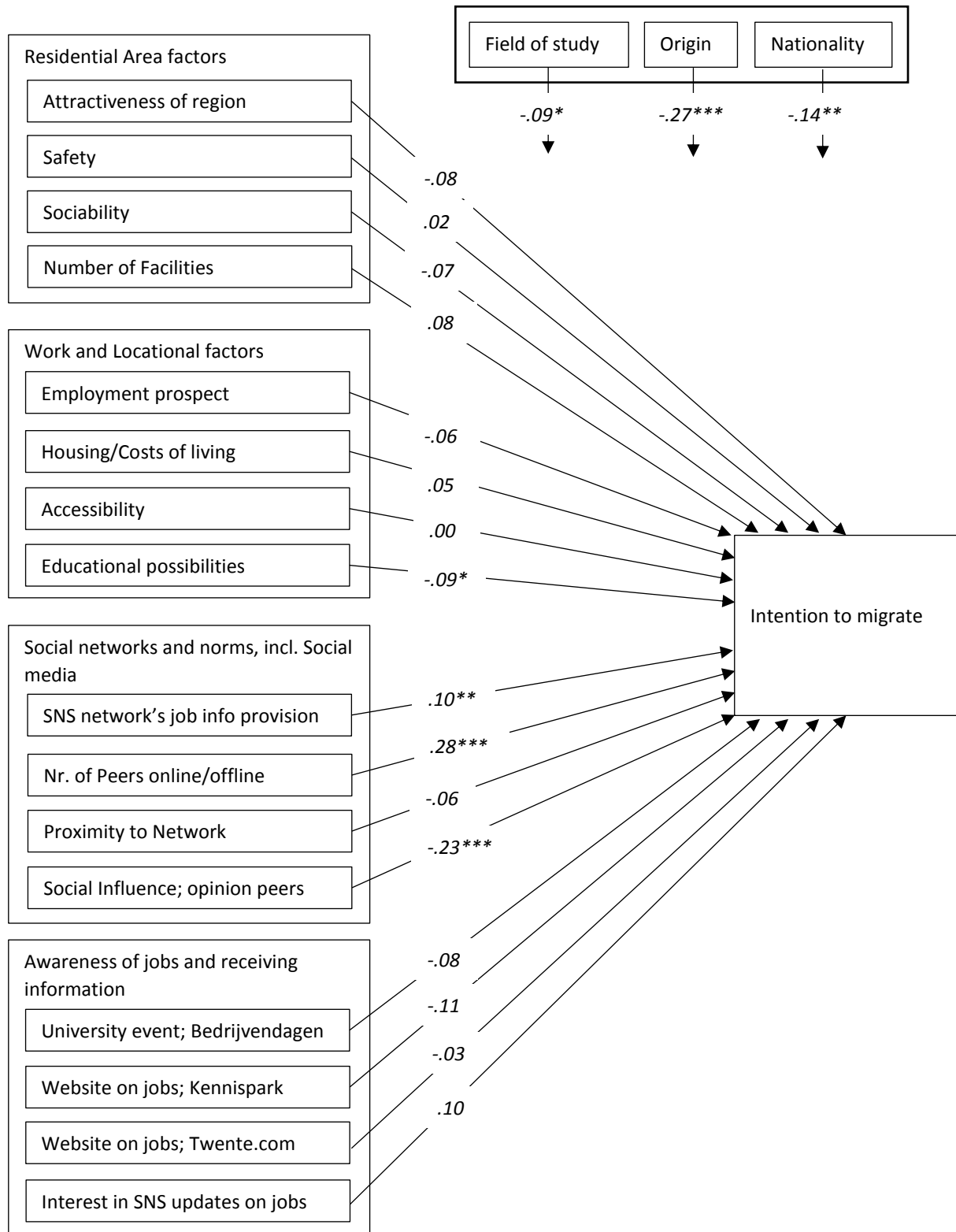
Secondly an analysis on the participants with the German nationality was performed (N=170). A significant regression equation is found,  $F(16, 153) = 2.228, p < 0.01$ , with  $R^2 = .189$ . The significant predictors of the Intention to migrate for German students are Employment prospect ( $b = -.20, p < .05$ ), and Peers in region online/offline ( $b = .19, p < .05$ ). The negative predictor on employment prospect indicates that German students think Twente offers enough job opportunities and jobs for

personal development in considering to stay in Twente. However, this is an outcome that does not correspond with the 'Reasons to Leave Twente' the participants gave (table 4). The first reason is that students do not think Twente offers a lot of career opportunities, and 'job opportunity in Germany' is ranked as reason number ten to leave Twente. The latter one, was given by Germany participants, mostly studying Psychology, because these students believe they have more chances on a good job in Germany in their field of study. Also 'Language' can be found in this list of reasons. A lot of German students also explained they want to go back to Germany based on their low level of and little knowledge of the Dutch language.

Concluded, different factors are important in staying in Twente based on the nationality of participants. For Dutch students the Educational possibilities in the region is an important factor, next to the Social Influence of the network. For German students the Employment prospect in the region is the most important factor influencing the intention to stay in Twente.

#### 4.2.5 – Research model; regression coefficients

The regression coefficients, including the significance level are presented in figure 2. To clarify the meaning of figure 2. The Intention to migrate was measure by asking participants to indicate whether they considered leaving Twente after graduation. Therefore, a negative coefficient on the intention to leave - as shown -, means that the factor has a positive effect on considering to stay in Twente.



(\*\*\* = significant at  $p < .001$ , \*\* = significant at  $p < .05$ , \* = significant at  $p < 0.1$ )

**Figure 2 – Schematic representation of the research model including regression coefficients**

#### 4.3 – Demographics information

Firstly, the information regarding demographics among others gender and age will be analysed. This gives an overview of the differences between the participants that can play a role in answering the research question by using among others Origin as a moderator.

The respondent's age ranged between 17 and 41, with a mean of 21.3 years (SD= 2.702). Mostly Dutch students (188) participated. However, the number of Germans follows closely (170), which makes further research on differences between these students and their reasons for leaving or staying in Twente after graduation has been performed (paragraph 4.2.4, p. 36). The 29 participants with another nationality do have 19 different nationalities (table 7).

A number of German students decide to live in Germany while studying at the UT, Gronau is the city where most of the students live (42 of 59 students) according to table 8. This shows that Twente is a good location in respect to Germany, which could mean that Twente can also be considered as a place to work.

**Table 7 – Demographics (N=387)**

	N	%
<i>Gender</i>		
Male	160	41.3
Female	227	58.7
<i>Age</i>		
18-20	188	48.6
21-23	131	33.9
24-26	55	14.2
27-29	9	2.3
29+	4	1.0
<i>Nationality</i>		
Dutch	188	48.6
German	170	43.9
Other	29	7.5

**Table 8 – Residential information (N=387)**

	N	%
<i>Place of origin</i>		
Twente	69	17.8
Other part NL	119	30.7
- Gelderland	51	13.2
Other country	199	51.4
- Germany	166	42.9
<i>Place of residence</i>		
Enschede	266	68.7
Other part Twente	48	12.4
Other city	73	18.9
- Gronau (Germany)	42	10.9
<i>Living situation</i>		
Living at home (with parents)	69	17.8
Not living at home	275	71.1
Other situation	43	11.1

#### 4.4 – Education information

Next to demographic information of the sample, the education level, and field of study will be used as moderator. Analysed is whether the factors that could influence the intention to migrate are different among master students. Differences may also occur between technical and non-technical students, since the region Twente is also more known for the technical aspect in companies present in the region.

Among participants, the distribution between study levels is not equal, a high number of people is following a Bachelor study (76%) and a clearly smaller part is following a Master study (21%). However, Field of study, divided into technical and non-technical students has a number of participants which lies closer together, and which has been used for the analysis of predictors of the Intention to migrate (table 9).

Interesting is see on which factors participants decided to study at the UT, the findings can show whether other factors than the study on its own do play a role in this decision. The top three reasons based on study level, show that for all three study levels the study/programme is the main reason on deciding to study at the UT (table 10). For German students, being not accepted in Germany is an important reason to choose for Enschede, also in combination with being close to home.

**Table 9 – Education information (N=387)**

	N	%
<i>Study level</i>		
Bachelor	293	75.7
Pre-master	12	3.1
Master	82	21.2
<i>Field of study</i>		
Technical	125	32.3
Non-technical	262	67.7
<i>Years studying at UT</i>		
0 - 2.5	72	78.0
3 - 4.5	64	16.5
5 - 6.5	18	4.7
>7	3	0.8

**Table 10 – Top 5 main reason to study at UT (N=387)**

	Study level						Field of study			
	Bachelor		Pre-master		Master		Technical study		Non-Technical	
	N	%	N	%	N	%	N	%	N	%
<i>Main reason to study at the UT</i>										
Study/Programme	73	18.9	7	1.8	44	11.4	58	15.0	66	17.1
Close to home	32	8.3	1	0.3	10	2.6	9	2.3	34	8.8
Not accepted in Germany	40	10.3							40	10.3
International aspect	36	9.3			3	0.8	3	0.8	36	9.3
Ambiance University	23	5.9			7	1.8	20	5.2	10	2.6

#### 4.5 – Initiatives on careers

The initiatives on career possibilities that were part of this research were the University's career fair Bedrijvendagen, and the websites of Kennispark and Twente.com on jobs in Twente. The familiarity of participants in this research will be analysed.

The familiarity of the participants with the three initiatives on careers in the region (table 11) shows that the career fair Bedrijvendagen is mostly known by students, 58.9%. This fair takes place at the University during one week, students can be mostly familiar with this initiative because they are exposed to promotion material for this event a few weeks before it takes place at the university. The participants were also asked if they visited the career fair before, and if they would consider to visit the career fair (again) in the future. Eventhough 58.9% of the participants is familiar with the fair, only 23.3% of them actually visited the fair. However, 76% of them considers to visit the fair in the future.



The next initiative, Kennispark is known by 38.8% of the participants in helping students in starting their career also with their own company. This is a relatively low part of the participants, even lower is the 16.8% of the participants that actually visited the website of Kennispark before. Again, a higher percentage of the students (66.7%) considers to visit the website in the future.

Lastly, Twente.com is only known by 9.6% of the participants, as this is the website which offers jobs in the region this is not a positive outcome. The same percentage of participants visited this website before and a positive outcome is that 61.2% of the participants will consider visiting the website in the future. Even though, most of the participants did not know the initiatives, after being introduced to these initiatives in the survey of this research, it shows that getting to know them by name makes the students also interested in what can be found on the websites or at the fair.

**Table 11 – Familiar with job initiatives (N=387)**

	Yes		No	
	N	%	N	%
Bedrijvendagen	228	58.9	159	41.1
Kennispark	150	38.8	237	61.2
Twente.com	37	9.6	350	90.4

The Social networking sites indicated by the participants to be used in job search are mostly LinkedIn and Facebook, respectively 183 and 143 of the participants (N=387) mentioned these SNS as sites they consider to be useful in the job search. Other sites, not specifically social networking sites, mentioned are among others Google, different German websites, and different websites of job boards.

## 5. Discussion and Conclusion

In the discussion the central question of this research will be answered. The important outcomes will explain what this means for the region. The recommendations for the Municipality Enschede based on this study are given. Finally, the limitations and an overall conclusion of this research.

### 5.1 – Discussion

The main aim of this research was to gain insight into the different factors (residential, and work and locational factors) and whether Social networks and social influence are important in the Intention to migrate. Another study focussing on Twente did also include social networks, among others, as a factor that stimulated migration of graduates (Timmer, 2008), however it did not include different aspects of the social network such as social influence. In research the brain drain in Twente is related to different factors, among others lifestyle, economic and community factors. However, limited research on social networks and social influence has been done, but explained as an important factor (Timmer, 2008; Kaplan et al., 2016). The influence of social networking sites (SNS) are not taken into account in researched studies focussing on Twente, but the use of SNS and the internet in general has increased since the latest studies in 2008. SNS are used more and more nowadays by young adults (Hurrell and Postatny, 2015; Sin and Kim, 2014) and also in job search (Nikolaou, 2014). Therefore it was interesting to find out whether aspects of the social network and the use of SNS facilitates migration decisions of graduates.

This study explains that the Social network, mostly the Social Influence but also the Peers in the region online and offline influences the intention to either stay or leave the region in which the students obtained their degree. When taken the factors on Social network out of the analysis, seen was that factors on Residential area, and Work and Locational factors are important, as explained by different studies (Bjerke and Mellander, 2016; Fiore et al., 2015; Timmer, 2008; Hansen et al., 2003). The research question can therefore be answered by stating that the social network and particularly the social influence of this network plays a role in the Intention to Migrate, more than factors on lifestyle, work or other factors that are related to the region or location. The interest in SNS for job updates of initiatives in the region was also tested, however it did not resulted in being an important factor in influencing the Intention to migrate. A possible reason can be the fact that students were not very familiar with the Initiatives on jobs (e.g. Twente.com) and the interest in updates via SNS were related to these initiatives. However, students explained that they will use mostly LinkedIn in their job search. Therefore, students are interested in using social networking sites for job search.

#### **Important outcomes**

The variable social influence is positively related to staying in Twente in the analysis on the total sample. The network of participants, family and friends, see Twente as good residence option and this makes that the students is likely to stay in the region. The network influences the behavior of the student in this case positively for the region Twente. By explaining the reason behind it being a positive outcome, the analysis on the Dutch students will be used. Only 36.7% of the Dutch students originates from Twente, which makes that group of the Dutch students' network being very familiar with the region if they also live in the region. Therefore, it is interesting to conclude that all Dutch students are likely to stay based on the opinion of their network on the region, and therefore the overall opinion on Twente is positive regarding living in the region.

However, a downside of this variable being an important factor is that we do not know how the network of the students thinks about other regions being a good residence option for the student, and whether this also influences the student to being positive if their intention to migrate was tested for this region. If the students think their network will have a positive opinion on another region, this could make them decide to stay in that region. The opinion of the social network of the participants matters, which is a difficult outcome for the region Twente, because it is not a factor that can easily be influenced to increase the number of students to stay in Twente.

The Number of Peers in the region and online on SNS is also an important factor for the total sample, however negatively related to staying in Twente after graduation. This means that students feel more like migrating towards their network while considering a place to live after graduation. The results of the regression analysis explained that the mean score on this variable indicated that the network of the participants is probably located more outside of Twente. This cannot directly lead to the conclusion that if it would be the other way around - that participants have a lot of peers in Twente - it would lead to students to stay in Twente. But this could be true. At least concluded can be that students think the number of peers, family and friends, in a region is important for them in the intention to migrate.

The other variable that is significant, but negatively related to staying in Twente for the total sample is the participants' Social Media Network's Information Provision on Jobs. Meaning that the network on SNS provides more information on jobs outside Twente, also because the network of the students is more located outside Twente. Again, this is a difficult outcome, because the location of the network cannot be influenced. However, it shows that students use SNS in their job search. Students indicated they will use among other job board websites, Facebook and LinkedIn. Being present on these SNS as a company or recruiter in the region Twente is important.

### **Relevant outcomes**

The important factors of the total sample are treated. However, an outcome that was not considered as important in influencing the intention to migrate, is interesting to discuss. Employment prospect is not found to be important in influencing the intention to stay in or leave the region Twente after graduation. This means that even though the students mentioned that 'Twente does not offer enough job opportunities', and 'Germany and the Randstad do offer more job opportunities' as main reasons to leave Twente. This outcome did not seem to be an important factor in the intention to migrate. On the one side this is positive for the region Twente, because Employment prospect did not resulted to be of importance to participants in leaving Twente, indicating that the employment prospect in another region is not seen as more attractive by the participants. Moreover, if the factors on the social network (the most important factors) were not taken into consideration, the Employment prospect was positively related to the intention to stay in Twente. Which means that when the network, family and friends, is not taken into account by students, the employment prospect is a factor that makes students stay in Twente (together with the attractiveness of the region and sociability).

According to the distinctions between field of study and nationality, concluded can be that Non-technical students think positively about the employment prospect, as well as the German students. Even though different groups of the total participants think positive about jobs in the region and about the number of interesting companies in Twente. It did not seem to be an important factor for the total sample, which means that it is not as important as the social network, which is a negative outcome for the region Twente.

### **Meaning of outcomes**

The outcomes of this study explain that students consider their network to think positive about Twente as a region to live in. This influences them in considering to stay in Twente after graduation. The outcome is positive for the Municipality of Enschede, as part of the region Twente, because this opinion about Twente must be maintained and strengthened in the future by promoting Twente as a good residence option and a good environment to start a career. The result should be that more students stay in the region and by this the brain drain within the region decreases.

The region itself, the attractiveness of the region, the sociability of the community, and the employment prospect become important factors in staying in Twente, when the social network is not taken into consideration by the participants. These factors should be used by the municipality to influence students to stay in Twente, because it shows that these factors play a role in the decision to settle somewhere. However, also or as important are the factors that are not shown to be an important factor in the intention to migrate of students in this study. For example, the number of facilities in the region and the costs of living/housing are not considered as important in staying in the region, neither in leaving Twente. It is also not demonstrated that students find that these factors are found to be better elsewhere, in another region or country. Therefore, there is still room for improvement for the region Twente to also promote the region through these factors.

By promoting the region not only the opinion of the network of students, which already seems to be positive, will be strengthened. But also the opinion of the students themselves towards Twente could be improved. Therefore, not only should the aspects related to Twente being a good residential region and offering enough facilities be promoted, but mainly the employment prospect in the region. Because the employment prospect should be a factor that is as important as the opinion of the network in the intention to stay in Twente. The recommendations will clarify how the career possibilities within the region can be further brought to the attention of students, and how students could be informed about chances in Twente. In addition to the recommendations being addressed to the Municipality, the University of Twente can also follow these recommendations. For example, job opportunities could be discussed more during the programs offered at the UT. As described in the following paragraph, there are opportunities for an event like the career fair *Bedrijvendagen* in which the UT can play a role.

### **5.2 – Recommendations**

The recommendations are based on the results of this study, and the outcomes as explained in this chapter.

Overall the variable on Employment prospect did not seem to be an important factor, neither in leaving Twente, nor in staying in Twente. A reason can be that a lot of students are not yet thinking about their career or the job search they will start after graduation. This can be caused by the fact that the sample included a lot of students being in the first years of their study, and a lot of bachelor students who want to start another study once obtained their bachelor degree. However, it still indicates that students are not aware of the chances in the region. Even for students who originate from Twente, and therefore are most familiar with the region, employment is not a predictor in staying or leaving. One of the reasons of leaving Twente given by students is related to the job opportunities the western part of the country offers them, indicating that students think less opportunities can be found in

Twente. Informing students on their chances will be the first step in improvement of the perspective of jobs in Twente. Two initiatives that will be discussed now could be starting points for improvement. Bedrijvendagen is an important factor in staying for Technical students, however it was not considered as an important factor for all students involved in this research. 41.1% of 387 participants is not familiar with the career fair, 76.6% did not visit the career fair before, and 24% does not consider to visit the fair (again). These numbers should and could be improved, mostly because the companies present at the fair are also based in Twente. Approximately 20% of the companies in 2017 were based in the region Twente. Technical students indicated they think it is interesting to get in contact with companies located in Twente, and that the career fair helps to get in contact with companies. Therefore, it could be recommended to increase the number of companies out of the region to be represented at events, such as the Bedrijvendagen. The negative view of Technical students on the Employment prospect makes them leave Twente. The career fair can help change students' perspective on employment in the region if they are introduced to more local companies.

The importance of Bedrijvendagen for job search and the fact that this makes students consider to stay in Twente, stresses the importance of the career fair for the region. However, the fact that Bedrijvendagen did not show to be an important factor for Non-technical students, and 56.1% of is not familiar with the event explains that the focus should also be on Non-technical students.

*'Looking at the number of opportunities to meet with in-state employers in comparison to those coming from out-of-state may prove to be an important factor in predicting migration of graduates. Today's students graduate into a global marketplace and decisions that they make to migrate or remain in-state may be largely based on which global players offer them opportunity first. In short, if a state wants to retain more of its graduates, it should put more focus on recruiting and developing economic opportunities for this skilled workforce'* (Braswell and Gottesman, 2001, p. 17)

The same can be said about Twente.com as a website on jobs in the region. This is only an important factor in staying in the region for Non-Technical students. The initiative on jobs was not considered a predictor in the analysis on the total sample of this research. Only 9.6% (N=387) indicated they were familiar with Twente.com. This is a very low outcome, and there is plenty of room for improvement. Students will probably search on more common websites for jobs when they graduate, such as LinkedIn and different job boards online. However, they come to the university almost every day and live in the region Twente for a few years while studying there. Improving the familiarity among students by promoting the website as one of the initiatives on careers more often is one step in the direction of the website to pop-up in students mind when starting their job search, or orientating on jobs during their study.

Besides the improvement on career chances in the region, students can also be stimulated to start their professional career in Twente when they get to know more companies and job opportunities in the region by doing a traineeship. The Twente index of 2016 explains that jobs in hightech systems and materials (HTSM) is one of the strong and unique aspects of Twente, and that Twente has a higher increase of jobs in this field compared to The Netherlands as a whole. There is a high focus on this field on Twente.com but jobs within less technical fields should also be promoted to attract talent of the UT that will not graduate with a technical degree. Traineeships could attract students with different study backgrounds. The fact that a traineeship helps recently graduates to focusses on getting to know the different aspects of a company and to choose were you want get a further career in is a plus in this

case. It also helps to get to know the career prospect within the company, and therefore the region, while already working and orientating within the company.

German students do come to Twente to study here, however reasons to leave Twente are the language barrier and the fact that these student think they will have better job chances in Germany. To keep these students, more emphasis should be placed on the fact that speaking another language in a region especially because of the location close to the German border, could be an advantage for companies in having German speaking personnel. The market becomes more international nowadays and the career fair *Bedrijvendagen* en the website *Twente.com* should also take the fact that a lot of international students (among them Germans) decide to study in Twente. When integrating more international job positions, located in Twente this group of students could become interested in staying in Twente in the future.

Using Social networking sites for job updates via the career fair and *Twente.com* did not directly indicated to be useful out of this research. Probably because students are not that familiar with these initiatives. But the fact that students use different social networking sites in their job search, as indicated by themselves, shows that SNS should be used. Starting with distributing more information on jobs in the region via the social media of *Bedrijvendagen*, and *Twente.com* could become useful if the familiarity with these initiatives is improved.

### 5.3 – Limitations

The limitations of this research will be discussed, including an explanation why these limitations could not have been executed as expected before, and what could be done to improve a future research on the topic.

Initially the purpose of this study was to only include master students in the sample. However, it was difficult for the researcher to contact a high number of students of the University, also because the student associations that were contacted could not help with the distribution of the survey among their members. The researcher therefore, decided not to make an exception between bachelors, pre-master or master students to be requested to participate. Therefore, any student who was personally contacted at the University of Twente was sent an email request to participate.

The researcher also decided to use a system of the UT to collect participants, the only disadvantage was that a lot of bachelor students especially psychology students participated. A reason why Employment prospect as a variable did not resulted in being an important factor in this study could be due to the educational background of participants. 75% is a bachelor student and 78% is currently studying less than 2.5 years at the UT, a high number of the participants is in the first years of their education which could be a reason they are not that involved in job search or job opportunities in the region. A reason given on staying in Twente is because of further educational development, probably due to the high percentage of bachelor students planning on starting a master study after getting their degree. A note for future research could therefore be that the sample should include only students who graduate within one year at the time of participating in the study.

The two variables *Peers in the region* and *Peers in region on SNS* were formed as two different variables out of the theoretical framework. The measurement items of both variables were included in the survey. However, in the factor analysis it was not possible to further use the distinction between the

two as part of the analysis. Therefore, it was not possible to see whether a participants' Peers on SNS had different effects than the Peers in a region (offline, face-to-face peers). A possible explanation can be that participants consider the same people when answering questions on the different items. Meaning that participants see the same people in the online environment and the face-to-face situations as their peers. However, explained in literature a distinction between a network online and offline is made, namely that excessive online social activities can hinder the expansion of physical, face-to-face social circles (Kaplan et al., 2016). Therefore, future research could focus on analysing whether it is an important factor in the intention to migrate. Because assumed out of this research can be that the Peers in a region online and offline, as a combined variable, is an important factor.

Also explained in the results is that SNS are used in the job search by students, mostly Facebook and LinkedIn. Future research could focus more on how the SNS can be used, and how the initiatives on jobs in the region (e.g. Bedrijvendagen and Twente.com) can further use SNS in providing information on career possibilities in Twente.

#### 5.4 – Overall Conclusion

A final conclusion on the results of this study explain that the social network is most important for students in their intention to migrate, as supported in literature to be of importance. The opinion of the network matters most, and in the case of Twente, the network of the students do think Twente is a good residence option. However, the lack of number of peers in Twente makes that the students will leave the region. Also the student's network on SNS provides more information on jobs located outside the region Twente.

An interesting outcome was that the employment prospect did not seem to be an important factor in leaving Twente. Which means that, even though expected, the Randstad does not seem to be more attractive in job opportunities. Moreover, when the social network is not taken into consideration the students do think positively about the employment prospect in Twente and results to be an important factor towards staying in Twente. Most importantly, despite the positive view on the employment prospect as mentioned, there is room for the municipality to improve the view on the employment prospect in the region. Ideally, the employment prospect should also be an important factor when the social network is also taken into consideration. Also the region can be promoted to positively influence the students' opinion about Twente, by addressing to the residential area, not only to the factors that are considered as important such as attractiveness of the region and sociability, but also to the facilities offered. Also the costs of living and housing in Twente can be used for this purpose, next to the employment prospect.

The recommendations show that the initiatives as Bedrijvendagen and Twente.com provide opportunities and could lead to improvement on the career chances in the region. Furthermore, SNS can provide opportunities in informing students, since students indicated they will use among others Facebook and Twitter in job search.

## 6. References

- Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50, 179-211. DOI:10.1016/0749-5978(91)90020-T
- Asuero, A.G., Sayago, A. & González, A.G. (2007). The Correlation Coefficient: An Overview. *Critical Reviews in Analytical Chemistry*, 36(1), 41-59, DOI:10.1080/10408340500526766
- Beech, S.E. (2014). Why place matters: imaginative geography and international student mobility. *Area*, 46(2), 170–177. DOI:10.1111/area.12096
- Bijker, R.A., Haartsen, T. & Strijker, D. (2012). Migration to less-popular rural areas in the Netherlands: Exploring the Motivations. *Journal of Rural Studies*, 28, 490-498. DOI:10.1016/j.jrurstud.2012.07.003
- Bjerke, L. & Mellander, C. (2016). Moving home again? Never! The locational choices of graduates in Sweden. *The Annals of Regional Science*. 1-23. DOI:10.1007/s00168-016-0777-2
- Bedrijvendagen Twente. (2017). Wy Participate? For Students. Retrieved from: <https://www.bedrijvendagentwente.nl/en/forstudents>
- Braswell, C.M. & Gottesma, R.W. (2001). Analysis of Factors Influencing Employment Migration Of Recent Degree Recipients. *41th Annual Forum of the Association for Institutional Research*, June 3-6, 2001. Retrieved from <https://oira.auburn.edu/about/publications/migrationpaper.pdf>
- Caers, R. & Castelyns, V. (2011). LinkedIn and Facebook in Belgium: The Influences and Biases of Social Network Sites in Recruitment and Selection Procedures. *Social Science Computer Review*, 29(4), 437-448. DOI:10.1177/0894439310386567
- Constantinides, E. (2014). Foundations of Social Media Marketing. *Procedia – Social and Behavioral Sciences*, 148, 40-57. DOI:10.1016/j.sbspro.2014.07.016
- De Jong, G.F. (2000). Expectations, gender, and norms in migration decision-making. *Population Studies*, 54(3), 307-319. Retrieved from <http://ezproxy2.utwente.nl:2081/stable/2584787>
- Dennis, A.R. & Kinney, S.T. (1998). Media Richness Theory in the New Media: The Effects of Cues, Feedback, and Task Equivocality. *Information Systems Research*, 9(3), 256-274. DOI:10.1287/isre.9.3.256
- Faggian, A. & McCann, P. (2008) Universities, Agglomerations and Graduate Human Capital Mobility. *Tijdschrift voor Economische en Sociale Geografie*, 100(2), 210-223. DOI: 10.1111/j.1467-9663.2009.00530.x
- Fiore, A.M., Niehm, L.S., Hurst, J.L., Son, J., Sadachar, A., Russell, D.W., Swenson, D. & Seeger, C.



- (2015). Will They Stay or Will They Go? Community Features Important in Migration Decisions of Recent University Graduates. *Economic Development Quarterly*, 29(1), 23-37. DOI:10.1177/0891242414559070
- Ghasemi, A. & Zahediasl, S. (2012). Normality Tests for Statistical Analysis: A Guide for Non-Statisticians. *Int J Endocrinol Metab.*, 10(2), 486-489. DOI: 10.5812/ijem.3505
- Haapanen, M. & Tervo, H. (2012) Migration of the Highly Educated: Evidence from Residence Spells of University Graduates. *Journal of Regional Science*, 52(4), 587-605. DOI: 10.1111/j.1467-9787.2011.00745.x
- Hansen, S.B., Ban, C. & Huggins, L. (2003). Explaining the “Brain Drain” From Older Industrial Cities: The Pittsburgh Region. *Economic Development Quarterly*, 17(2), 132-147. DOI:10.1177/0891242403252377
- Hurrell, D. & Postatny, J. (2015). Social Media for Scientific Institutions: How to Attract Young Academics by Using Social Media as a Marketing Tool. DOI:10.1007/978-3-658-08822-4 [https://books.google.nl/books?id=QF10BgAAQBAJ&printsec=frontcover&source=gbs\\_ViewAPI&redir\\_esc=y#v=onepage&q&f=false](https://books.google.nl/books?id=QF10BgAAQBAJ&printsec=frontcover&source=gbs_ViewAPI&redir_esc=y#v=onepage&q&f=false)
- Huizingh, E. (2014). *Inleiding SPSS 22, voor IBM SPSS Statistics*. Rotterdam: Academic Service
- Hwang, H. & Kim, K-O. (2015). Social media as a tool for social movements: the effect of social media use and social capital on intention to participate in social movements. *International Journal of Consumer Studies*, 39, 478-488. DOI:10.1111/ijcs.12221
- Joos, J.G. (2008). Social Media: New Frontiers in Hiring and Recruiting. *Employment Relations Today*, 51-59. DOI:10.1002/ert.20188
- Kaplan, S., Grünwald, L. & Hirte, G. (2016). The effect of social networks and norms on the inter-regional migration intentions of knowledge-workers: The case of Saxony, Germany. *Cities*, 55, 61-69. DOI:10.1016/j.cities.2016.03.017
- Kennispark Twente Foundation. (2013). Innovate & Accelerate. Retrieved from <http://www.kennispark.nl/wp-content/uploads/2013/03/brochure-kennispark-engels-1.pdf>
- King, R., Lulle, A., Conti, F. & Mueller, D. (2016). Eurocity London: a qualitative comparison of graduate migration from Germany, Italy and Latvia. *Comparative Migration Studies*, 4(3), 1-22. DOI:10.1186/s40878-016-0023-1
- Manning, M. (2009). The effect of subjective norms on behavior in the theory of planned behavior: A meta-analysis. *British Journal of Social Psychology*, 48, 649-705. DOI:10.1348/01446608X393136
- McDonald, R.I. & Crandall, C.S. (2015) Social norms and social Influence. *Current Opinion in Behavioral Sciences*, 3, 147-151. DOI:10.1016/j.cobeha.2015.04.006.
- Miguélez, E. & Moreno, R. (2014). What attracts knowledge workers? The role of space and social networks. *Journal of Regional Science*, 54(1), 33-60. DOI: 10.1111/jors.12069

- Nikolaou, I. (2014). Social Networking Web Sites in Job Search and Employee Recruitment. *International Journal of Selection and Assessment*, 22(2), 179-189. DOI:10.1111/ijsa.12067
- O'Halloran, T.M., Fahr, A.V. & Keller, J.R. (2002). Career Counselling and Information Highway: Heeding the Road Signs. *The Career Development Quarterly*, 50, 371-376. DOI:10.1002/j.2161-0045.2002.tb00585.x
- Onnela, J., Reed-Tsochas, R. & Standley, H.E. (2010) Spontaneous emergence of social influence in online systems. *Proceedings of the National Academy of Sciences of the United States of America*, 107(43), 18375-18380. DOI:10.1073/pnas.0914572107
- Rainer, H. & Siedler, T. (2009). The role of social networks in determining migration and labour market outcomes. *Economics of Transition*, 17(4), 739-767. DOI: 10.1111/j.1468-0351.2009.00365.x
- Rickman, D.S. & Rickman, S.D. (2011). Population Growth in High-Amenity Nonmetropolitan Areas: What's the Prognosis? *Journal of Regional Science*, 51(5), 863-879. DOI:10.1111/j.1467-9787.2011.00734.x
- Rodríguez-Pose, A. & Ketterer, T.D. (2012). Do Local Amenities Affect the Appeal of Regions in Europe for Migrants? *Journal of Regional Science*, 52(4), 535-561. DOI:10.1111/j.1467-9787.2012.00779.x
- Simmons, A.B. (1986). Recent studies on place-utility and intention to migrate: An international comparison. *Population and Environment*, 8(1), 120-140. DOI: 10.1007/BF01263020
- Sin, S.-C.J. & Kim, K.-S. (2014). Impacts of Social Media Usage on the Outcomes of Students' Everyday Life Information Seeking. *Proceedings of the Association for Information Science and Technology*, 51(1), 1-4. DOI: 10.1002/meet.2014.14505101119
- Sprakel, I.J. (2008). Binding Belangrijk? Een onderzoek naar de binding tussen studenten en Twente en de invloed van binding op migratie. Retrieved from <http://essay.utwente.nl/59527/>
- Stichting Bedrijvendagen. (2016). *Bedrijvendagen 2016 Universiteit Twente*. Stichting Bedrijvendagen Universiteit Twente: 2016.
- Timmer, J.F.M. (2008). De wijzen naar het oosten. Een onderzoek naar de migratiefactoren voor hoogopgeleiden. Retrieved from <http://essay.utwente.nl/58407/>
- Twente.com. Twente De ondernemende hightech region. Maak carrière in Twente. Retrieved from <http://www.twente.com/werken>
- Twente.com. (2016). Twentse werkgelegenheid stijgt. Retrieved from <https://www.twente.com/twenty-twente/werkgelegenheid-twente-stijgt/>
- University of Twente. (2016). Organization of Our Education. Retrieved from [www.utwente.nl/en/education/about-our-education/organization-of-education/#facts-and-figures](http://www.utwente.nl/en/education/about-our-education/organization-of-education/#facts-and-figures)

- Venhorst, V.A., Koster, S. & Van Dijk, J. (2013). Geslaagd in de stad. *URSI Research Report 344, FRW, Rijksuniversiteit Groningen*. Retrieved from [http://www.rug.nl/research/portal/files/10650671/Venhorst\\_etal\\_2013\\_GeslaagdindeStad1.pdf](http://www.rug.nl/research/portal/files/10650671/Venhorst_etal_2013_GeslaagdindeStad1.pdf)
- Venhorst, V.A., Van Dijk, J. & Van Wissen, L. (2010). Do the Best Graduates Leave the Peripheral Areas of The Netherlands? *Tijdschrift voor Economische en Sociale Geografie*, 101(5), 521-557. DOI:10.1111/j.1467-9663.2010.00629.x
- Young, A.G. & Pearce, S. (2013). A Beginner's Guide to Factor Analysis: Focusing on Exploratory Factor Analysis. *Tutorials in Quantitative Methods for Psychology*, 9(2), 79-94. DOI:10.20982/tqmp.09.2.p079

## 7. Appendices

### 7.1 – Appendix 1: Measurement items from literature

The researched Residential area factors out of the theoretical framework resulted in the items presented. A likert-scale 1 (strongly agree) – 5 (strongly disagree) will be used to measure the items.

**Table 12 – Measurement Residential area factors**

<b>Quality of life (H1a)</b>	-	a dynamic living atmosphere (Timmer, 2008; Hansen et al., 2003)
	-	a good atmosphere (Sprakel, 2008)
	-	a pleasant living environment (Sprakel, 2008)
	-	a high quality of the environment (Bijker et al., 2012)
	-	safety, at home and in the streets (Bijker et al., 2012; Sprakel, 2008; Timmer, 2008)
	-	a low crime rate (Timmer, 2008)
	-	enough space in residential areas (Bijker et al., 2012)
	-	enough houses available (Sprakel, 2008)
	-	a green environment (nature) (Timmer, 2008)
	-	attractive residential areas (Timmer, 2008)
	-	more urban than rural areas (Timmer, 2008)
	-	a job for a partner/spouse (Hansen et al., 2003)
	-	a low average age of community members (Fiore et al., 2015, Hansen et al., 2003)
<b>Sociability (H1b)</b>	-	an open community (Timmer, 2008)
	-	a friendly community (Bijker et al., 2012)
	-	a warm-hearted community (Bijker et al., 2012)
	-	solidarity among community members (Timmer, 2008)
	-	a feeling of being easily accepted by the community (Timmer, 2008)
	-	a smooth integration in the community (Bijker et al., 2012)
<b>Number of Facilities (H1c)</b>	-	good leisure facilities (Sprakel, 2008)
	-	enough shops for basic goods (Fiore et al., 2015)
	-	a variety of shops (Timmer, 2008)
	-	enough cafes and nightclubs (Timmer, 2008; Hansen et al., 2003)
	-	enough recreational opportunities (Timmer, 2008)
	-	good health services (Fiore et al., 2016)
	-	a rich historical background (Timmer, 2008)
	-	enough theatres to visit (Timmer, 2008)
	-	enough museums to visit (Timmer, 2008)
	-	enough events, organized regularly (Timmer, 2008; Hansen et al., 2003)

The researched Work/Economic factors out of the theoretical framework resulted in the items presented.

**Table 13 – Measurement Work/Economic factors**

<b>Employment (H2a)</b>	-	enough job opportunities (Sprakel, 2008)
	-	enough jobs for my personal development (Timmer, 2008)
	-	companies offering a sufficient starter salary (Timmer, 2008; Hansen et al., 2003)
	-	a range of interesting employers (Timmer, 2008)
	-	a high number of employers (Bjerke and Mellander, 2016)
	-	a possibility to live close(r) to work (Bijker et al., 2012)
	-	companies offering challenging jobs (Hansen et al., 2003; Timmer, 2008)

	<ul style="list-style-type: none"> <li>- companies offering employer benefits (Hansen et al., 2003)</li> <li>- companies offering enough salary (Hansen et al., 2003; Bjerke and Mellander, 2016)</li> </ul>
<b>Economic prospect (H2b)</b>	<ul style="list-style-type: none"> <li>- reasonable housing costs (Timmer, 2008)</li> <li>- low living costs (Fiore et al., 2015; Timmer, 2008)</li> <li>- a prosperous market (Timmer, 2008)</li> <li>- a strong local economy (Fiore et al., 2015, Timmer, 2008)</li> </ul>
<b>Accessibility (H2c)</b>	<ul style="list-style-type: none"> <li>- a short home-to-work travel (Fiore et al., 2015; Timmer, 2008; Hansen et al., 2003)</li> <li>- a good infrastructure (Timmer, 2008)</li> <li>- a good connection to other regions in NL (Sprakel, 2008)</li> <li>- a central location with respect to other regions in NL (Timmer, 2008)</li> <li>- a central location with respect to Germany</li> <li>- in general little traffic (Timmer, 2008)</li> </ul>
<b>Educational possibilities (H2d)</b>	<ul style="list-style-type: none"> <li>- a possibility to get an (further) education (Bijker et al., 2012)</li> <li>- good primary and secondary schools (Timmer, 2008)</li> <li>- proximity to higher education (Fiore et al., 2016)</li> <li>- an undergraduate institution and university (Timmer, 2008; Fiore et al., 2015)</li> <li>- high quality of education (Timmer, 2008; Fiore et al., 2015)</li> <li>- a high education level of residents (Fiore et al., 2015; Bjerke and Mellander, 2016)</li> </ul>

Social networks and social influence, and the use of social media websites can be tested by the following variables and items.

**Table 14 – Measurement Social network, social influence and SNS use**

<b>SNS network's job info provision (H3a)</b>	<ul style="list-style-type: none"> <li>- My network provides information on job opportunities in Twente (Raider and Siedler, 2009)</li> <li>- My location decision will be based on my network (Miguélez and Moreno, 2014)</li> <li>- Using social media, I can get specialized information on job possibilities (Hwang and Kim, 2015)</li> <li>- Interactions with my social media network provide me information on job possibilities (Hwang and Kim, 2015)</li> <li>- Several persons on social media can help me to find a job</li> <li>- Social media makes it easy to find a job through my network</li> </ul>
<b>Number of Peers in region (H3b)</b>	<ul style="list-style-type: none"> <li>- Many of my friends live in Twente (Timmer, 2008)</li> <li>- A lot of my family members live in Twente (Kaplan et al., 2016; Timmer, 2008)</li> <li>- It is important to have a network in the region I will start to work</li> <li>- Being close to family and friends is important when considering a place to work (Kaplan et al., 2016)</li> <li>- When my network recommends a job opening in another region, I would consider moving</li> </ul>
<b>Number of Peers on SNS (H3c)</b>	<ul style="list-style-type: none"> <li>- I trust someone on social media in giving advice on job decisions (Hwang and Kim, 2015)</li> <li>- Many social media friends in a region will make it easier to move there</li> <li>- I feel attracted to a region by having a lot of social media friends there</li> <li>- Many of my social media friends live in the Twente</li> <li>- Many of my social media friends live in other regions in NL</li> <li>- Many of my social media friends live abroad</li> </ul>
<b>Social Influence (H3d)</b>	<ul style="list-style-type: none"> <li>- My family/friends see Twente as a good residence option (Kaplan et al., 2016)</li> <li>- My family's/friends opinion on working and living in Twente is important to me (De Jong, 2000)</li> <li>- My family/friends think another region is better than Twente (Kaplan et al., 2016)</li> </ul>

- My family/friends think west NL is better than east (Kaplan et al., 2016)
- My family/friends want me to stay in Twente (Timmer, 2008)
- My family/friends generally think positive about Twente (Timmer, 2008)

The items explain how the different university activities, websites on jobs in Twente and SNS use of these activities and website are known by, by the students of the University of Twente. Also to measure the interest in the information providing activities.

**Table 15 – Measurement Awareness of jobs and receiving information**

<b>University activities on jobs in Twente (H4a)</b>	<p><i>MC-questions (Yes/No):</i></p> <ul style="list-style-type: none"> <li>- I am familiar with career fair Bedrijvendagen Twente</li> <li>- I visited the career fair before</li> <li>- I would consider visiting the career fair (again)</li> </ul> <p><i>1 (strongly agree) – 5 (strongly disagree):</i></p> <ul style="list-style-type: none"> <li>- For job search the career fair Bedrijvendagen Twente is important</li> <li>- Visiting the career fair Bedrijvendagen Twente helps to get in contact with companies</li> <li>- It's interesting to get in contact with companies located in Twente during the career fair</li> <li>- It's interesting to visit the career fair mainly for the companies located in Twente</li> </ul>
<b>Websites on jobs in Twente (H4b/c)</b>	<p><i>MC-questions (Yes/No):</i></p> <ul style="list-style-type: none"> <li>- I am familiar with Kennispark Twente, offering jobs</li> <li>- I visited the website of Kennispark before</li> <li>- I would consider to visit the website of Kennispark Twente, for jobs (again)</li> </ul> <p><i>1 (strongly agree) – 5 (strongly disagree):</i></p> <ul style="list-style-type: none"> <li>- For job search Kennispark Twente is important</li> <li>- Visiting Kennispark helps to get in contact with companies in Twente</li> <li>- It's interesting to get in contact with companies in Twente with the help of Kennispark</li> </ul> <p><i>MC-questions (Yes/No):</i></p> <ul style="list-style-type: none"> <li>- I am familiar with Twente.com, offering jobs</li> <li>- I visited Twente.com before</li> <li>- I would consider to visit Twente.com for jobs in Twente (again)</li> </ul> <p><i>1 (strongly agree) – 5 (strongly disagree):</i></p> <ul style="list-style-type: none"> <li>- For job search the website Twente.com is important</li> <li>- Visiting Twente.com helps to get in contact with companies in Twente</li> <li>- Becoming a member helps to get in contact with companies in Twente</li> <li>- It's interesting to become a member at Twente.com, for jobs in Twente</li> </ul>
<b>SNS about jobs in Twente (H4d)</b>	<ul style="list-style-type: none"> <li>- It's interesting to follow the career fair Bedrijvendagen Twente on Social media</li> <li>- It's interesting to be updated via Social media on news about the career fair</li> <li>- It's interesting to follow Kennispark Twente on Social media</li> <li>- It's interesting to be updated via the Social media of Kennispark Twente on career news</li> <li>- It's interesting to follow Twente.com on Social media</li> <li>- It's interesting to be updated via the Social media of Twente.com on career news</li> </ul>

## 7.2 – Appendix 2: Online Survey in Qualtrics

### Survey – Distributed online with Qualtrics.com

Dear participant,

You are invited to participate in this online survey to gather your thoughts on Twente as a region to live in and start working after your graduation. This research is in collaboration with the Municipality of Enschede, Gemeente Enschede, to make talent of the UT aware of chances in Twente. Your input will be used by the Municipality to improve services to graduates, e.g., to inform you about job openings and all Twente has to offer after graduating University. Not only you, but also students who will graduate in the coming years can be helped by the information you provide today.

All answers will be treated confidentially and will not be traceable to you. Completing this survey takes about 10 minutes. You may choose to quit at any time if you don't feel confident in continuing.

In case of any questions regarding this survey feel free to contact the researcher, Charlot Oldemaat, on the following emailaddress: [c.a.m.oldemaat@student.utwente.nl](mailto:c.a.m.oldemaat@student.utwente.nl)

Your opinion is of great value for this research, so let's start!

Thank you very much in advance!

- What is your gender ☐ Female ☐ Male
- How old are you .....
- What is your nationality ☐ Dutch  
☐ German  
☐ Other, namely: .....
- What is your place of origin? ☐ Enschede  
☐ Other part of Twente, namely: .....  
☐ Other city, namely: .....
- Where do you live? ☐ Twente, namely (city): .....  
☐ Other part of NL, namely (region and city): .....  
☐ Other country, namely (country and city): .....
- What best describes your living situation? ☐ Living at home (with parents)  
☐ Not living at home  
☐ Other situation, namely: .....
- What is your current study level? ☐ Bachelor  
☐ Pre-Master  
☐ Master
- What is your current study at the University of Twente (UT)?  
.....
- How many years do you study at the UT at the moment?  
.....
- What is your main reason to study at the UT?  
.....
- What are your most important reasons to stay in Twente after graduation? (min. 1 reason)
  1. ....
  2. ....



3. ....

- What are your most important reasons to leave Twente after graduation? (min. 1 reason)

1. ....

2. ....

3. ....

- How likely would you consider yourself to leave Twente in 3 months after graduation?

Very certain      Likely              Maybe              Unlikely              Very uncertain

1 ----- 2 ----- 3 ----- 4 ----- 5

- Where do you want to start your job-search after graduation?

☐ In Twente

☐ In another region in NL, namely: .....

☐ In another country than NL, namely: .....

- Motivate why you are interested in the previously chosen city/region:

.....

.....

Please explain to which extent you agree with the following statements on a scale indicating ‘strongly disagree’ – ‘strongly agree’.

• Twente has/offers:	<i>Strongly Agree</i>	<i>Strongly Disagree</i>
- low living costs	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- companies offering employer benefits	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a central location with respect to Germany	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- in general little traffic	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a smooth integration in the community	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a green environment (nature)	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- solidarity among community members	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- an open community	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a strong local economy	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- companies offering a sufficient starter salary	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a range of interesting employers	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- an undergraduate institution and university	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a prosperous market	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a rich historical background	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- enough cafes and nightclubs	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- safety, at home and in the streets	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a variety of shops	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- high quality of education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a good connection to other regions in NL	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- proximity to higher education	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a low crime rate	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a warm-hearted community	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- enough shops for basic goods	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- enough events, organized regularly	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- reasonable housing costs	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- enough museums to visit	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- enough job opportunities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a good infrastructure	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a high number of employers	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a dynamic living atmosphere	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- good leisure facilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a friendly community	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
- a pleasant living environment	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	

- Twente has/offers:

	<i>Strongly Disagree</i>				<i>Strongly Agree</i>
- good primary and secondary schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a low average age of community members	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- enough houses available	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a possibility to live close(r) to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a central location with respect to other regions in NL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a more urban than rural area	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- enough jobs for my personal development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- companies offering enough salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- good health services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a high quality of the environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- enough recreational opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- companies offering challenging jobs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a feeling of being easily accepted by the community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- enough theatres to visit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a good atmosphere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a high education level of residents	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- enough space in residential areas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a job for a partner/spouse	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- a short home-to-work travel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do you agree:

- I trust someone on social media in giving advice on job decisions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Social media makes it easy to find a job through my network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- My family/friends think another region is better than Twente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Many social media friends in a region will make it easier to move there	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Many of my friends live in Twente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- My family/friends want me to stay in Twente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Using social media, I can get specialized information on job possibilities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- My family/friends see Twente as a good residence option	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Many of my social media friends live in other regions in NL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- My location decision will be based on my network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- It is important to have a network in the region I will start to work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- My family/friends generally think positive about Twente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Several persons on social media can help me to find a job	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- A lot of my family members live in Twente	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Many of my social media friends live abroad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Being close to family and friends is important when considering a place to work ☐ ☐ ☐ ☐ ☐
- My network provides information on job opportunities in Twente ☐ ☐ ☐ ☐ ☐
- My family/friends think west NL is better than east ☐ ☐ ☐ ☐ ☐
  
- I feel attracted to a region by having a lot of social media friends there ☐ ☐ ☐ ☐ ☐
- When my network recommends a job opening in another region, I would consider moving ☐ ☐ ☐ ☐ ☐
- Many of my social media friends live in Twente ☐ ☐ ☐ ☐ ☐
- Interactions with my social media network provide me information on job possibilities ☐ ☐ ☐ ☐ ☐
- My family's/friends opinion on working and living in Twente is important to me ☐ ☐ ☐ ☐ ☐
  
- Bedrijvendagen Twente (\*)
  - I am familiar with the career fair Bedrijvendagen Twente ☐ Yes ☐ No
  - I visited the career fair before ☐ Yes ☐ No
  - I would consider visiting the career fair (again) ☐ Yes ☐ No
  
  - For job search I find the career fair Bedrijvendagen Twente important ☐ ☐ ☐ ☐ ☐
  - Visiting the career fair Bedrijvendagen Twente helps me to get in contact with companies ☐ ☐ ☐ ☐ ☐
  - It's interesting to get in contact with companies located in Twente during the career fair ☐ ☐ ☐ ☐ ☐
  - It's interesting to visit the career fair mainly for the companies located in Twente ☐ ☐ ☐ ☐ ☐
  - It's interesting to follow the career fair Bedrijvendagen Twente on Social Media ☐ ☐ ☐ ☐ ☐
  - It's interesting to be updated via Social media on news about the career fair ☐ ☐ ☐ ☐ ☐
  
- Kennispark (\*)
  - I am familiar with Kennispark Twente, offering jobs ☐ Yes ☐ No
  - I visited the website of Kennispark before ☐ Yes ☐ No
  - I would consider to visit the website of Kennispark, for jobs (again) ☐ Yes ☐ No
  
  - For job search Kennispark Twente important ☐ ☐ ☐ ☐ ☐
  - Visiting Kennispark helps to get in contact with companies in Twente ☐ ☐ ☐ ☐ ☐
  - It's interesting to get in contact with companies in Twente with the help of Kennispark ☐ ☐ ☐ ☐ ☐
  - It's interesting to follow Kennispark Twente on Social Media ☐ ☐ ☐ ☐ ☐

- It's interesting to be updated via the Social media of Kennispark Twente on career news ☐ ☐ ☐ ☐ ☐

- Twente.com (\*)

- I am familiar with Twente.com, offering jobs ☐ Yes ☐ No
- I visited Twente.com before ☐ Yes ☐ No
- I would consider to visit Twente.com for jobs in Twente (again) ☐ Yes ☐ No
- For job search I find the website Twente.com important ☐ ☐ ☐ ☐ ☐
- Visiting Twente.com helps to get in contact with companies in Twente ☐ ☐ ☐ ☐ ☐
- Becoming a member of Twente.com helps to get in contact with companies in Twente ☐ ☐ ☐ ☐ ☐
- It's interesting to become a member at Twente.com, for jobs in Twente ☐ ☐ ☐ ☐ ☐
- It's interesting to follow Twente.com on Social Media ☐ ☐ ☐ ☐ ☐
- It's interesting to be updated via the Social media of Twente.com on career news ☐ ☐ ☐ ☐ ☐

- Please list below the Social Media websites you would use in your job-search:

.....

.....

- Feel free to leave any comment on this survey in the box below:

.....

.....

**Thank you very much for participating!**

(\*) as a result of the pre-test; the items on a five point Likert scale in these three sections will only be shown the participant when answered 'Yes' on being 'Familiar with' the initiative.

### 7.3 – Appendix 3: Factor analysis - Outcome Pre-test Survey

Figure 3 shows the factor analysis of the measurement items of the variables of H1 and H2.

	Component												
	1	2	3	4	5	6	7	8	9	10	11	12	13
- a dynamic living atmosphere (H1a_1)			,524				,307		,398				
- a good atmosphere (H1a_2)	,358		,637										
- a pleasant living environment (H1a_3)		,345	,774			,328							
- a high quality of the environment (H1a_4)									,746				
- safety, at home and in the streets (H1a_5)						,715							
- a low crime rate (H1a_6)						,804							
- enough space in residential areas (H1a_7)					,333				,619				
- enough houses available (H1a_8)				,518						,496			
- a green environment (nature) (H1a_9)													-,547
- attractive residential areas (H1a_10)			,693										
- a more urban than rural area (H1a_11)	,455											,411	,308
- a job for a partner/spouse (H1a_12)	,527								,320				
- a low average age of community members (H1a_13)										,836			
- an open community (H1b_1)		,752											
- a friendly community (H1b_2)		,799											
- a warm-hearted community (H1b_3)		,647				,365							-,322
- solidarity among community members (H1b_4)		,384				,433					,355		
- a feeling of being easily accepted by the community (H1b_5)		,540		,394					,416				
- a smooth integration in the community (H1b_6)		,618		,352									
- good leisure facilities (H1c_1)			,516						,312				,345
- enough shops for basic goods (H1c_2)			,311		,316	,533							
- a variety of shops (H1c_3)												,780	
- enough cafes and nightclubs (H1c_4)							,605			,345	,339		
- enough recreational opportunities (H1c_5)	,304		,347										
- good health services (H1c_6)	,408									-,547			
- a rich historical background (H1c_7)							,461	,453					
- enough theatres to visit (H1c_8)	,334						,418		,559				
- enough museums to visit (H1c_9)							,804						
- enough events, organized regularly (H1c_10)											,831		
- enough job opportunities (H2a_1)	,906												
- enough jobs for my personal development (H2a_2)	,874												
- companies offering a sufficient starter salary (H2a_3)	,773												
- a range of interesting employers (H2a_4)	,777												
- a high number of employers (H2a_5)	,713												
- a possibility to live close(r) to work (H2a_6)			,487		,453								
- companies offering challenging jobs (H2a_7)	,851												
- companies offering employer benefits (H2a_8)	,548			,319		,423	-,302						
- companies offering enough salary (H2a_9)	,815												
- reasonable housing costs (H2b_1)				,799									
- low living costs (H2b_2)				,849									
- a prosperous market (H2b_3)	,455						,486						
- a strong local economy (H2b_4)	,418				,418								,395
- a short home-to-work travel (H2c_1)		,302	,301		,318			-,512					
- a good infrastructure (H2c_2)		,366						,599		-,428			
- a good connection to other regions in NL (H2c_3)								,829					
- a central location with respect to other regions in NL (H2c_4)								,661					
- a central location with respect to Germany (H2c_5)						,502	,599						
- in general little traffic (H2c_6)	-,387			,506									
- a possibility to get an (further) education (H2d_1)					,769								
- good primary and secondary schools (H2d_2)			,471	,468									
- proximity to higher education (H2d_3)					,509								-,360
- an undergraduate institution and university (H2d_4)					,749								
- high quality of education (H2d_5)					,691							,384	
- a high education level of residents (H2d_6)		,535	,311							,374			

**Figure 3 – Factor analysis of the items of ‘Residential Area’ and ‘Work and Economic factors’**

Figure 4 shows the factor analysis of the measurement items related to Social networks and social influence, and use of SNS, which has four different variables out of literature.

	Component					
	1	2	3	4	5	6
- My network provides information on job opportunities in Twente (H3a_1)	,642					
- My location decision will be based on my network (H3a_2)		,668				-,387
- Using social media, I can get specialized information on job possibilities (H3a_3)			,504		-,543	
- Interactions with my social media network provide me information on job possibilities (H3a_4)			,475	,613		
- Several persons on social media can help me to find a job (H3a_5)				,734		
- Social media makes it easy to find a job through my network (H3a_6)			,771	,323		
- Many of my friends live in Twente (H3b_1)	,690				,348	
- A lot of my family members live in Twente (H3b_2)	,713					
- It is important to have a network in the region I will start to work (H3b_3)		,677	,327			
- Being close to family and friends is important when considering a place to work (H3b_4)		,782				
- When my network recommends a job opening in another region, I would consider moving (H3b_5)				,849		
- I trust someone on social media in giving advice on job decisions (H3c_1)			,776			
- Many social media friends in a region will make it easier to move there (H3c_2)			,453			-,519
- I feel attracted to a region by having a lot of social media friends there (H3c_3)		,358	,411			-,398
- Many of my social media friends live in Twente (H3c_4)	,811					
- H3c_5 recoded: Many friends in other regions in NL						,695
- H3c_6 recoded: Many friends abroad						,731
- My family/friends see Twente as a good residence option (H3d_1)	,358				,706	
- My family's/friends opinion on working and living in Twente is important to me (H3d_2)		,737				
- H3d_3 recoded: Family/friends think another region better than Twente				-,307	,715	
- H3d_4 recoded: Family/friends think west NL better than east	,335				,357	,418
- My family/friends want me to stay in Twente (H3d_5)	,743					
- My family/friends generally think positive about Twente (H3d_6)					,655	

**Figure 4 – Factor analysis of the items of ‘Social networks, social influence and use of SNS’**

Figure 5 shows the factor analysis of the measurement items related to ‘Awareness of jobs and receiving information’, which has four different variables out of literature.

	Component			
	1	2	3	4
- For job search the career fair Bedrijvendagen Twente is important (H4a_1)	,337			,786
- Visiting the career fair Bedrijvendagen Twente helps to get in contact with companies (H4a_2)			,430	,772
- It's interesting to get in contact with companies located in Twente during the career fair (H4a_3)			,617	,525
- It's interesting to visit the career fair mainly for the companies located in Twente (H4a_4)	,564			
- It's interesting to follow the career fair Bedrijvendagen Twente on Social media (H4a_5)	,804		,386	
- It's interesting to be updated via Social media on news about the career fair (H4a_6)	,842			
- For job search Kennispark Twente is important (H4b_1)			,754	
- Visiting Kennispark helps to get in contact with companies in Twente (H4b_2)			,762	
- It's interesting to get in contact with companies in Twente with the help of Kennispark (H4b_3)			,778	
- It's interesting to follow Kennispark Twente on Social media (H4b_4)	,852			
- It's interesting to be updated via the Social media of Kennispark Twente on career news (H4b_5)	,761			,416
- For job search the website Twente.com is important (H4b/c_1)		,734		
- Visiting Twente.com helps to get in contact with companies in Twente (H4b/c_2)		,884	,346	
- Becoming a member of Twente.com helps to get in contact with companies in Twente (H4b/c_3)		,915		
- It's interesting to become a member at Twente.com, for jobs in Twente (H4b/c_4)		,850		
- It's interesting to follow Twente.com on Social media (H4b/c_5)	,516	,441	-,330	,472
- It's interesting to be updated via the Social media of Twente.com on career news (H4b/c_6)	,535	,396	-,314	,549

**Figure 5 – Factor analysis of the items of ‘Awareness of jobs and receiving information’**

## 7.4 – Appendix 4: Factor analysis - Outcome Main Distribution Survey

Figure 6 shows the factor analysis of the main research regarding ‘Residential Area’ and ‘Work and Economic Aspects’.

	Component								
	1	2	3	4	5	6	7	8	9
H2a_1 - enough job opportunities	,791								
H2a_2 - enough jobs for my personal development	,779								
H2a_9 - companies offering enough salary	,773								
H2a_7 - companies offering challenging jobs	,741								
H2a_4 - a range of interesting employers	,706								
H2a_5 - a high number of employers	,678								
H2a_3 - companies offering a sufficient starter salary	,668								
H2a_8 - companies offering employer benefits	,620								
H1a_12 - a job for a partner/spouse	,579								
H2b_3 - a prosperous market	,436								
H2b_4 - a strong local economy	,395				,330				
H1b_3 - a warm-hearted community		,822							
H1b_1 - an open community		,797							
H1b_2 - a friendly community		,766							
H1b_5 - a feeling of being easily accepted by the community		,733							
H1b_4 - solidarity among community members		,710							
H1b_6 - a smooth integration in the community		,655			,315				
H1a_2 - a good atmosphere		,558	,480						
H1a_4 - a high quality of the environment			,583						
H1c_5 - enough recreational opportunities			,559						
H1a_3 - a pleasant living environment		,494	,519						
H1c_1 - good leisure facilities			,507						
H1a_10 - attractive residential areas			,464						
H1a_1 - a dynamic living atmosphere		,345	,426		,307				
H2b_1 - reasonable housing costs				,859					
H2b_2 - low living costs				,834					
H1a_8 - enough houses available				,707					
H2c_3 - a good connection to other regions in NL					,675				
H2c_4 - a central location with respect to other regions in NL				-,417	,597				
H2c_5 - a central location with respect to Germany					,536				
H2c_2 - a good infrastructure			,481		,519				
H1a_11 - a more urban than rural area	,309				,372				
H1c_9 - enough museums to visit						,715			
H1c_8 - enough theatres to visit						,710			
H1c_4 - enough cafes and nightclubs						,509			,369
H1c_10 - enough events, organized regularly		,324				,478			
H1c_3 - a variety of shops						,433			,396
H2d_3 - proximity to higher education							,706		
H2d_4 - an undergraduate institution and university							,668		-,326
H2d_5 - high quality of education							,627		,317
H2d_1 - a possibility to get an (further) education							,612		
H1a_6 - a low crime rate								,827	
H1a_5 - safety, at home and in the streets								,778	
H1a_13 - a low average age of community members									,609
H2d_6 - a high education level of residents				-,301					,362

Figure 6 – Factor analysis of the items of ‘Residential Area’ and ‘Work and Economic factors’.



Figure 7 shows the factor analysis of the main research regarding ‘Social networks and social influence, and use of SNS’.

	Component				
	1	2	3	4	5
H3a_6 - Social media makes it easy to find a job through my network	,759				
H3a_5 - Several persons on social media can help me to find a job	,706				
H3a_3 - Using social media, I can get specialized information on job possibilities	,699				
H3a_4 - Interactions with my social media network provide me information on job possibilities	,694				
H3c_1 - I trust someone on social media in giving advice on job decisions	,647				
H3c_4 - Many of my social media friends live in Twente		,793			
H3b_1 - Many of my friends live in Twente		,744			
H3b_2 - A lot of my family members live in Twente		,740			
H3a_1 - My network provides information on job opportunities in Twente	,373	,467			
H3d_1 - My family/friends see Twente as a good residence option			,779		
H3d_6 - My family/friends generally think positive about Twente			,761		
H3d_3 recoded - My family/friends think another region is better than Twente			,685		
H3d_5 - My family/friends want me to stay in Twente		,459	,480		
H3d_4 recoded - My family/friends think west NL is better than east			,384		-,374
H3b_4 - Being close to family and friends is important when considering a place to work				,731	
H3d_2 - My family's/friends opinion on working and living in Twente is important to me				,682	
H3a_2 - My location decision will be based on my network				,655	,364
H3b_3 - It is important to have a network in the region I will start to work				,641	,369
H3c_2 - Many social media friends in a region will make it easier to move there					,585
H3c_3 - I feel attracted to a region by having a lot of social media friends there	,315				,576
H3b_5 - When my network recommends a job opening in another region, I would consider moving		,365			,529
H3c_6 recoded - Many of my social media friends live in Twente		,345			-,459

**Figure 7 – Factor analysis of the items of ‘Social networks, social influence and use of SNS’**

Figure 8 shows the factor analysis of the measurement items related to ‘Awareness of jobs and receiving information’.

	Component			
	1	2	3	4
It's interesting to follow Kennispark Twente on Social media	,888			
It's interesting to be updated via the Social media of Kennispark Twente on career news	,856			
It's interesting to be updated via Social media on news about the career fair	,848			
It's interesting to follow the career fair Bedrijvendagen Twente on Social media	,809		,337	
It's interesting to be updated via the Social media of Twente.com on career news	,755	,433		
It's interesting to follow Twente.com on Social media	,753	,422		
It's interesting to become a member at Twente.com, for jobs in Twente		,884		
Becoming a member of Twente.com helps to get in contact with companies in Twente		,864		
For job search the website Twente.com is important		,836		
Visiting Twente.com helps to get in contact with companies in Twente		,791		
It's interesting to get in contact with companies in Twente with the help of Kennispark			,834	
Visiting Kennispark helps to get in contact with companies in Twente			,748	
For job search Kennispark Twente is important			,710	
Visiting the career fair Bedrijvendagen Twente helps to get in contact with companies				,897
For job search the career fair Bedrijvendagen Twente is important	,413			,705
It's interesting to get in contact with companies located in Twente during the career fair		,360	,338	,683
It's interesting to visit the career fair mainly for the companies located in Twente	,409	,318		,511

**Figure 8 – Factor analysis of the items of ‘Awareness of jobs and receiving information’**

## 7.5 – Appendix 5: Construct items

The variables including the reliability of the construct, the mean and standard deviation per item are given.

**Table 16 – Reliability per construct, mean and standard deviations per item**

	Mean	SD
<i>Attractiveness of region; H1a (5-point scale items; <math>\alpha=.78</math>)</i>	2.33	.553
1. a high quality of the environment	2.09	.723
2. enough recreational opportunities	2.31	.803
3. a pleasant living environment	2.08	.818
4. good leisure facilities	2.48	.822
5. attractive residential areas	2.48	.769
6. a dynamic living atmosphere	2.54	.891
<i>Safety; H1a-2 (5-point scale items; <math>\alpha=.72</math>)</i>	2.42	.806
1. a low crime rate	2.70	.890
2. safety, at home and in the streets	2.14	.931
<i>Sociability; H1b (5-point scale items; <math>\alpha=.89</math>)</i>	2.37	.666
1. a warm-hearted community	2.37	.861
2. an open community	2.07	.755
3. a friendly community	2.20	.823
4. a feeling of being easily accepted by the community	2.51	.883
5. solidarity among community members	2.49	.874
6. a smooth integration in the community	2.53	.883
7. a good atmosphere	2.43	.937
<i>Nr of Facilities; H1c (5-point scale items; <math>\alpha=.71</math>)</i>	2.55	.658
1. enough museums to visit	3.03	.856
2. enough theatres to visit	2.79	.941
3. enough cafes and nightclubs	2.66	1.171
4. enough events, organized regularly	2.24	.995
5. a variety of shops	2.05	.853
<i>Employment prospect; H2a (5-point scale items; <math>\alpha=.88</math>)</i>	2.89	.507
1. enough job opportunities	2.97	.799
2. enough jobs for my personal development	3.10	.859
3. companies offering enough salary	2.90	.674
4. companies offering challenging jobs	2.88	.686
5. a range of interesting employers	2.96	.873
6. a high number of employers	2.84	.707
7. companies offering a sufficient starter salary	2.95	.626
8. companies offering employer benefits	2.84	.665
9. a job for a partner/spouse	2.82	.703
10. a prosperous market	2.63	.792
11. a strong local economy	2.85	.798
<i>Costs of living/Housing; H2b (5-point scale items; <math>\alpha=.82</math>)</i>	2.62	1.044
1. reasonable housing costs	2.55	1.247
2. low living costs	2.65	1.374
3. enough houses available	2.86	1.003

<i>Accessibility; H2c (5-point scale items; <math>\alpha=.66</math>)</i>	2.70	.674
1. a good connection to other regions in NL	2.77	1.135
2. a central location with respect to other regions in NL	3.30	1.153
3. a central location with respect to Germany	2.03	1.038
4. a good infrastructure	2.35	.859
5. a more urban than rural area	3.03	.944
<i>Educational possibilities; H2d (5-point scale items; <math>\alpha=.68</math>)</i>	1.91	.605
1. proximity to higher education	1.95	.789
2. high quality of education	1.86	.815
3. a possibility to get an (further) education	1.91	.720
<i>SNS network's job info provision; H3a (5-point scale items; <math>\alpha=.78</math>)</i>	2.90	.711
1. Social media makes it easy to find a job through my network	2.66	.909
2. Several persons on social media can help me to find a job	2.86	.981
3. Using social media, I can get specialized information on job possibilities	2.74	.983
4. Interactions with my social media network provide me information on job possibilities	3.00	1.022
5. I trust someone on social media in giving advice on job decisions	3.25	.980
<i>Nr of Peers in region (online and offline); H3b (5-point scale items; <math>\alpha=.74</math>)</i>	3.27	.949
1. Many of my social media friends live in Twente	3.16	1.213
2. Many of my friends live in Twente	2.79	1.285
3. A lot of my family members live in Twente	4.02	1.494
4. My network provides information on job opportunities in Twente	3.09	1.024
<i>Proximity to network; H3b-2 (5-point scale items; <math>\alpha=.65</math>)</i>	2.80	.778
1. Being close to family and friends is important when considering a place to work	2.40	1.102
2. My family's/friends opinion on working and living in Twente is important to me	3.02	1.118
3. My location decision will be based on my network	3.12	1.141
4. It is important to have a network in the region I will start to work	2.66	1.081
<i>Social Influence; H3d (5-point scale items; <math>\alpha=.69</math>)</i>	2.86	.711
1. My family/friends see Twente as a good residence option	2.63	.928
2. My family/friends generally think positive about Twente	2.18	.874
3. My family/friends think another region is better than Twente (recoded)	3.20	1.093
4. My family/friends want me to stay in Twente	3.44	1.040
<i>University activity (Bedrijvendagen); H4a (5-point scale items; <math>\alpha=.72</math>) (N=236)</i>	2.26	.690
1. Visiting the career fair Bedrijvendagen Twente helps to get in contact with companies	1.94	.815
2. For job search the career fair Bedrijvendagen Twente is important	2.30	.945
3. It's interesting to get in contact with companies located in Twente during the career fair	2.11	.878
4. It's interesting to visit the career fair mainly for the companies located in Twente	2.68	1.079
<i>Websites on jobs (Kennispark); H4b (5-point scale items; <math>\alpha=.79</math>) (N=171)</i>	2.48	.710
1. It's interesting to get in contact with companies in Twente with the help of Kennispark	2.39	.814
2. Visiting Kennispark helps to get in contact with companies in Twente	2.41	.824
3. For job search Kennispark Twente is important	2.83	.894
<i>Websites on jobs (Twente.com); H4c (5-point scale items; <math>\alpha=.90</math>) (N=74)</i>	2.57	.688
1. It's interesting to become a member at Twente.com, for jobs in Twente	2.62	.789
2. Becoming a member of Twente.com helps to get in contact with companies in Twente	2.57	.723

3. For job search the website Twente.com is important	2.58	.844
5. Visiting Twente.com helps to get in contact with companies in Twente	2.53	.780
<i>Interest in SNS updates on jobs; H4d (5-point scale items; <math>\alpha=.92</math>) (N=58)</i>	3.03	.903
1. It's interesting to follow Kennispark Twente on Social media	2.83	.958
2. It's interesting to be updated via Social media on news about the career fair	2.62	1.121
3. It's interesting to be updated via the Social media of Kennispark Twente on career news	2.84	1.040
4. It's interesting to follow the career fair Bedrijvendagen Twente on Social media	2.79	1.120
5. It's interesting to be updated via the Social media of Twente.com on career news	3.07	.989
6. It's interesting to follow Twente.com on Social media	3.03	.955

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