

**The self-determining potential of immigration and its
impact on well-being: A qualitative analysis of
immigrant students' post-migration future
perspectives**

Master's thesis

Author:

Sanaz Bohlouli

Supervisors

Dr. A. M. Sools

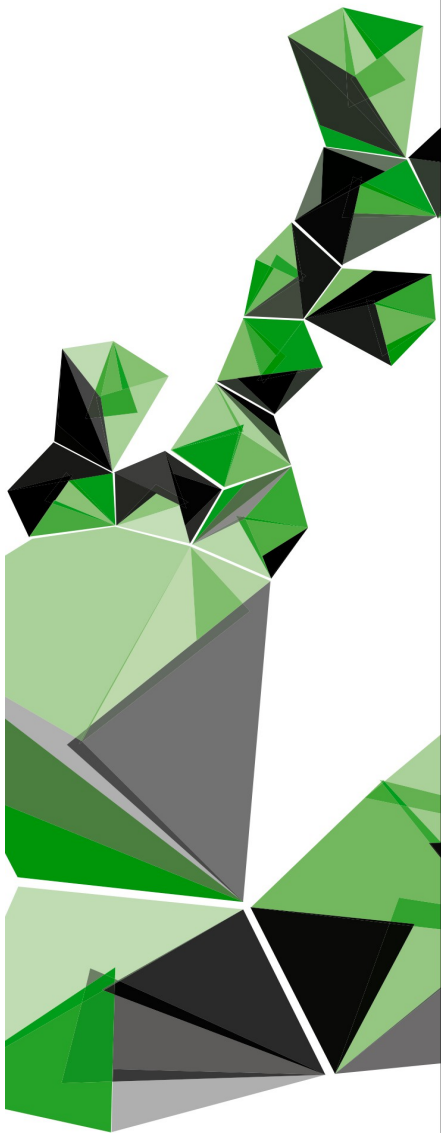
Prof. Dr. G. J. Westerhof

Psychology

Faculty of Behavioral, Management and Social Science

University of Twente

Enschede, July 2020



Abstract

Background and objective. Currently, immigration is a hot topic in Europe and is associated with difficulties. Immigration is due to bad political, economic, social and/or environmental conditions in the country of origin, which are better in the destination country. Since the number of immigrant students increases in Germany and the importance of immigrant students for the development of the country is evidenced, this study focuses on the present and future perspectives of this group. The aim of this study is to explore the experienced and anticipated psychological needs of immigrant students to better understand what they require overcoming post-immigration difficulties. The fulfillment of the psychological needs: competence, autonomy and relatedness, which are based on the Self-Determination Theory, are associated with well-being.

Methods. This study used a narrative approach. Future perspectives of immigrant students were obtained through the instrument 'Letter from the future'. Further, semi-interviews were conducted to analyze the rationale behind those letters and the present and future perspectives of immigrant student. Participants were required through purposive sampling. An adapted version of the 'Future Self-Continuity Measure' was used to gain understanding about the gap between already fulfilled psychological needs in the present and yet required psychological needs to overcome post-immigration difficulties.

Results. In the future perspectives relatedness is most important and autonomy is least important. In the present perspectives competence is most important and relatedness is least important. In the future perspectives psychological well-being is most important and social and emotional well-being are rather equally important. In the future perspectives examples for competence are: self-confidence and progress; for autonomy are: self-employment and financial independence; and for relatedness are: pride and loyalty. In the present perspectives examples for competence are: being consequent and productive; for autonomy are: being innovative and showing growth; and for relatedness are: courage and peace. In the future perspectives examples for psychological well-being are: being proud and goal setting; for social well-being are: society is understandable and being part of a community; and for emotional well-being are: joy and contentment. Findings of the needs-continuity scale show clear desire of improvement in competence, autonomy and relatedness. The improvement of relatedness appears most important and that of autonomy the least.

Conclusion and discussion. Positive psychological interventions could profit from the results of this study, since the main interest of those interventions is the enhancement and maintenance of well-being, with or without the existence of pathological symptoms. Due to the differences and similarities of present and future perspectives of the meaning and importance of psychological needs, it is important to understand the meaning and value a desired psychological needs have to effectively fulfill them.

Keywords: Qualitative research, immigrant students, psychological needs, well-being, future perspectives.

Table of contents

Abstract	2
Table of contents	3
Introduction	4
The current situation of immigration	4
The importance of student immigration in qualitative research	5
Psychological needs and well-being of immigrant students	7
Importance of the current study and the research question	9
Methods	10
Design	10
Participants and recruitment	11
Procedure	12
Measurement instruments	12
Data analysis	15
Results	16
A descriptive summary of the eight participants	16
General characteristics of the letters	16
Findings in the analysis of psychological needs in the 'Letter from the Future'	17
Findings in the analysis of well-being in the 'Letter from the Future'	22
General characteristics of the interviews	26
Findings in the analysis of psychological needs in the interviews	26
A holistic description of two participants	33
Conclusion and discussion	33
General findings	33
Strengths and limitations	39
Recommendations	40
Conclusion	41
References	43
Appendix	48
Appendix A: Invitation email	48
Appendix B: Informed Consent	49
Appendix C: Questionnaire of demographics	50
Appendix D: Instruction of the 'Letter from the Future'	51
Appendix E: Interview scheme	52

Introduction

The current study is about how young adults, who have immigrated to Germany and are students, imagine their future needs and make sense of their well-being in the future. Here, the present and future perspective of immigrant students are determined and compared with each other. In this regard, the relationship between immigration, human psychological needs and well-being is examined and is linked to the sense making behavior of those immigrants.

The current situation of immigration

Immigration entails the permanent change of place of residence by movement over long distances due to responses to resources whose availability is insufficient or unachievable (Dingle, 2014). Immigrants leave their main habitat and face the challenge of adaptation and adjustment to an alien environment (Dingle, 2014). Due to the course of globalization and the process of economic development, the redistribution of populations is encouraged, both within and across nations (White, 2016). The ease of transport and information gathering, due to the increasing interconnectivity within the globe, has facilitated the process of immigration (Chadda, Kumar & Sarkar, 2018). The on and on fading of the barriers between countries, have encouraged the expanding flows of goods, services, capital, knowledge, ideas and immigration of individuals through crossing the borders (Wang & Suyama, 2018).

Historically, several reasons for immigration can be observed. Human development and civilization are linked to immigration (MacKellar & McNicoll, 2019). Immigration occurred due to the conquest of regions and the expulsion of locals, while searching for improved and safe settlement areas and economic opportunities (McAuliffe & Ruhs, 2017). Nowadays, two factors can be differentiated as reasons for immigration. First, regarding the circumstances in the country of origin, push-factors that make immigration appear reasonable are poverty, war, political instability, religious intolerance, low income (Ozaltin, Shakir, & Loizides, 2019), prejudices and stereotypes towards members of minorities (Koval, Dieckbreder & Zippert, 2018) and climate change and natural disasters (Islam, 2018). Second, regarding the circumstances in the destination country, pull-factors that make immigration seem attractive are hopes for political freedom, economic prosperity and job opportunities (Ozaltin et al., 2019). Different reasons or combinations of these reasons can lead to different types of immigration.

Several typologies of immigrants can be defined, each aiming for different goals. One important type of immigration is *labour immigration* or also called economic immigration. These include work-related immigrants who seek employment and hope for a better economic

future. The next type is *refugee immigration* where people escape from the political situation in their country of origin, for example from war, inhuman treatment and persecution. The reason for a nation to welcome refugees is of a humanitarian nature. Another type of immigration is *family reunification*, which implies reuniting with family members to be able to live together. The last immigration type and the main focus of this study is *student immigration* (Gerdes, Schultz-Nielsen & Wadensjö, 2011). Distinctive about student immigration is the pre-immigration level of education, which is a pre-condition to be able to immigrate. Further, immigrant students aim to increase their chances of employability, wage and likelihood to acquire a citizenship for the destination country (Raghuram, 2013).

Immigration is one of the prime topics in Europe. Approximately, there were 2.4 million immigrants to the EU-28 from non-EU countries in 2017. As the average age of the total population of the EU-28 in 2018 was 43.1 years, compared to 28.3 years for immigrants to the EU-28 in 2017, clearly mainly young people are immigrating for a better future. In 2017, Germany reported the largest total number of immigrants by 917.1 thousand people. Also, on 1 January 2018, the largest number of non-nationals living in the EU Member States was found in Germany, accounting for 9.7 million people (Eurostat Statistics Explained, 2019). Germany, as an economically highly developed country, attracts student from all over the world. In 2017, Germany was the second most popular destination for immigrant students in Europe (Eurostat Statistics Explained, 2020). In Germany, 394.665 immigrant students were registered in the fall semester 2018/2019. This counts for 13.8 percent of the total amount of students that were enrolled during that period (Federal Statistical Office of Germany, 2020). Due to the popularity of Germany as a destination country for immigrants in general, and the high proportion and growing population of immigrant students in this country, the present study focuses on student immigration in Germany.

The importance of student immigration in qualitative research

As soon as immigrant students decide to work in the immigration country after completing their education, that country can benefit from their skills and knowledge. Therefore, many countries are recruiting immigrant students in the hope that these international students will contribute to national innovation agendas (Geddie, 2015). Rephrasing, the prior mentioned aims of the immigration country are also called ‘brain gain’, which is also rooted in the typology of *labour immigration* (Gerdes et al., 2011). Since immigrant students are important for the development of the country, it is favorable to explore and understand their needs and state of well-being.

Research has shown that there are several qualitative studies on immigration (Shala, Morina, Salis Gross, Maercker & Heim, 2020; Weishaar, 2008), which deal with topics of post-migration difficulties, coping mechanisms by which these difficulties are held in check, and approaches to overcome these difficulties. These difficulties include: social-related stress like the loss of social contacts and support; work-related stress which can be based on the cognitive underestimation of immigrants, which make them overqualified for jobs they practice, which again may cause them to become frustrated. The unsuccessful adaptation, unfulfilled desires and dissatisfaction with post-migration living are reported to have negative effects on health and are also reported to be as burdensome or even more burdensome as traumatic events in pre-immigration living. Further, self-management and social support are reported as important coping mechanisms for immigrants. Interventions are more and more based on illness narratives that help to understand immigrants within their context, rather than on diagnoses and labels of disorders that can be stigmatizing (Shala et al., 2020).

What stands out is the frequency of qualitative studies on refugees (Atabekova, 2017; Ghorashi, 2008; Renner et al., 2020), as this group of immigrants experience forced displacement, are exposed to various risks during their immigration process and have been through a lot before reaching their destination country. According to Ghorashi (2016) refugees are vulnerable but have accumulated a lot of energy that comes from dreaming of a new and better life. Therefore, the first years of post-immigration are very important for integration and building resilience so that frustration can be avoided.

In comparison, there are less qualitative studies about student immigration. That could be due to the fact that destination countries recognize the value of student immigration and consider them as desirable immigrants who add to the economic growth of that country. Also, the pre-admission integration policies of some European countries, including Germany, require the acquisition of the language, history and culture of the destination country as a pre-condition for student immigration, which is considered to simplify the integration (Raghuram, 2013). Based on the above mentioned reasons, student immigration seems to be easier, tolerated and more regulated, which could be why there is less research in this field. But literature research has shown that student mobility in Europe face financial, social and linguistic challenges (Wulz & Rainer, 2015). Immigrant students work in various fields of labour to be able to pay their tuition fees, living and study costs. For example, immigrant students work as taxi-drivers, in restaurants or shops and this multiplication of roles keeps them away from being primarily students (Raghuram, 2013). Also, social support through social relations and family life is considered necessary in immigrant student's lives

(Raghuram, 2013). Language skills are needed to attend classes and to build relationships with other people that enable integration. On that account, this research aims to display the importance of paying attention to student immigration. There are a few qualitative studies available on student immigration that look at the reasons for their immigration and the difficulties they face (Nazari & Seyedan, 2016; Ovie & Barrantes, 2019). However, there is a shortage of research on the psychological needs of immigrant students that could be taken into account to overcome the difficulties mentioned above. Identifying those needs could in turn increase well-being.

Psychological needs and well-being of immigrant students

The Self-Determination Theory states that the fulfillment of the three psychological needs: competence, autonomy and relatedness, contributes to optimal functioning and personal growth. Being self-determined means that one's own action is based on psychological freedom and not on coercion (Bohlmeijer & Hulsbergen, 2013). The satisfaction of these three psychological needs enhance intrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation comes from the interest and pleasure in actions that seem relevant and meaningful to oneself. However, external motivation is linked to actions that are imposed from the outside and that are associated with pressure and stress. The more we act on the basis of intrinsic motivation, the more often our needs will be met, because intrinsic motivation has a positive effect on the perseverance and confidence in one's competencies, which in turn can enhance one's autonomy (Bohlmeijer & Hulsbergen, 2013).

Competence includes one's confidence to be able to achieve desired results and successfully meet challenges (Deci et al., 2001). This need also implies the mastery over one's environment, which means that people desire to successfully engage, manipulate, and negotiate their environment (Wehmeyer, Shogren, Little & Lopez, 2017). In other words, you want to be good at something (Bohlmeijer & Hulsbergen, 2013). Autonomy implies a feeling of voluntariness (Wehmeyer et al., 2017) and the sense of making own choices (Deci et al., 2001). The actions and activities are self-endorsed, self-determine and are confirmed personally (Wehmeyer et al., 2017). This need implies the desire to be independent, the ability to give direction to your life and experience freedom based on your actions (Bohlmeijer & Hulsbergen, 2013). Relatedness is based on the presence of mutual respect, reliance (Deci et al., 2001), acceptance, understanding and appreciation (Bohlmeijer & Hulsbergen, 2013). This need is accompanied by a sense of belonging, closeness and connection to others, and the desire to care or to be cared by others (Wehmeyer et al., 2017). In other words, there is the

need to be part of a community, maintain meaningful relationships, share experiences and trust other people (Bohlmeijer & Hulsbergen, 2013). The fulfillment of these three psychological needs is associated with the enhancement of well-being (Church et al., 2013; Milyavskaya & Koestner, 2011; Ryan & Deci, 2000; Wehmeyer et al., 2017).

Ryff and Singer (1996) defined psychological well-being, also called positive psychological functioning, as a combination of six factors, e.g. self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth. Current research adds that mental health is defined not only by the absence of psychological problems, but also by psychological, social and emotional well-being (Keyes, 2002). Thereby, social well-being is defined by social coherence, actualization, integration, acceptance and contribution. Emotional well-being is defined by the presence of positive affect, the absence of negative affect and perceived satisfaction with life (Keyes, 2002). The presence of mental health is also called flourishing. People who score high on psychological, social and emotional well-being are flourishing in life (Keyes, 2002). It can occur that a person suffers from a mental illness and at the same time enjoys a relatively high level of positive mental health. Also, the absence of psychopathology is neither required nor sufficient for a person to lead a productive, fruitful and actualized life. Lamers et al. (2011) describe this occurrence with the two-continuum model, which states that mental health and psychopathology lie on two different yet related axes and must therefore be considered independently of each other. Research shows that positive psychology interventions contribute to the improvement of well-being (Chakhssi, Kraiss, Sommers-Spijkerman & Bohlmeijer, 2018; Sommers-Spijkerman, Trompetter, Schreurs & Bohlmeijer, 2018). Therefore, this study aims to contribute to positive psychological therapy approaches by identifying factors such as the psychological needs of immigrant students that can enhance well-being.

In order to identify and explore these psychological needs, the present and future perspectives of immigrant students will be taken into account to determine which psychological needs are currently missing in the present and which psychological needs will be necessary in the future to deal with their post-immigration difficulties. Previous research deals with the past, present and future perspectives of refugees to better understand their experiences and the impact of their new countries (Ghorashi, 2008), but this has not been applied to student immigration yet. The importance of analyzing present and future perspectives becomes apparent, as imagining our own future is an ability to define and understand who we are (Sools & Mooren, 2012) to be able to conduct our present thoughts

and actions (Sools, Triliva & Filippas, 2017).

To reveal present and future perspectives, narrative futuring will be used, as previous research states that futuring is related to well-being and also has a positive influence on motivation (Sools, Mooren & Tromp, 2013). We as human beings call our identities into existence through narratives (Murray & Sools, 2014). Narrative futuring signifies imagining our possible self in the future, using stories. The imagination of the possible self can have a motivating function for one's current behavior and can provide an evaluative and interpretative ground for the present self, to understand the reasons for actions (Sools et al., 2017). Also, the concept of possible selves is stated to be related to well-being (Markus & Nurius, 1986). One of the central concepts within futuring is the sense making process. It is the active process of collecting and organizing information into a representation for the purpose of understanding a complex situation (Pirolli & Russell, 2011), such as the present and future perspectives of immigrant students. Sense making of the future refers to the meaning making of future narratives, to gain understanding of its narrator in the present (Sools et al., 2015).

Importance of the current study and the research question

Immigration brings with it its own difficulties, which can decrease well-being. In Germany the number of immigrant students is high, but little is known about their psychological needs, the fulfillment of which is necessary in the process of overcoming post-immigration difficulties. The fulfillment of psychological needs is associated with well-being. In order to flourish, it is crucial to gain further insight into the process of how immigrant students make sense of their future based on their psychological needs. The assumption is, that the appearance of psychological needs and signs of well-being in the present and future perspectives of immigrant students can help to understand what immigrant students want in their lives. The current study aims to determine the way immigrant students give meaning to their future and how their lives will look like in their imagination of their future. The imagination of the future can be used to investigate how immigrant students portray their psychological needs and the relationship these psychological needs have with the way they make sense of their future. It is expected that immigrant students portray their future possible-selves as being able to pay for their living expenses, to work in the field in which they have an academic background, to have social support, to communicate well in the foreign language, to have confidence in their abilities and to be independent.

Research has shown that there is no indication of other qualitative study on the present

and future perspectives of immigrant students with regard to their psychological needs that are based on the Self-Determination Theory. Therefore, there is a clear need for further research in this field, to promote positive psychological interventions.

The following research question can be drawn up based on this literature research:
What are the similarities and differences between the present and future perspectives of students who immigrated to Germany based on the Self-Determination Theory and their well-being?

The following sub-questions have been formulated:

- 1: *What is the relative importance that students who immigrated to Germany give to the psychological needs (competence, autonomy and relatedness) they anticipate in their future perspectives?*
- 2: *How are the psychological needs (competence, autonomy and relatedness), given meaning in the future perspectives of students who immigrated to Germany?*
- 3: *What is the relative importance that students who immigrated to Germany give to the well-being (psychological, emotional and social) they anticipate in their future perspectives?*
- 4: *How does well-being (psychological, emotional and social), given meaning in the future perspectives of students who immigrated to Germany?*
- 5: *What is the relative importance that students who immigrated to Germany give to the psychological needs (competence, autonomy and relatedness) they currently experience in their present perspectives?*
- 6: *How are the psychological needs (competence, autonomy and relatedness), given meaning in the present perspectives of students who immigrated to Germany?*

Methods

Design

The current qualitative study used a narrative approach based on written stories from the future and interviews. This design was chosen because of its exploratory nature and because of the focus on meaning-making (Boeije, 2005). Also, a qualitative study provides deeper insight into thoughts, feelings, words and written texts of participants due to the richness of the collected data (Forshaw, 2013). Narratives are individual stories that were collected to interpret and make sense of the actions of participants. The assumption that underlies narratives is that we interpret, define and understand ourselves and others' actions

through the exchange of our stories (Murray & Sools, 2014). Future, perspectives were obtained through the *Letter from the Future* instrument. Individual interviews were obtained to understand the rationale behind the letters as well as gaining in-depth knowledge pertaining to participants' present and future perspectives. In other words, it helped to understand the participants in their current context and their imagination about the future. The data was collected at two events. First through email exchange collecting the *Letters from the Future* and second during one individual session interviewing the participants. The official invitation email for participating in this study entailed the invitation letter, which can be found in appendix A. The participant was personally addressed in the invitation letter. The invitation email also contained the informed consent, that can be seen under appendix B. It informed the participant about the ethical guidelines required by the Ethics Committee, which the researcher had to follow and the participant had to sign before the start of the study. With the signature, the participant confirmed the receipt and understanding of information about the data usage, objectives and methods of the study and that the participation was voluntary, anonymous and could be stopped at any given time without justification. The invitation email also contained the demographical questionnaire that had to be filled out and can be found in appendix C. Also available in the invitation email was an instruction on how to write the *Letter from the future* and can be obtained from appendix D. The interview scheme can be found in appendix E. This research is approved by the Ethics Committee (BMS) of the faculty of behavioral sciences of the university of Twente with the request-number 200075.

Participants and recruitment

Participants were approached through the application of WhatsApp and an invitation email and were recruited through purposive sampling. The target population was a balanced gender sample that included immigrant students of higher educational level with sufficient knowledge of the English or German language and who were under the age of 30. Further inclusion criteria were that the participants had sufficient linguistic and digital skills to type and send a letter using a computer. The exclusion criteria were participants who were under the age of 18 and those who suffered from clinical symptoms. Out of ten people that were asked to participate in this study, 9 agreed to receive an official invitation email and a total of 8 respondents actually took part in this study. Among the respondents, there were 4 females and 4 males, between the age of 20 and 29 ($M=24.75$, $SD=3.23$). Participants were originally from Iran, Afghanistan, Azerbaijan and Turkey. 2 of the respondents were college students, which means that they were upcoming university students. Although, they had a high school

diploma from their home country, which was required to attend a university in Germany, those respondents additionally had to take exams at a German college. Those 2 participants were visiting such a college in Hannover (Germany) by the name of “Niedersächsisches Studienkolleg”. 4 of the respondents were bachelor students and 2 were aiming for a master's degree.

Procedure

First, the participants were asked if they would be interested and had the time to participate in the current study. Also, the aim of the study were briefly mentioned, and they were told receiving more information about this study by an official invitation email, once they would agree to participate. Next, the official invitation email were sent. Next, participants had to hand in their 'Letter from the Future'. This enabled the researcher to analyze the letters and to adapt the interview scheme individually for each participant, before the participants attended the interviews. At this point, also the informed consent and the demographical questionnaire had to be handed in. Next, according to the coding scheme which can be seen in Table 2 and Table 4, the letters were coded. Next, individual interview schemes were arranged. Next, interviews were conducted individually. The space where the interview was taken was made cozy so that the participants could feel comfortable and something to eat and drink was made available for them. A maximum of 45 minutes was scheduled for an interview. During each interview a voice recording application was used to enable to transcribe all the spoken words afterwards. Next, each interview was transcribed. The recorded materials was destroyed after completing the current research to ensure privacy. Finally, the interviews were hand coded.

Measurement instruments

Four measurement instruments were used. First, a questionnaire concerning demographics of the participants was used. The variables involve 'gender', 'age', 'nationality' and 'current education'.

Second, the 'Letter from the Future' was used. Participants had to imagine traveling to a desired future and writing a letter back to their present self from that future perspective. This type of letter displays a desired future and addresses the path from the present to the future. It was instructed that participants have to vividly mention the path that they will take to achieve that imagined desired future. They had to choose a time and place in the future where they already have fulfilled their needs. The *Letter from the future* have been suggested as a health

promotion instrument that could be utilized to foster health and well-being (Sools et al., 2015). For guidance to write the letter, the original instruction of Sools and Mooren (2012) has been applied. To adapt the instruction to this study, it was extended with the following sentence: 'Which need/s of yours did fulfill in the future and how?'. Also, the option to direct the letter to another person was omitted as the study focused on the individual needs and not hypothetical needs that someone else could have or would try to fulfill. At the beginning of the instruction, the participant was asked to take a moment to relax, before starting to write the letter, which was conform an adaptation to the original instruction (Sools, 2020). To ensure optimal results, an overview of the instruction on how to write the letter were provided in the form of a list of key points. The key point 'Fulfillment of needs' was added to the overview of the original key points. The instruction was offered in both German and English. The letters could be written in German, English or Persian, depending on the language that the participants preferred. The letters are used to answer the sub-questions one to four.

Third, a semi-structured interview format was chosen. An interview is a prime tool to gather qualitative data due to the feasibility of ensuring clarification based on profound data (Lopez & Whitehead, 2013). The semi-structured design of the interview enabled freedom and flexibility in seeking clarification through the ability of spontaneously asking questions in response to previous answers, yet having a guideline with prepared questions which covered the objectives. Hereby, the questions were open-ended to encourage participants to talk and to engage them in a conversation (Lopez & Whitehead, 2013). The questions could be asked in any order. In order to provide in-depth and lengthy answers, the following techniques were considered: funneling, which started with rough and general questions to more complex and directed questions. Also probing and paraphrasing were considered to gain details and clarification (Lopez & Whitehead, 2013). The interview set-up made use of card-sorting to visualize the subjects, which were the three psychological needs, to identify their relationship to each other. To help and to make the psychological needs visible, the identified psychological needs were written down separately on different cards and were put in front of the participant on the table. The participant were able to move these cards around freely to show their relationship to each other. Card-sorting is also used in other research to obtain in-depth data, to overcome communication barriers and to promote self-managed responses during an interview (Mammen, Norton, Rhee & Butz, 2016). Card-sorting was used to answer the fifth sub-question.

The interview was structured as follows. First, an introduction was given about the study and the purpose of the interview was explained. Second, the interviewee was able to

clarify any doubts about the interview through asking the following question: 'Do you have any remaining questions before we start?'. Third, questions about the process of writing the letter were asked. An example question was: 'How was it for you to write the letter from the future?'. Next, a description was given about the psychological needs competence, autonomy and relatedness and questions were asked about the psychological needs, that have been found in the letters of the participants. An example question for competence could be: 'Can you describe in more detail what feeling confident would look like in your future life?'. An example question for autonomy could be: 'Can you describe in more detail how being independent would look like in your future life?'. An example question for relatedness could be: 'What do you expect will happen when you need of relatedness is fulfilled in your future life?'. Next, questions about the relationship between the psychological needs founded in the letters was asked using card-sorting. Example questions are: 'Is there a need that emerges from another need? And why is that?'. Finally, questions were asked about the differences between the psychological needs in the present and in the future using the needs-continuity scale. The interviews were used to answer the sub-questions five and six.

The fourth measurement technique that was used, the needs-continuity scale, was adapted from the future self-continuity scale (Ersner-Hershfield et al, 2009). The original scale was intended to measure how similar the perception of an individual person is referring to its present self in comparison to its future self. The adapted version aimed to measure how similar the perception of an individual person is referring to its present psychological needs in comparison to its future psychological needs. The participants were presented a photograph showing various combinations of two circles representing the present psychological needs and the future psychological needs (appendix E). The first combination indicated two circles that were next to each other, touching each other but not overlapping. The second combination indicated two circles that overlapped a little. The higher the number of the combination, the more the two circles overlapped. The seventh and last combination of these circles indicated an almost complete overlapping of the circles. This picture aimed to make clear that the less these two circles overlap, the more different and bigger is the difference between the psychological needs in the present and the desired psychological needs in the future. Participants were asked to evaluate their view of their psychological needs in the present compared to their psychological needs in the future, by choosing a number from 1 to 7 representing these combinations. An example of the questions that were asked was: 'What do you need at the moment to increase the overlap of the present and future competence?'. This measurement was mainly used to answer the overarching research question.

Data analysis

First, all the letters and the transcribed interviews were read and a descriptive summary of the eight participants was made. The descriptive summary contained demographics, interests, complaints, goals and characteristics of the participants and their living situations. To anonymize, pseudonyms for the names of the participants were used. Next, the letters were deductively coded in Atlas.ti, according to the three components of psychological needs based on the Self-Determination Theory (Table 2). The sub-codes for psychological needs are competence, autonomy and relatedness. After the first coding scheme (Table 2) was applied, the letters were deductively coded in Atlas.ti, according to the three components of well-being based on the second coding scheme (Table 4). The sub-codes for well-being are psychological well-being, social well-being and emotional well-being. In some cases, the same sentence was coded with one of the sub-codes of the psychological needs as well as with one of the sub-codes of well-being in favor of the same meaning or word/s. For example the sentence from Ali's letter: *'I am planning to start my own company so that I can be more creative.'* is coded as autonomy (sub-code of psychological needs) as well as psychological well-being, since both sub-codes include self-determination and independence in their definition, which reflects the meaning of this sentence. In other cases, the same sentence was coded with one of the sub-codes of the psychological needs as well as with one of the sub-codes of well-being in favor of different meanings or words. For example the sentence from Derya's letter: *'Enjoy this happiness of being successful in your demanding job.'* is coded as competence for being successful at meeting challenges at her work, as well as emotional well-being for the presence of positive emotions in this sentence.

Only sentences were coded that reflected aspects of psychological needs and well-being according to the coding schemes in Table 2 and Table 4. Sentences that were not coded were irrelevant and had no added value for answering the research question. These were sentences like: 'It is around 5pm.', 'It's already dark outside.' and 'My house has 2 floors.'. In total the eight letters were composed of 193 sentences. 44 sentences fell out of the coding scheme, which make 22.8 percent of the whole data.

One analytical doubt that was specified concerned the way the narrators addressed themselves. In one section of the letter the narrator was addressed with *'You'* and in another section of the same letter with *'I'*. The writer switched the point in time from the future to the present at which one letter was written. This happens in 2 letters. An example was: *'To achieve this standard of living, I will probably have to successfully complete my studies in three years.'* (4). If the writer had written from the future perspective, this sentence would be:

'To achieve this standard of living, you have to successfully complete your studies in three years.' Here, the path that is taken to achieve desired results is clear. Doubts raised about whether goals described in the present should be coded or not, since they are not fulfilled yet from the perspective of the future narrator. Since the hope that goals can be achieved increases well-being and the chance of actually achieving those goals (Bohlmeijer & Hulsbergen, 2013), the decisions was made to code these sentences as well.

Next, the interviews were transcribed and were also deductively coded in Atlas.ti, according to the three components of psychological needs based on the Self-Determination Theory (Table 2). The coding of the interviews were not parallel to the letters, because interviews were conducted based on the analysis of the letters. There were no problems in adapting the same coding scheme as in the letters. Answers to the card-sorting and the needs-continuity scale were inductively coded. For this purpose 'open coding' was used first. Then, 'axial coding' and lastly 'selective coding' were applied (Boeije, 2005).

Finally, a holistic description of two participant was reproduced, to view the stories in a whole context. The two stories that are chosen, were prototypical for the content of the other stories. These two stories were rich in data, so looking at details were also possible. Furthermore, these two letters showed the greatest similarities with the other six letters, providing an opportunity to get an idea of the other letters.

Results

A descriptive summary of the eight participants

(This part is deleted for reasons of anonymity)

General characteristics of the letters

The length of the letters varies between 277 and 787 words with an average of 470.5 words. Since the participants could choose to write the letters in three languages, 4 wrote in Farsi, 3 in German and one in English. The point in time from which the letters were written, varies from 5 to 14 years from now and in three letters no point in time was given.

In general, it seemed that writing a letter from the future perspective is difficult for the participants. Many questions were received about the instruction of the letter. One example question was: *'How long can I stay there?'* in the future. This question shows how unusual this task is for the participant and how unique this method is. The idea of being able to travel as far into the future as desired and then choose a certain moment to write a letter seems to be

difficult. Another example of what makes it difficult to write the letter was: *'[...] because the past and the present are always present and cannot be easily separated.'* However, the process also had a positive tone, since it seemed useful, interesting and an exiting experience for the participants.

The emotions that came up while writing the letters were joy, the feeling of complete control and the feeling of liberation. Other than that, only Derya felt sad during the process of writing the letter. When describing the feelings after the process of writing the letter, words like *'pride'*, *'satisfaction'*, *'freedom'*, *'motivation'* and *'hope'* have been used. For example *'Now, I have more hope and motivation to fight for my dreams.'* Only Derya felt *'uncomfortable'* afterwards. Navid and Sara were rather reflective and curious about whether their dreams would come true in the same way they dreamed about or not.

Findings in the analysis of psychological needs in the 'Letter from the Future'

Importance of psychological needs in the future. The results in this section refer to the first sub-question. Here, the relative importance that students who immigrated to Germany give to the psychological needs (competence, autonomy and relatedness) they anticipate in their future perspectives are determined from the eight letters from the future.

Table 1: *The frequency of psychological needs by each letter (N₁) and each sub-code (N₂).*

Participants	Competence	Autonomy	Relatedness	Total psychological needs (N ₁)
Emre	9	3	6	18
Derya	14	2	18	34
Ali	6	1	8	15
Lale	7	2	6	15
Arash	4	1	5	10
Navid	5	1	6	12
Sara	5	3	4	12
Nesrin	9	7	16	32
Total sub-code (N₂)	59	20	69	148

In general, psychological needs were coded 148 times in the eight letters with a mean of $M=18.5$. Here, psychological needs were mentioned most frequently in the letter of Derya ($n_1=34$) and were least mentioned by Arash ($n_1=10$).

Relatedness ($n_2=69$) comes in first place among the most frequently mentioned

psychological needs in the letters from the future. Relatedness could be identified in every letter. Table 1 shows that Sara's letter has the least reference referred to relatedness ($n_2=4$) and Derya has mentioned aspects of relatedness ($n_2=18$) most often in her letter. Relatedness is not only mentioned most frequently among the psychological needs, but is also mentioned most frequently in five letters. In three letters relatedness is mentioned second most often and there is no letter in which relatedness is mentioned the least.

Competence ($n_2=59$) comes in second place among the most frequently mentioned psychological needs in the letters from the future. Competence could also be identified in every letter. In Arash's letter, there is the least reference towards competence ($n_2=4$) and Derya has mentioned aspects of competence most often ($n_2=14$). Competence is not only the second most frequently mentioned psychological need, but is also mentioned second most often in five letters. In three letters competence is mentioned most frequently and there is no letter in which competence is mentioned the least.

Autonomy ($n_2=20$) comes in third place among the three psychological needs that are mentioned in the letters from the future. Autonomy could be identified in every of the eight letters. In the letters of Ali, Arash and Navid, there is the least reference towards autonomy ($n_2=1$) and Nesrin has mentioned aspects of autonomy most often ($n_2=7$). Autonomy is not only the least mentioned psychological need, but is also mentioned least frequent in all eight letters.

Meaning of psychological needs in the future. The results in this section refer to the second sub-question. Here, the way that the psychological needs (competence, autonomy and relatedness) are given meaning in the future perspectives of students who immigrated to Germany are determined from the eight letters from the future.

Table 2: *Coding scheme and exemplary excerpt of the coding of 'psychological needs'.*

Main-code	Sub-codes	Indication for coding	Example
Psychological needs	Competence	Achieve desired results	<i>'[...] but you have successfully completed the field you dreamed of.'</i>
		Successfully meet challenges	<i>'[...] I longed to become one of the European's most successful veterinaries. And now that I've reached this status, it is the result of a lot of effort.'</i>
		Mastery of environment	<i>'You have found the best shared flat that could suit you.'</i>

	Confidence in skills and abilities	<i>'[...] I have always believed in my goals and listened to my heart during each of these stages.'</i>
Autonomy	Actions are voluntary, self-chosen, self-endorsed, self-determine and are confirmed personally	<i>'[...] I took advantage of all my youthful opportunities and went for the things I loved, like dancing, [...].'</i>
	Being independent	<i>'You are in your STUDIO, it is small but big enough. Most importantly, it's yours.'</i>
	Give direction to your life	<i>'Try to put yourself in situations where you don't feel comfortable, because that's exactly what leads you to success.'</i>
	Experience freedom	<i>'[...] proved what big power we have combined [...].'</i>
Relatedness	Mutual respect, reliance, trust, acceptance, understanding and appreciation	<i>'My husband is a very good, kind and human man who loves me very much and does everything for me, we started our lives with love and interest and continued to be loyal to each other from then till now on, [...].'</i>
	Sense of belonging, closeness and connection	<i>'Since my sister with her family and I currently live in Canada and also because of the high number of our relatives in Toronto, my family emigrated to Canada [...].'</i>
	Desire to care or be cared by others	<i>'I always wanted to be able [...] to take care of an orphaned child and my husband and I are preparing ourselves to take the necessary steps to take care of a little kid.'</i>
	Be part of a community	<i>'Because cooking is an art and passion for us Azerbaijani. Our culture is specially characterized by hospitality.'</i>
	Maintain meaningful relationship	<i>'Today I have many friends I can count on and who love me very much and we sometimes spend time together.'</i>
	Share experiences	<i>'My husband and I also traveled to many counties together and gained a lot of shared experiences.'</i>

In general, all the definitions used to describe competence, autonomy and relatedness that were found in literature review (indication for coding), are also found in the letters and examples of those definitions can be seen in Table 2.

Competence. As competence is a key variable in achieving desired results, increasing intrinsic motivation and enhancing autonomy, in the following sections, competence is described in more details to ensure various future perspectives of competence. Also, the variation of aspects of competence that were mentioned in the letters are greater than aspects

of relatedness or autonomy.

Emre writes about achieving desired results with the words that *'[...] you have successfully completed the field you dreamed of'*. His future self has successfully met challenges as *'You have overcome all the difficulties on your way up to now.'* His future self also mastered his environment as *'You have found the best shared flat that could suit you.'* and *'[...] at least you could make a living from your little side job.'* Further, he shows confidence in his skills and abilities as he advises his present self that *'[...] you are on the right track [...]'* with what he is doing and *'[...] to be more risky. Try to put yourself in situations where you don't feel comfortable, because that's exactly what leads you to success.'*

In Derya's letter, confidence in abilities and skills prevails. The protagonist encourages her present self by appealing to her with statements like: *'Do not doubt your path and continue with all your strength.'*, *'I am not regretful of decisions that I made [...]'*, *'[...] you're gonna make it in the best way [...]'*, *'[...] be patient and wait [...]'* and *'[...] never lose your way'*. The encouraging attitude about achieving desired results is described as *'You wanted to see your rise, you did it.'* and *'[...] to become the one who you wanted to be [...]'*.

Ali: When the protagonist talks about competences, these are instructions on how to achieve a desired future. His protocol on what competencies he needs to acquire in the near future *'[...] to realize this good future'* includes: *'[...] believe that with effort the goals can still be reached.'*, *'[...] disregard distractions and concentrate intensively on my studies.'* and *'With hard work and motivation [...]'*.

Lale: This protagonist also gives instructions on how to achieve a desired future while writing about competences that she wants to acquire or improve. She assumes that she needs *'[...] motivation, discipline and self-confidence.'*, *'Optimal time management between my studies and my many side jobs [...]'*, *'[...] to integrate myself more and better in the company [...]'* and needs to build *'A healthy environment [...]'*.

Arash: The protagonist is confident in his skills and abilities due to the statement that he has enough knowledge to provide a *'[...] new and great idea to improve the company's mobility in the unmanned vehicle segment and in their non-person driving section'*, what promotes innovation. He also has *'[...] all the tools you need [...]'* to achieve the desired future *'With more effort and focus [...]'*.

Navid: The protagonist masters his environment by living at a place where *'[...] work and money and security.'* are available unexceptionally. Also, *'Urban facilities are available at their highest.'* He overcomes challenges through letting *'[...] our minds and thoughts go beyond the boundaries of what others are saying, doing, and thinking.'*

Sara: The protagonist met her challenges successfully, through *'effort'*: *'[...] I longed to become one of the Europe's most successful veterinaries. And now that I've reached this status, it is the result of a lot of effort.'* She also achieved desired results by *'perfectionism'*: *'In Iranian culture, the sense of perfectionism is very valuable, and I have tried all my life to achieve the best and highest levels of science and career.'* Her confidence in her skills become clear through *'believing in herself'*: *'[...] I have always believed in my goals and listened to my heart during each of these stages.'* and *'showing no regrets'*: *'[...] you will never regret it [...]'* to achieve desired results of feeling *'satisfaction'*, *'contentment'* and *'comfort'*.

Nesrin: The protagonist is reaching desired results by working hard in the architecture business *'And at work I always tried to be up to date.'* Further, *'I schedule my live [...]'* helps her to master challenges and *'[...] manage my life.'*

Autonomy. Overall, the eight letters display autonomy as being an independent individual by accentuating self-employed and financial independence. In the future perspectives, self-employment is imagined as: *'You are in your STUDIO, it is small but big enough. Most importantly, it's yours', 'I am planning to start my own company so that I can be more creative.'* and *'I am self-employed and my income is good.'* Financial independence is imagined as: *'[...] I have been able to support my family financially for several years now [...]'*.

Furthermore, future perspectives of autonomy show self-chosen behaviors: *'I know that my current situation is due to the fact that I was following my heart, otherwise I would have gone into the medical field at the first place and not the veterinary field.'*, *'I always wanted to have a photo camera and pursue photography professionally. Today I have a professional photo camera and a room full of photos that I took [...]'* and *'[...] went for the things I loved, like dancing, [...]'*. Future, perspectives of autonomy show signs of giving direction to the one's life: *'Try to put yourself in situations where you don't feel comfortable, because that's exactly what leads you to success.'* and *'[...] my husband and I are preparing ourselves to take the necessary steps to take care of a little kid.'*. Least, future perspectives of autonomy is based on experiencing freedom: *'[...] we reached all of this privileges by working together with effort and proved what big power we have combined [...]'*.

Relatedness. In summary, the letters display relatedness as a positive relationship between the protagonist and their families *'We will financially support our families abroad.'*, friends *'You have met the best people who have accepted you [...]'*, life partners *'[...] we started our lives with love and interest [...]'* and children *'With having our kids in our lives,*

our problems seem to have disappeared.'. Out of the eight letters, there is only Derya's letter, that also shows negative attitudes towards relationships: *'[...]it has taken years for you to learn not to trust anybody [...]*'.

Furthermore, the future perspectives of relatedness are about the positive emotions that these relationships trigger *'I was so happy that it looked like the world was given to me, because with that friend I had the best and happiest moments of my life.'*, the feelings of for example pride and gratitude that these relationships illustrate *'I have to be grateful for my love, who has always been a support for me [...]*', and the nature of these relationships, for example trustworthiness: *'A healthy environment, consisting of trustworthy people who are always at your side, is also very important.'* In addition, Emre's future perspective of relatedness includes being accepted by his friends *'[...] for what you really are now, but also for what you could become in the best case.'* And, Nesrin's future perspective of relatedness includes a relationship based on love, interest and loyalty.

Findings in the analysis of well-being in the 'Letter from the Future'

Importance of well-being in the future. The results in this section refer to the third sub-question. Here, the relative importance that students who immigrated to Germany give to the well-being (psychological, emotional and social) they anticipate in their future perspectives are determined from the eight letters from the future.

Table 3: *The frequency of well-being by each letter (N₁) and each sub-code (N₂).*

Participants	Psychological well-being	Social well-being	Emotional well-being	Total well-being (N₁)
Emre	12	3	1	16
Derya	17	9	6	32
Ali	15	2	2	19
Lale	11	4	0	15
Arash	7	3	2	12
Navid	4	3	10	17
Sara	9	1	5	15
Nesrin	15	2	3	20
Total sub-code (N₂)	90	26	28	146

In general, well-being is coded 146 times in the eight letters with a mean of $M=18,25$. Here, well-being is mentioned most frequently in the letter of Derya ($n_1=32$) and is least

mentioned by Arash (n1=12). Also, the total numbers of emotional well-being (n=28) and social well-being (n=26) do not have a large difference compared to the total number of psychological well-being (n=90).

In total, psychological well-being (n2=90) is most frequently coded compared to the other two categories of well-being. Also, psychological well-being appears most frequently in each of the eight letters compared to the other two categories of well-being. In Navid's letter, there is the least reference towards psychological well-being (n2=4) and Derya has mentioned aspects of psychological well-being most often (n2=17).

Emotional well-being (n2=28) is the second most common coded category of well-being compared to the other two categories of well-being. In Lale's letter, no aspects of emotional well-being could be found (n2=0) and Navid has mentioned aspects of emotional well-being most often (n2=10).

Social well-being (n2=26) is the least common coded in the letters. In Sara's letter, there is the least reference towards social well-being (n2=1) and Derya has mentioned aspects of social well-being most often (n2=9). Even though social well-being is generally speaking the least mentioned category of well-being, yet it is mentioned second most frequently in five of the eight letters.

Meaning of well-being in the future. The results in this section refer to the forth sub-question. Here, the way that the well-being (psychological, emotional and social) are given meaning in the future perspectives of students who immigrated to Germany are determined from the eight letters from the future.

Table 4: *Coding scheme and exemplary excerpt of the coding of 'well-being'.*

Main-code	Sub-codes	Indication for coding	Example
Well-being	Psychological well-being	Self-acceptance	<i>'[...] I may not be great at all languages, but at least I am able to have a normal conversation and am learning a few sentences everyday.'</i>
		Positive relationships with others	<i>'You have met the best people who have accepted you not only for what you really are now, but also for what you could become in the best case.'</i>
		Autonomy	<i>'I am self-employed and my income is good.'</i>
		Environmental mastery	<i>'[...] but at least you could make a living from your little side job.'</i>

	Purpose in life	<i>'I am planning to start my own company so that I can be more creative.'</i>
	Personal growth	<i>'Because I think a person can grow through traveling and gaining experiences, and these experiences are very enjoyable for me.'</i>
Social well-being	Social coherence	<i>'You all plan to be really drunk by tomorrow.'</i>
	Actualization	<i>'What you're not worried about here is work and money and security. Urban facilities are available at their highest. You might say then that you live in paradise!'</i>
	Integration	<i>'In Iranian culture, the sense of perfectionism is very valuable, and I have tried all my life to achieve the best and highest levels of science and career.'</i>
	Acceptance	<i>'The people who live here are good and honest people, [...]'</i>
	Contribution	<i>'Do good things, give love to everyone as long as you are alive and you have energy.'</i>
Emotional well-being	Presence of positive affect	<i>'Now I enjoy everything and live in happiness.'</i>
	Absence of negative affect	<i>'I owe my peace today to your sacrifice on those days'</i>
	Perceived satisfaction with life	<i>'I am always grateful to those who helped me through this meandering path.'</i>

Psychological well-being. Overall, statements of psychological well-being overlap with the statements of psychological needs. Regarding 'self-acceptance' (Table 4), future perspectives of immigrant students show positive attitudes towards themselves and the acceptance of positive and negative aspects of themselves: *'[...] I may not be great at all languages, but at least I am able to have a normal conversation, and I am learning a few sentences every day.'*, *'So be yourself because that will be the most beautiful thing in your life.'* and *'I am very proud of the goals I have achieved so far.'* Regarding 'positive relationships with others', future perspectives show warm, satisfying and trusting relationships toward others: *'Your lovely sister is supporting you as always.'* and *'Today I have many friends I can count on and who love me very much [...].'* Regarding 'autonomy', future perspectives show independent and self-determining statements as follows: *'I am self-employed and my income is good.'* and *'I am glad that I decided to leave my family behind to follow my dreams and make a career.'* Regarding 'environmental mastery', future perspectives show the ability of managing their personal environment: *'[...] but at least you could make a living from your*

little side job., *'You have found the best shared flat that could suit you.'* and *'We have chosen to live in a rural area, however not far from work, which is very convenient.'* Regarding 'purpose in life' future perspectives show that immigrant students has goals and senses of directedness in life: *'I am planning to start my own company so that I can be more creative'*, *'You now need to finish your master's subjects and thesis with a good grade and graduate.'* and *'I will be researching on new technologies for car engines [...]'*. Regarding 'personal growth' future perspectives show aspects of growing and expanding of immigrant students, as they mention continued development: *'Because I think a person can grow through traveling and gaining experiences, and these experiences are very enjoyable for me.'* and *'You wanted to see your rise, you did it.'*

Social well-being. Overall, aspects of social well-being is most frequently overlapping with aspects of relatedness. However, statements of social well-being overlaps with all the statements of psychological needs. Regarding 'social coherence' (Table 4), future perspectives of immigrant students demonstrates that the social world is understandable and predictable: *'With friendship and connection to successful people, you can increase your desire to reach an attractive future sooner.'* and *'You all plan to be really drunk by tomorrow.'* Regarding 'actualization', future perspectives points out that the society is developing in a positive direction: *'What you're not worried about here is work and money and security. Urban facilities are available at their highest. You might say then that you live in paradise!'*. Regarding 'integration', future perspectives show the feeling of being part of the community as follows: *'In Iranian culture, the sense of perfectionism is very valuable, and I have tried all my life to achieve the best and highest levels of science and career.'*, *'Because cooking is an art and passion for us Azerbaijani. Our culture is specially characterized by hospitality.'* and *'[...] intend to integrate myself more and better in the company [...]'*. Regarding 'acceptance', future perspectives show positive attitudes towards others: *'The people who live here are good and honest people, [...]'* and *'I am proud of my husband and I enjoy spending time with him.'*. Regarding 'contribution', future perspectives show that the protagonists desire to contribute to society in a valuable way: *'Do good things, give love to everyone as long as you are alive and you have energy.'* and *'[...] to take care of an orphaned child and my husband and I are preparing ourselves to take the necessary steps to take care of a little kid.'*

Emotional well-being. Overall, statements of emotional well-being also overlap with the statements of psychological needs. Regarding the 'presence of positive affect' (Table 4), positive emotions can be found in the future perspectives of immigrant students as follows: *'Now I enjoy everything and live in happiness.'*, *'[...] you still win because you feel*

satisfaction, contentment and comfort.' and *'Our son is happy, and we are proud of him [...]*'. As shown in those examples, not all positive emotions emanate from the protagonist. Immigrant students also describe positive emotions of the people in their surrounding. Regarding the 'absence of negative affect', it is recognized that negativity has rather no place in the future perspectives and belongs to the past: *'I owe my peace today to your sacrifice on those days'* and *'It was worth it in terms of the anxiety at the beginning.'* Regarding 'perceived satisfaction with life', future perspectives show gratitude to life as follows: *'I am always grateful to those who helped me through this meandering path.'* and *'I am extremely grateful to my family for the financial and emotional support they have given me [...]*'.

General characteristics of the interviews

The shortest interview lasted 28 minutes and the longest 54 minutes, with an average length of 36 minutes. Here, the focus was on psychological needs. Each participant was able to talk about their psychological needs. The interviews contained more data in comparison to the letters, leaving more content to analyze. Since there were three languages to choose from to conduct the interviews, participants were more likely to communicate in a language that suits them best. There were no communication difficulties. The general tone of the interviews were positive. In comparison to the letters, the interviewee had more negative thoughts, since in the letters, mostly all wishes and goals already came true, but in the interviews there were also questions about why things don't go the way participants would like them to go.

Findings in the analysis of psychological needs in the interviews

Importance of psychological needs in the present. The results in this section refer to the fifth sub-question. Here, the relative importance that students who immigrated to Germany give to the psychological needs (competence, autonomy and relatedness) they currently experience in their present perspectives are determined from the eight interviews. The results are driven from the importance of psychological needs in different areas of live and card-sorting.

Table 5: The importance of competence, autonomy and relatedness in different areas of live.

Areas of live	Competence	Autonomy	Relatedness	N
Professional life	2	4	2	8
Personal life	2	1	3	6
Professional and personal life	4	3	3	10

Table 5 shows the occurrence of psychological needs competence, autonomy and relatedness in the areas of professional and personal life. Each participant had to choose, if competence, autonomy and relatedness each are more important in professional life, in personal life or in both. It is noticeable that the importance of psychological needs in both areas of life (n=10) is more frequent than only in one area of life. Related to competence (n=4), which is most frequent in the area professional and personal life, the arguments are: *'I want to prove my abilities in the society. This applies to both my private and professional life'*. And *'you should always have confidence in yourself. And that is my power, which always pushes me forward, regardless of the area in life'*. Related to autonomy (n=3) the arguments are: *'To be able to choose this freely and be self-determined would motivate me in every area of life'*. And *'In my professional life, it would mean that I would be able to choose my own working hours and clients, and that means freedom to me. And in my private life I would not need another person to survive, but I would spend time with one person voluntarily'*. Related to relatedness (n=3) the argument is: *'Having a network of colleagues in different fields is necessary to be successful in my profession. It is also very interesting to have people in your circle of friends with whom you can talk for hours about common topics that inspire and strengthen you'*.

The importance of psychological needs in the professional life (n=8) is the second most common. Related to competence (n=2) the arguments are: *'there are still many requirements that I have to meet in order to get into my dream job and become successful in it. In my private life I already have found the love of my life and I have the feeling that we can support each other'*. And *'Without competences in my professional life I would be disoriented and clueless and would freeze'*. Related to autonomy (n=4), which is most frequent in the area professional life, the arguments are: *'I am someone who likes to work in a team but in order to get my ideas going I sometimes have to make some decisions independently, without being influenced by a superior or a co-worker, so that I have some freedom to be creative'*. And *'it is important to me to only carry out activities that I think are appropriate in my professional life. For example, to design for certain customers that I have chosen myself. To work as a freelancer would be ideal for me.'* Related to relatedness (n=2) the argument are: without relatedness at the workplace *'I'm afraid that I'll be left out otherwise'*. And because *'I don't know many people in my field who would share their experiences with me and would make me feel like we belong to one group'*.

The importance of psychological needs in the personal life (n=6) appears lowest. Related to competence (n=2) the argument is: *'I am a perfectionist when it comes to*

relationships. That's why I am not happy in my relationships and end up braking up with my partners. I feel uncomfortable, and I am unsure and think that competence in this matter would help me'. Related to autonomy (n=1) the argument is: 'I need to strengthen my autonomy, so that I can make decisions for my private life decisively and independently, behind which I can stand to feel happy again'. Related to relatedness (n=3) the argument is: 'Through family you get the most motivation to overcome efforts in life'.

Card-sorting. Results of the card-sorting show that among the 8 respondents, competence was most frequently mentioned on the first place by 4 participant and is thus the most important psychological need for those 4 participants. Autonomy and relatedness were mentioned on the first place by 2 participants each. On the second place, and thus second most important psychological need, autonomy was mentioned most frequently with 5 mentions. Competence was mentioned 2 times on the second place and therefore relatedness 1 time. On the third place and therefore least important psychological need for the 8 participants, relatedness was mentioned 5 times. Competence was mentioned 2 times and therefore autonomy only 1 time.

In general, participants mentioned that the three psychological needs are existing in a relationship towards each other and one can not be happy and would not be able to reach a desire future, if one of those psychological needs would not exist in one's life. Here, competence and autonomy are mainly mentioned to be interacting with each other, so that one can not exist without the other. Referred to the positioning of these two needs, in seven of the eight cases, competence and autonomy follow each other. Relatedness on the other hand is being looked at as rather naturally shaping, as in friendships that are build unconsciously and unconventional. They also claim that you can follow your path without fulfilling the need of relatedness, but you will not be happy.

Meaning of psychological needs in the present. The results in this section refer to the sixth sub-question. Here, the way that the psychological needs (competence, autonomy and relatedness) are given meaning in the present perspectives of students who immigrated to Germany are determined from the eight interviews.

Competence. Competence is described in this section in a deeper manner based on interviews of the participants about their letters. Emre describes that his future self has overcomes difficulties by *'building a professional network', 'finding suitable and qualified employees', 'gaining a lot of experience and always motivating myself'*. The question of what motivating looks like, he answers with: *'I would say to myself that I do what I really like and*

have chosen for myself, so that I never forget that I can be free in what I do'. The following question about what freedom looks like to him in the future, he answers with: 'That I can be creative, that I can switch off my head, and I can only do that if I don't have to worry about money or status'. He further describes risk-taking propensity as having 'more experience in the end. Or rather, when I am ready to make a mistake and am confronted with new surroundings, only then do I have the opportunity to gain new experiences and to reorient myself, in order to for example make the right decisions'.

Derya describes that her future self has gained confidence in her skills and abilities through having *'studied a lot and I gained a lot of experience at a part-time job beside my study', 'ignored all the anti feminism thoughts, which say that just men can work in the industry or as a manager', 'self-confidence' and by 'becoming powerful'. The question of what the future looks like when she is powerful, she answers with: 'I have increased and strengthened my abilities continuously ... I have stopped relying on my partners and acted independently and I have taken care of myself. And also the fact that my family is not near me has not burdened me anymore'. Further, she mentioned that her future-self achieved desired results by having 'a very huge motivation in me and I didn't like to keep staying in the same situation'. What motivated her was the desire to 'work in one of the best companies in Germany and I didn't like to study just for money but to become a useful human in this world'.*

Ali describes that for him, effort means that *'with good planning, I had more time to spend on studying, even though I worked part-time'. 'Good planning means that I had enough time for my studies and also I could rest from working ... My working hours did not hinder my studying hours.'* and *'I must also say that the planning was not always in my hands. My employer assigned me the shifts where he needed me the most, but I tried to be against it as often as possible and I demanded for the students' rights for us to be able to work on weekends ... and also no night shifts'. Further, his future-self disregarded distractions like 'going out with friends', 'bad thoughts', 'sadness' and 'binge-watching' by giving 'up some things. I had less unnecessary expenses, so I had to work less and had more time to study. I increased my self-control so that I didn't waste any more unnecessary time'. 'I have increased my self-control by always keeping my goals in mind'. Least, 'I got motivated to work hard by the thought of enabling my family a better life'.*

Lale describes competence as: *'I was motivated by my environment, which consisted of friends and fellow students, who helped me during my exam phases. They gave me a lot of courage, which helped me to gain self-confidence'. 'I was able to achieve discipline through a daily routine, so that no time could be wasted'. 'Since I was dependent on a part-time job, it*

was necessary to plan my time and stick to this plan so that I could work as well as go to lectures and keep up with my learning schedule' to ensure optimal time management 'as foreign students have a certain time window to finish their studies'. 'In order to integrate myself, I have overcome the language difficulties by increasing the contact with German students'. Further, integration is described as: 'At work I felt comfortable in my department, because I got along well with my colleagues, so that I almost felt at home, as if we were a family. This made the daily work routine easier. You work more productively, achieve good results and even develop personally'. Also, she describes that this comfort required mutual acceptance and equality. Her future-self describes the mastery of environment by: 'selecting and caring for good friends, family members and acquaintances who are there for me in good and bad times. Especially friends, who help me in word and deed'.

Arash describes being innovative as having *'new ideas', 'being able to implement and realize own ideas'* and *'being someone who can change something essential for the better'*. *'Only then I can enjoy my work and have the feeling that I am a successful engineer'*. The tools he has which helps him to achieve his desired results are *'my skills and people I have in my life'*. Also, *'I am smart', 'I believe in myself'* and *'I have enough motivation'*. *'The support of my fiancée and family motivates me even more'*. The participant describes being effortful as: *'I have to complete my studies as quickly as possible and with an excellent grade, because this is the only way I can hope to be accepted at the Bosch company'*.

Navid describes his desired environment as a place, where *'all primary needs are at your disposal. For example, food, desired job, security, medical care, connection to nature'*. *'One has then enough time to live and enjoy the free time. Respect and freedom will then also be given'*. Further, his future-self overcome difficulties by *'freeing yourself mentally from what others think about you or the way you live'*. *'You save yourself by braking those barriers, if those do not make you happy'* and *'if you are not safe and happy within those boundaries, it would feel like you are in prison'*.

Sara describes the term 'effort' that was analyzed earlier as a perception of competence, as being as hardworking as possible when it comes to studying, *'by keeping all my lectures and deadlines, even if I sometimes didn't feel well or didn't feel like it'*. To the question *'Do you feel that something related to this need is missing in your current life?'* she answers: *'Yes, sometimes I lack the control over emerging difficulties and the ability to solve problems that are unknown to me or ... that I cannot manage'*. Next, the question then arose: *'What do you need to gain control and to solve problems'*. The answer was: *'I believe that I need to gain more experience and knowledge so that I can be much more competent in the*

future'. Next, the question arose: 'What do you mean by experience and knowledge?' and the answer was *'that I become more self-confident and sociable, so that I can get in contact with more German fellow students. For that I also have to learn the German language better'*.

Nesrin describes the work of an architect as challenging, *'as new ideas are always needed, yet has to contain functional lines to actually be able to build a house'*. *'Architecture is namely our whole life and one must understand well and precisely how the new thoughts and ideas can become real. Therefore, I have to stay in my workplace long hours to be productive'*. *'In Architecture you have to be up to date to be successful. You have to learn about new materials, new constructing methods and designing tools'*. Further, scheduling life means to her that *'I always want to have a good plan for my whole life. So I can always put my study tasks in priority and know if I can plan extra time for other things'* like *'sports and my health, what I eat and my beauty'*.

Autonomy. Autonomy is perceived by the Sara as the absence of *'force'* and the presence of *'freedom'*. When asked what freedom means to her, she answers that *'freedom gives me the opportunity to be in contact with animals, treating animals and driving away their pain brings me joy.'*

Further, analysis shows, that present perspectives of autonomy is associated with the opportunity to break new ground *'If you have your own company, you can choose the focus of your work yourself and you can try out new approaches for design and production ... and be innovative.'*, to grow *'Being independent makes you grow.'*, to gain new experiences *'Traveling to other countries and immigration itself allows you to compare new experiences with your own knowledge.'*, to use your time effectively *'In order to remain independent, I have to practice optimal time management'*, to have a better lifestyle *'In Germany laws are actually obeyed and I can choose my own lifestyle without being suppressed.'* and to have an environment where solutions can be sought *'The STUDIO is a place for problem solving and group work'*.

Relatedness. Referred to relatedness, Emre's present perspective of *'acceptance'* is the acknowledgment of bad as well as good traits of a person. He also mentioned that he is encouraged to improve if his goals and wishes for the future are accepted by his friends.

Derya describes her present negative perspective on relatedness with the experience of being cheated on multiple times. *'Since then I always feel weak when it comes to liking my looks and feeling beautiful'*, which makes her sad and angry. That's why she constantly is thinking about ways to improve her looks, *'while I should focus on my studies instead'*. She wants to be able to trust a man again in the future.

Ali's present perspective on relatedness is the cohesion of his family in good times and bad, emotional support from the family, support in making decisions and mutual financial support. *'This is the greatest support for me to achieve my goals.'*

Navid's present perspective on relatedness is described as the opportunity *'To be able to laugh together while the hearts are loving and hate-free ... that you are able to laugh out loud and from the heart without thinking about consequences.'* and *'When two has basically nothing but enough to be happy and laugh.'*

Relatedness is perceived by Sara as *'care'* when asking about the relationship to her son in more details and what he means to her. Further, in the interview, she mentions that *'I do my best to raise him responsibly ... He means to me like my heritage in the world, not in the physical sense, but in the real sense. I mean ... what I teach him and the way I raise him will be reflected in the environment in the future. He will have a great impact on his surrounding world. So he means to me as much as a school where I have to teach my student, my son, the most important values.'*

Relatedness is perceived by Nesrin as *'having courage'*. She mentions that love is not enough in today's reality to maintain a good relationship. In a relationship, *'You have to be brave and loyal and solve your problems together ... Together you are strong and can overcome the fear of new situations'*. She describes fear as an obstacle that stands between you and your goals. *'To reach my goals means freedom and peace to me'*.

Further, analysis shows, that relatedness is more often perceived as social support and motivation that follows in result of those supportive relationships. Also, relatedness is several times perceived as acceptance, peace, trust, cohesion, happiness and courage. Also, Lale's and Arash's remarks do not show any further complementary view on relatedness.

Comparison of psychological needs in the present and the future. The results in this section refer to the overarching research question. The findings in the analysis of the needs-continuity scale show the similarities and differences in the perception of the existence of the psychological needs (competence, autonomy and relatedness) that students who immigrated to Germany experience in their present and expect in their future.

Table 6: *The overlap of the sub-codes of 'psychological needs' in the present and in the future between 1-7.*

Sub-codes in the present and in the future	Emre	Derya	Ali	Lale	Arash	Navid	Sara	Nesrin	Mean
Competence present/ future	4	6	1	5	4	5	3	5	4.13
Autonomy present/ future	6	5	2	6	3	4	6	4	4.5
Relatedness present/ future	3	2	1	4	6	3	4	3	3.25

Table 6 shows the overlap between competence, autonomy and relatedness in the present and in the future. The higher the number, the greater the overlap and the more likely that psychological need is successfully met in the present and the closer one is to the ideal perspective of the future in relation to their psychological needs.

In general, autonomy has the biggest overlap ($M=4.5$) with the future desire of being an independent person among those 8 participants. In comparison to the other two psychological needs, relatedness has the lowest overlap ($M=3.25$) with the needs that are desired to be met in the future in terms of relatedness. The general overlap of competences in the present and desired competences in the future is $M=4.13$ among all participants.

With regard to competence, Derya has the highest overlap ($n=6$) between her present and future abilities and Ali has the lowest overlap ($n=1$). With regard to autonomy, Emre, Lale and Sara have the highest overlap ($n=6$) between their present and future abilities and Ali has the lowest overlap ($n=2$). With regard to relatedness, Arash has the highest overlap ($n=6$) between his present and future abilities and Ali has the lowest overlap ($n=1$).

A holistic description of two participants

(This part is deleted for reasons of anonymity)

Conclusion and discussion

General findings

The purpose of the current study was on the one hand to investigate the importance of the psychological needs in the present and future perspective of immigrant students as well as the importance of well-being in the future perspectives of immigrant students. On the other hand to investigate how the psychological needs are given meaning in the present and future perspectives of immigrant students as well as how well-being becomes visible in those future

perspectives. Generally speaking, in the future perspectives, relatedness is most important to immigrant students and autonomy is least important. In the present perspectives, competence is most important to immigrant students and relatedness is least important. In the future perspectives psychological well-being is most important to immigrant students and social and emotional well-being are rather equally important. In the future perspectives examples for competence are: self-confidence and progress; for autonomy are: self-employment and financial independence; and for relatedness are: pride and loyalty. In the present perspectives examples for competence are: being consequent and productive; for autonomy are: being innovative and showing growth; and for relatedness are: courage and peace. In the future perspectives examples for psychological well-being are: being proud and goal setting; for social well-being are: society is understandable and being part of a community; and for emotional well-being are: joy and contentment.

The following section is referred to the first sub-question. The relative importance of the psychological needs in the future perspectives of immigrant students is as follows: relatedness is mentioned to be most important. The second most important psychological need is competence and the least important psychological need is autonomy. One explanation for the relative high importance of relatedness in the future perspectives compared to competence and autonomy could be that immigrant students assume that competence and autonomy are more likely to be necessary in order to achieve a desired future at all. Hence, the desired future has been achieved and the psychological needs competence and autonomy has been satisfied, then relatedness is being considered and becomes more important in order to successfully satisfy all psychological needs. This goes in line with previous research that implies that cultural capital is not a requirement for student mobility but rather is improved and developed through the course of immigration (Raghuram, 2013). Another explanation could be that the dominant language of the destination country is no longer perceived as a barrier in the future. In previous literature, linguistic challenges are mentioned as post-immigration difficulties of student immigrants (Wulz & Rainer, 2015) that could hinder making contact with other fellow students or the social surrounding. Mastery of the dominant language facilitates interpersonal contact and understanding of the local population and people from other countries living in the same environment. From the perspective of immigrant students, the ability to overcome the language barrier in the future could increase the chance of fulfilling relatedness in the future, because communication is a building block for human interaction.

The following section is referred to the fifth sub-question. The relative importance of

the psychological needs in the present perspectives of immigrant students is as follows: competence is mentioned to be most important. The second most important psychological need is autonomy and the least important psychological need is relatedness. An explanation for the relative high importance of competence in the present perspectives compared to autonomy and relatedness could be the phase in the life-course of these immigrant students. The primary goal of students may be to complete their studies successfully in order to increase their chances of employability, wage and the likelihood to receive citizenship. For this purpose, the course of study requires certain skills and knowledge that students must acquire. Hence, it is understandable that competence is given priority since out of all typologies of immigration, skills and knowledge is most easily associated with student immigration (Raghuram, 2013). As students in a foreign country initially stand on their own and rather have to manage their post-immigration life individually, autonomy is mentioned to be second important psychological need. The relation between competence and autonomy in the present perspectives of immigrant students is similar to the fact that being confident in one's competencies can enhance autonomy (Bohlmeijer & Hulsbergen, 2013). Relatedness is also important during this time, as in the current study, social support is associated with motivation and motivation in turn has a positive effect on competence and autonomy. However, the lack of relatedness does not necessarily seem to prevent the main goals of immigrant students. As relatedness requires mastery of language to be able to relate and connect to others and post-immigration is associated with linguistic difficulties (Wulz & Rainer, 2015), the inconspicuousness of relatedness in the present perspectives becomes clear.

The following section is referred to the third sub-question. The relative importance of well-being in the future perspectives of immigrant students is as follows: psychological well-being is defined to be most important. The importance of social well-being and emotional well-being is similar to each other. This could be due to the fact, that the definition of psychological well-being has similarities with the definitions of all three psychological needs. Mutual definitions are: positive relationships with others (Table 4) and relatedness (Table 2), autonomy (Table 4) and autonomy (Table 2); and environmental mastery (Table 4) and competence (Table 2). Therefore, there is an overlap in coding, resulting in the highest frequency for psychological well-being, which in turn is indicating psychological well-being as most important. Another explanation could be that psychological well-being is referring to the optimal functioning of individuals in their private life as they strive to realize their potentials (Ryff, 1989). So, immigrant students might rather concentrate on themselves, their personal functioning and self-management than paying attention to functioning in their social

life (social well-being) or feelings of happiness (emotional well-being). Another explanation of the importance of psychological well-being could be based on the narrative approach, as in narrative futuring, immigrant students are supposed to imagine their possible self. Again the individual and his/her identity comes to light (Murray & Sools, 2014). An argumentation for the lower importance of emotional well-being could be that flourishing is combined of six units of eudaimonia (psychological and social well-being) and one unit of hedonia (emotional well-being) (Keyes, 2002; Schotanus-Dijkstra et al., 2017). This weighting indicates that emotional well-being contributes less to flourishing and that could be why there is less coding of emotional well-being.

The following section is referred to the second sub-question. The meaning of the psychological needs in the future perspectives of immigrant students are as follows:

Competence. The meaning of competence in the future perspectives of immigrant students is composed of four categories, as known from previous research by Deci et al. (2001) and Wehmeyer et al. (2017), and reads as follows: achieving desired results, successfully meeting challenges, mastering own environment and confidence in skills and abilities. The following keywords describing competence all fall under those four categories: being successful, finding a suitable environment to live in, make a living, being on the right track, being risk-taking, not being regretful, being self-confident, being patient, development, progress, being effortful, disregard distractions, being able to focus on study, working hard, being motivated, being self-disciplined, conducting optimal time-management, integrating, being innovative, ignoring the opinion of others, being grateful, perfectionism, satisfaction, contentment, comfort and being up to date.

Autonomy. The meaning of autonomy in the future perspectives of immigrant students is composed of four categories, as known from previous research by Deci et al. (2001), Bohlmeijer & Hulsbergen (2013) and Wehmeyer et al. (2017), and reads as follows: voluntary actions that are self-chosen, independence, giving direction to your life and experiencing freedom. The following keywords all fall under those four categories: self-employment, financial independence, owning a workplace, following wishes and desires, having privileges and being powerful.

Relatedness. The meaning of relatedness in the future perspectives of immigrant students is composed of six categories, as known from previous research by Deci et al. (2001), Bohlmeijer & Hulsbergen (2013) and Wehmeyer et al. (2017), and reads as follows: mutual respect, reliance, trust, acceptance, understanding and appreciation; a sense of

belonging, closeness and connection; the desire to care or be cared by others; desire to be part of a community; maintaining meaningful relationships; and share experiences. The following keywords all fall under those six categories: positive relations to others, pride, loyalty, love and interest.

Since the meanings of the psychological needs in the future perspectives were selected according to the coding scheme (Table 2), there are no new categories in this section to describe psychological needs comparing to previous research. But the keywords that fall under these categories are unique because they have not yet been researched in this context. That means that no study has yet focused on the description of psychological needs from the future perspectives of immigrant students living in Germany.

The following section is referred to the sixth sub-question. The meaning of the psychological needs in the present perspectives of immigrant students are as follows:

Competence. The meaning of competence from the present perspective of immigrant students is described by the following keywords: making new experiences, building a professional network, ignoring negative thoughts, being creative, increasing and strengthening skills and abilities, focusing on tasks, gaining self-control, increasing courage, leading a routine lifestyle, being consequent, performing self-care, ignoring anti-feminism, not relying on others, being useful, planning, skip unnecessary expenses, being productive, problem solving skills, being practical, setting priorities and being hopeful.

Autonomy. The meaning of autonomy from the present perspective of immigrant students is described by the following keywords: choosing working hours and clients, freedom, the absence of force, breaking new ground, choosing the focus of work to try new approaches, being innovative, showing growth, making new experiences, conducting optimal time-management, living a better lifestyle and having solution focused behavior.

Relatedness. The meaning of relatedness from the present perspective of immigrant students is described by the following keywords: inspiration, motivation, encouragement for improvement, cohesion in good and bad times, responsibility of impact on surrounding, courage, motivation and peace.

The keywords describing the psychological needs in this section are unique because they have not yet been researched in this context. That means that no study has yet focused on the description of psychological needs from the present perspectives of immigrant students living in Germany.

The following section is referred to the forth sub-question. Immigrant students' imagination of the future include aspects of psychological, emotional and social well-being. This goes in line with the findings of Markus & Nurius (1986), who state that the concept of possible selves is associated with well-being. The meaning of well-being in the future perspectives of immigrant students is composed of several categories, as known from previous research by Keyes (2002), such as psychological well-being (self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life and personal growth), social well-being (social coherence, actualization, integration, acceptance and contribution) and emotional well-being (presence of positive affect, absence of negative affect and perceived satisfaction with life).

The meaning of well-being in the future perspectives all fall under those above mentioned categories. Here, psychological well-being is described by the following keywords: positive attitude towards yourself, even if you are not perfect; being proud, support, self-determining, self-employed, making a career and goal setting. Social well-being is described by the following keywords: society is understandable, society is predictable, society is developing in positive direction, not worrying about: work, money, security and urban facilities, being part of a community, having a positive attitude towards others and contribute to society in a valuable way. Emotional well-being is described by the following keywords: joy, happiness, satisfaction, contentment, comfort, proudness and gratitude.

Since the meanings of well-being in the future perspectives were selected according to the coding scheme (Table 4), there are no new categories in this section to describe well-being comparing to previous research. But the keywords describing well-being are unique because they have not yet been researched in this context. That means that no study has yet focused on the description of well-being from the future perspectives of immigrant students living in Germany.

The following section is referred to the overarching research question. Findings of the needs-continuity scale show clear desire of improvement in competence, autonomy and relatedness. The greater the difference between already fulfilled psychological needs and future psychological needs, the greater the importance of meeting that need. Here, to immigrant students, the improvement of relatedness is most important and that of autonomy is least important. Similarities become clear between the present and future perspectives of competence and autonomy. This could be due to the fact that being competent can enhance autonomy. For example, if my skills and abilities are met, I can act independently. In

comparison to the other two psychological needs, the analysis of relatedness has revealed far less defining aspects. This could be due to the fact that relatedness is described and categorized very well in the literature. Further, statements of well-being most frequently overlap with statements of psychological needs. This signifies, that imagining being competent, independent and having positive relationships is somehow intertwined with well-being. This result is consistent with the findings of Wehmeyer et al. (2017), who found that the fulfillment of needs is associated with the enhancement of well-being.

Present and future perspectives of the participant of the current study add to the description of the psychological needs, so there is greater knowledge about psychological needs that could be taken into account while enhancing well-being. The practical relevance of those findings is, that immigrants students could become conscious about what they need to consider and improve, to enhance their well-being. For example, it is beneficial to know that competence and autonomy should be improved simultaneously, as one is mentioned to be not existing without the other. Also, authorities could use these findings to determine where immigrant students need help with, as they are important for the development of the country. Findings of the current study can be useful to overcome post-immigration difficulties, not only for immigrant students, but also for other typologies of immigration, as there are several post-immigration stressors that relates to all immigrants. For example social-related stress as a post-immigration difficulty (Shala et al., 2020; Weishaar, 2008) could affect each immigrant. In this context, immigration is associated with the loss of social contacts due to geographical distance and therefore does not distinguish between immigrants. Another example is, that knowledge and skills are becoming relevant to many other groups of immigrants too (Raghuram, 2013). In this case, results relating to the psychological need competence could be interesting to all immigrants.

Strengths and limitations

One limitation of the current study is that the letters were only coded by a single researcher, which means that no inter-rater reliability could be established. However, building the coding scheme on conceptualizations from previous research on psychological needs and well-being contributes to the validity and reliability of the coding scheme. Moreover, using definitions and citations helped to gain transparency which also contributes to the reliability of the analysis. Also, the sub-codes and the indications for coding entail multiple yet different description of the main-codes, that identified psychological needs and well-being in the letters.

One strength of the current study is that there is no previous study found that shows the present and future perspectives of immigrant students on the meaning and importance of psychological needs based on the Self-Determination Theory and well-being. Knowledge of the findings of the current study can help raise awareness for those who want to immigrate to be able to make a decision. Based on the findings, they can tell what awaits them. For example, they can compare their present perspectives on competence with the present perspective of the immigrant students on competence, to make sure if they can meet the required needs. Also, authorities like the government and teachers are able to identify areas where they can help immigrant students meeting their needs. For example, the German government could help immigrant student to finance the tuition fees and living expenses, as they do with internal students. Being financial independent is a psychological need of immigrant students.

Although a strength of the current study is the triangulation of methods (letters and interviews), a limitation is that the current study did not address well-being in the interviews. Future research should ask for the meaning and importance of well-being in the interviews to better be able to compare with future perspectives on well-being. This extended triangulation of data collection methods could help to verify the statements and to generalize rules among the eight participants. For example, one rule could be that psychological needs that are mentioned in the letters are mostly also needs that immigrant students desire in the present. Also, this qualitative design enables freedom in answering questions and is not limited by answer possibilities or strictly defined questions in advance. For example, during the card-sorting, participants were able to freely move the cards without any further instructions other than to determine the importance of the psychological needs.

Recommendations

The psychological need competence is mentioned most frequent in the present perspectives of immigrant students. As competence is mentioned to be the most important psychological need of immigrant students, the focus should not be placed only or mostly on fulfilling the needs referred to competence. In order to fulfill needs based on competence and to ultimately achieve well-being effectively and also more likely, at least also needs based on autonomy have to be also fulfilled. Participants mention, that both competence as well as autonomy can not exist without each other.

The current study used two independent coding schemes on the collected data. First, the coding scheme for psychological needs and second, the coding scheme for well-being.

Therefore, the data were analyzed and interpreted through two theoretical lenses. Advice for future research could be to ensure whether there is a significant relation between psychological needs and well-being in order to be able to design a common coding scheme. This could involve combining similar aspects of 'indication for coding' like 'autonomy', 'mastery of environment' and 'maintaining meaningful relationships' and subsequently renaming the sub-codes. By combining the coding schemes, much less coding conducted, which would be an overlap anyways. But if you intend to determine the importance of the psychological needs and well-being, coding schemes should not be combined.

Also, with regard to the coding scheme, future research could categorize the keywords found in the present perspectives of immigrant students that describe psychological needs, to obtain new indications for coding that are different from those already available in Table 2.

In future research, a causal link between psychological needs and well-being could be found by introducing a longitudinal study design while assessing multiple letters from participants in different points in time. In other words, different instruction of the letter is asked to follow in different days. The difference in the instruction is beneficial, as ambiguities in data could be corrected by seeking answers. Participants could receive an automatized email at certain intervals, to ask them if they would be interested to write a follow-up letter. The advantages of a repeated qualitative measurement are the opportunities to develop understanding about multiple definitions on psychological needs and well-being and to gain clarification and additional information about ambiguities in earlier perspectives.

Further research on psychological needs could be related to positive psychological interventions. Researchers could try to determine, whether for example talking about psychological needs during a mindfulness session enhance the motivation to fulfill that need. During a mindfulness session, psychological needs become clear and can be worked on. A mindfulness session would be another measurement instrument for the immigrant student itself.

Conclusion

In order to increase well-being, knowledge about which concrete psychological needs to fulfill by immigrant students is analyzed in this study. These findings could contribute to the positive psychological interventions, as those interventions also aim to improve well-being, regardless of whether immigrant students have pathological symptoms or not. This study complements the knowledge of immigrant students' perspectives on the present and future meaning and importance of psychological needs based on the Self-Determination

Theory and well-being to the field of qualitative research. Competence is the most important psychological need that has to be fulfilled, but autonomy has to be also considered as these two needs emphasize the existence of the other. Also, autonomy has the biggest overlap with future perspectives and is therefore more likely to be met already in the present. This goes in line with the importance of autonomy in the future, as autonomy in the future does not have much value. Relatedness on the other hand, has the lowest overlap with future perspectives of psychological needs. This goes in line with future perspectives of relatedness, as relatedness is most important in future perspectives. Due to the differences and similarities of present and future perspectives of the meaning and importance of psychological needs, it is important to understand the meaning and value desired psychological needs have to effectively fulfill them.

References

- Atabekova, A. A., Stepanova, V. V., Udina, N. N., Gorbatenko, O. G., & Shoustikova, T. V. (2017). Interpreting in the context of refugee migration: emerging professional challenges and needs. *XLinguae, 10*(4), 184-195.
- Boeije, H. (2005). *Analyseren in kwalitatief onderzoek: denken en doen*. Amsterdam: Boom Lemma uitgevers.
- Bohlmeijer, E., & Hulsbergen, M. (2013). *Dit is jouw leven: ervaar de effecten van de positieve psychologie*. Amsterdam: Boom Hulpboek.
- Chadda, R. K., Kumar, V., & Sarkar, S. (2018). *Social Psychiatry: Principles & Clinical Perspectives*. Retrived from https://books.google.de/books?id=aarMvgEACAAJ&printsec=frontcover&hl=de&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false
- Chakhssi, F., Kraiss, J. T., Sommers-Spijkerman, M., & Bohlmeijer, E. T. (2018). The effect of positive psychology interventions on well-being and distress in clinical samples with psychiatric or somatic disorders: a systematic review and meta- analysis. *BMC Psychiatry, 18*(1), 1-17.
- Church, A. T., Katigbak, M. S., Locke, K. D., Zhang, H., Shen, J., de Jesus Vargas-Flores, J., ... Ching, C. M. (2013). Need Satisfaction and Well-Being: Testing Self-Determination Theory in Eight Cultures. *Journal of Cross-Cultural Psychology, 44*(4), 507-534.
- Deci, E. L., Ryan, R. M., Gagne, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need Satisfaction, Motivation, and Well-Being in the Work Organizations of a Former Eastern Bloc Country: A Cross-Cultural Study of Self-Determination. *Personality and Social Psychology Bulletin, 27*(8), 930-942.
- Dingle, H. (2014). *Migration: The Biology of Life on the Move*. New York, NY: Oxford university Press.
- Ersner-Hershfield, H., Garton, M. T., Ballard, K., Samanez-Larkin, G. R., & Knutson, B. (2009). Don't stop thinking about tomorrow: Individual differences in future self-continuity account for saving. *Judgment and Decision Making, 4*(4), 280-286.

- Eurostat Statistics Explained. (2019, May 10). Migration and migrant population statistics. Retrieved from <https://ec.europa.eu/eurostat/statistics-explained/pdfscache/1275.pdf>
- Eurostat Statistics Explained. (2020, January 3). Learning mobility statistics. Retrieved from https://ec.europa.eu/eurostat/statistics-explained/index.php/Learning_mobility_statistics#Number_and_share_of_students_from_abroad
- Federal Statistical Office of Germany. (2020, January 3). Students by states. Retrieved from <https://www.destatis.de/EN/Themes/Society-Environment/Education-Research-Culture/Institutions-Higher-Education/Tables/total-states-further-indicated-winter-term.html>
- Forshaw, M. (2013). *Your Undergraduate Psychology Project: A Student Guide*. Chichester, West Sussex: BPS Blackwell.
- Geddie, K. (2015). Policy mobilities in the race for talent: Competitive state strategies in international student mobility. *Transactions of the Institute of British Geographers*, 40(2), 235-248.
- Gerdes, C., Schultz-Nielsen, M. L., & Wadensjö, E. (2011). *The significance of immigration for public finances in Denmark*. Copenhagen: The Rockwool Foundation Research Unit and University Press of Southern Denmark.
- Ghorashi, H. (2008). Giving Silence a Chance: The Importance of Life Stories for Research on Refugees. *Journal of Refugee Studies*, 21(1), 117-132.
- Ghorashi, H. (2016). Kans op een nieuw leven. *De Helling: tijdschrift voor politiek en cultuur*, 29(1), 57-61.
- Islam, M. R. (2018). Climate Change, Natural Disasters and Socioeconomic Livelihood Vulnerabilities: Migration Decision Among the Char Land People in Bangladesh. *Social Indicators Research*, 136(2), 575-593.
- Keyes, C. L. M. (2002). The Mental Health Continuum: From Languishing to Flourishing in Life. *Journal of Health and Social Behavior*, 43(2), 207-222.
- Koval, A., Dieckbreder, F., & Zippert, T. (2018). *Migration und Teilhabe : Begriffe - Grundlagen – Praxisrelevanz*. Göttingen, Niedersachsen: Vandenhoeck & Ruprecht.
- Lamers, S. M., Westerhof, G. J., Bohlmeijer, E. T., Ten Klooster, P. M., & Keyes, C. L.

- (2011). Evaluating the Psychometric Properties of the Mental Health Continuum-Short Form (MHC-SF). *Journal of Clinical Psychology*, 67(1), 99-110.
- Lopez, V. & Whitehead, D. (2013). Sampling data and data collection in qualitative research. In Z. Schneider, D. Whitehead, G. LoBiondo-Wood & J. Haber (Eds.), *Nursing and Midwifery Research: Methods and Critical Appraisal for Evidence-based Practice* (pp. 123-140). Sydney: Elsevier-Mosby.
- MacKellar, F. L., & McNicoll, G. (2019). International Migration: Approach, Issues, Policies. *Population and Development Review*, 0(0), 1-15.
- Mammen, J. R., Norton, S. A., Rhee, H., & Butz, A. M. (2016). New approaches to qualitative interviewing: Development of a card sort technique to understand subjective patterns of symptoms and responses. *International Journal of Nursing Studies*, 58(1), 90-96.
- Markus, H., & Nurius, P. (1986). Possible selves. *American Psychologist*, 41(9), 954-969.
- McAuliffe, M., & Ruhs, M. (2017). *World Migration Report 2018*. Geneva, Switzerland: International Organization for Migration.
- Milyavskaya, M., & Koestner, R. (2011). Psychological needs, motivation, and well-being: A test of self-determination theory across multiple domains. *Personality and Individual Differences*, 50(3), 387-391.
- Murray, M. & Sools, A. (2014). Narrative Research. In P. Rohleder & A. C. Lyons (Eds.), *Qualitative Research in Clinical and Health Psychology* (pp. 133-154). London: Palgrave.
- Nazari, S., & Seyedan, F. (2016). A Qualitative Research of the Causes of Iranian Female Students Immigration to Developed Countries. *Asian Social Science*, 12(10), 167-173.
- Ovie, G. R., & Brrantes, L. (2019). A Dialogue of Shared Discoveries on Immigration: A Duoethnography of International Students in Canada. *Interchange*, 50(3), 273-291.
- Ozaltin, D., Shakir, F., & Loizides, N. (2019). Why Do People Flee? Revisiting Forced Migration in Post-Saddam Baghdad. *Journal of International Migration and Integration*, 1, 1-24.
- Pirolli, P., & Russell, D. M. (2011). Introduction to this Special Issue on Sensemaking. *HUMAN-COMPUTER INTERACTION*, 26, 1-8.
- Raghuram, P. (2013). Theorising the Spaces of Student Migration. *Population, Space and*

Place, 19(2), 138-154.

- Renner, A., Hoffmann, R., Nagl, M., Roehr, S., Jung, F., Grochtdreis, T., ... Kersting, A. (2020). Syrian refugees in Germany: Perspectives on mental health and coping strategies. *Journal of Psychosomatic Research* 129(1), 1-9.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069-1081.
- Ryff, C. D., & Singer, B. (1996). Psychological Well-Being: Meaning, Measurement, and Implications for Psychotherapy Research. *Psychotherapy and Psychosomatics*, 65(1), 14-23.
- Schotanus-Dijkstra, M., Ten Have, M., Lamers, S. M. A., De Graaf, R., & Bohlmeijer, E. T. (2017). The longitudinal relationship between flourishing mental health and incident mood, anxiety and substance use disorders. *European Journal of Public Health*, 27(3), 563-568.
- Shala, M., Morina, N., Salis Gross, C., Maercker, A., & Heim, E. (2020). A Point in the Heart: Concepts of Emotional Distress Among Albanian-Speaking Immigrants in Switzerland. *Culture, Medicine and Psychiatry*, 44(1), 1-34.
- Sommers-Spijkerman, M. P. J., Trompetter, H. R., Schreurs, K. M. G., & Bohlmeijer, E. T. (2018). Compassion-Focused Therapy as Guided Self-Help for Enhancing Public Mental Health: A Randomized Controlled Trial. *Journal of Consulting and Clinical Psychology*, 86(2), 101-115.
- Sools, A., & Mooren, J. H. (2012). Towards Narrative Futuring in Psychology: Becoming Resilient by Imagining the Future. *Graduate Journal of Social Science*, 9(2), 203-226.
- Sools, A., Mooren, J. H., & Tromp (2013). Positieve gezondheid versterken via narratieve toekomstverbeelding. In E. Bohlmeijer, L. Bolier, G. Westerhof, & J. A. Walburg (Eds.), *Handboek positieve psychologie. Theorie, onderzoek, toepassingen* (pp. 91-103). Amsterdam: Uitgeverij Boom.
- Sools, A. M., Tromp, T., & Mooren, J. H. (2015). Mapping letters from the future: Exploring

- narrative processes of imagining the future. *Journal of Health Psychology*, 20(3), 350-364.
- Sools, A., Triliva, S., & Filippas, T. (2017). The Role of Desired Future Selves in the Creation of New Experience: The Case of Greek Unemployed Young Adults. *Style*, 51(3), 318-336.
- Sools, A. (2020). Back from the future: a narrative approach to study the imagination of personal futures. *International Journal of Social Research Methodology: Theory and Practice*, 1-15. <https://doi.org/10.1080/13645579.2020.1719617>
- Wang, Z., & Suyama, N. (2018). Consumer Behavior of Foreign Residents in Japan for Service Industry. *Social Computing and Social Media. User Experience and Behavior*, 10913, 388-399.
- Wehmeyer, M. L., Shogren, K. A., Little, T. D., & Lopez, S. J. (2017). *Development of Self-Determination Through the Life-Course*. Dordrecht, Netherlands: Springer.
- Weishaar, H. B. (2008). Consequences of international migration: A qualitative study on stress among Polish migrant workers in Scotland. *Public Health*, 122(11), 1250-1256.
- White, M. J. (2016). *International Handbook of Migration and Population Distribution*. DOI: 10.1007/978-94-017-7282-2
- Wulz, J., & Rainer, F. (2015). Challenges of Student Mobility in a Cosmopolitan Europe. In Curaj, A., Matei, L., Pricopie, R., Salmi, J., & Scott, P. (Eds.), *The European Higher Education Area* (pp. 43-58). Cham: Springer.

Appendix

Appendix A: Invitation letter

Dear ...,

Thanks for agreeing to participate in my study.

This research takes place within the framework of my Master's thesis in Psychology at the University of Twente. This study is about how immigrant students give meaning to their future. With the following tasks I would like to better understand how you imagine your future and to get to know and understand you better. Please read and sign the Informed Consent, which can be found in this email, if you agree with the terms of this study. Please fill out the demographic questionnaire, which also can be found in this email. Then the task is to write a letter from the future to yourself. The instructions to write this letter can also be found in this email. It takes about 20 minutes to write this letter. Finally, I would like to ask you to give me a time frame in which you are able to do an interview with me. In this interview I will ask you questions about your written letter. The interview will take about 30 to 45 minutes. So please send me or hand me the letter, the Informed Consent and the demographic questionnaire a few days before our interview.

If you have any questions in advance you can reach us under the following email address:
s.bohlouli@student.utwente.nl

Kind regards,

Sanaz

Appendix B: Informed Consent

I hereby declare that I have been informed in a clear manner about the aim and method of this study. Furthermore, I participate on my own free will and I am aware that I can withdraw from this research at any time without having to mention a reason, explanation or justification. My questions have been answered to my satisfaction. I understand that the collected data, the audio recording of the interview and any taken notes will be used only for analysis and/or scientific presentations and will be handled anonymously. My personal data will not be disclosed to third parties without my permission. In case of questions, complains or further interest in the results of this study, I may contact Sanaz Bohlouli (s.bohlouli@student.utwente.nl).

Name:

Date:

Signature:

Appendix C: Questionnaire of demographics

Before we can start this study we need some personal information from you.

What is your gender?

- Male
- Female
- Other

What is your age?

What is your nationality?

What is your current educational status?

Appendix D: Full instruction of the 'Letter from the Future' (English)

Before starting to write the letter, I invite you to take the time to relax yourself for a moment. For this experience to work optimally, please take a moment to relax your body, release your mind, take few deep breath and sit comfortably in your chair.

The following clues are tips to give you an idea what the intention of the letter is and what you can think of. Feel free to use these clues to write the letter in your own way. Use your imagination to the fullest: Remember that this is something that has not yet happened and that it is an opportunity to imagine what might happen.

Where and When?

Imagine stepping into a time machine and traveling to the future.

Imagine where and when you are when you arrive in the future.

When: The time in the future is up to you, it can be an hour, a day, a week, or years later.

Where: Imagine as vividly as possible what the place looks like where you are. What colors and scents do you perceive. What do you see around you? Are there people there?

What?

Imagine a desired situation. Desired can mean that a positive wish, change or dream in your life has come true. It can also mean a situation in which it becomes clear how you have solved a certain problem or found a good way to deal with it. Tell your story as vividly as possible. Then tell how you arrived at that desired situation. What brought you there? What helped you most to get there afterwards? Which need/s of yours did fulfill in the future and how? How do you (then) look back on today's life?

To Whom?

Give a message to your present self. This could be:

-you give a wise, cheerful, or other positive message to yourself

The letter is not longer than 400 words (about 1 A4)

Key points for orientation for Letter from the future

- Time and place in future of own choosing
- To yourself as an audience in present
- Desired situation
- Fulfillment of needs
- Path from present to future
- Message to present

Appendix E: Interview scheme

Guideline for a semi-structured interview with open-ended questions

1. Giving an introduction about the study and explaining the purpose of the interview

>This study aims to clarify the fundamental needs immigrant students have based on their imagination of the future, to improve well-being of immigrant students. (Checking with the interviewee if the aims of the study are clear and if not an explanation is provided.)

>The questions that I will ask you, will help to identify those needs and understand them correctly. This interview will take about 45 minutes. You are free to answer how you would like and refrain from answering if there is something that you do not want to talk about.

>I would like to take notes and record your voice on tape. The recording will only be used and the notes are helping me to reflect and react to your answers. I will transcribe your recording to be able to analyze your answers in detail without overlooking any important aspects. At all time, your recording will stay anonymous and confidential. That's why I asked you to sign the informed consent.

>Is it all clear to you?

2. Allow interviewee to clarify any doubts about the interview

>Do you have any remaining questions before we start?

3. Asking questions

3.1. Asking questions about the process of writing the letter

>How was it for you to write the letter from the future?

>How did you feel during writing the letter from the future?

>How did you feel after writing the letter from the future?

3.2. Asking questions about sub-codes based on the Self-Determination Theory

>There are three needs that I looked for in your written letter. Competence, autonomy and relatedness. You can see these needs on these three cards in front of you. Competence refers to the capability of mastering your environment, the ability to achieve desired results and also how confident you are with yourself and your abilities. Autonomy means that your actions are voluntariness and self-chosen. Also, that your actions and activities are self-endorsed and self-determined. Relatedness means that you have a sense of belonging to somewhere or someone and that you care for someone or a special group in your society. In other words it shows your need for closeness and connection to others.

>Did you understand the meaning of those three needs? If not, describe in more simple terms.

>Do you have any questions?

>In your letter I found the following need/s: ... Do you recognize yourself in these findings? If the answer is no, I will explain why certain words or sentences are related to those need/s I have found. If the answer is yes, the following questions could be asked:

>Can you tell me more about your feelings or thoughts behind the following part of your letter? ...

>Do you feel that something related to this need is missing in your current life?

>What do you expect will happen when this need is fulfilled in your future life? How would your life look like? (keep asking gently for particulars until a clear picture of what the future life would be like can be seen – stop asking when the person indicates

there is no more to say)

>Does this need apply more to your professional life, your personal life or to both?

Please explain how and why?

Example question for sub-code competence

>If I understood correctly, you wrote that your uniqueness, skills and trust in yourself makes you confident in you abilities. Can you describe in more detail what feeling confident would look like in your future life? How (if at all) do you experience competence in your present life?

Example question for sub-code autonomy

>You wrote, that you finally are your own boss. Can you describe in more detail what being your own boss would look like in your future life? How (if at all) do you experience being a boss in your present life?

Example question for sub-code relatedness

>You wrote that you finally feel that you belong here. Can you describe in more detail what belonging would look like in your future life? How (if at all) do you experience belonging in your present life?

3.3. Asking questions about the relationship between the sub-codes

>I would like to know the relation between these needs for you.

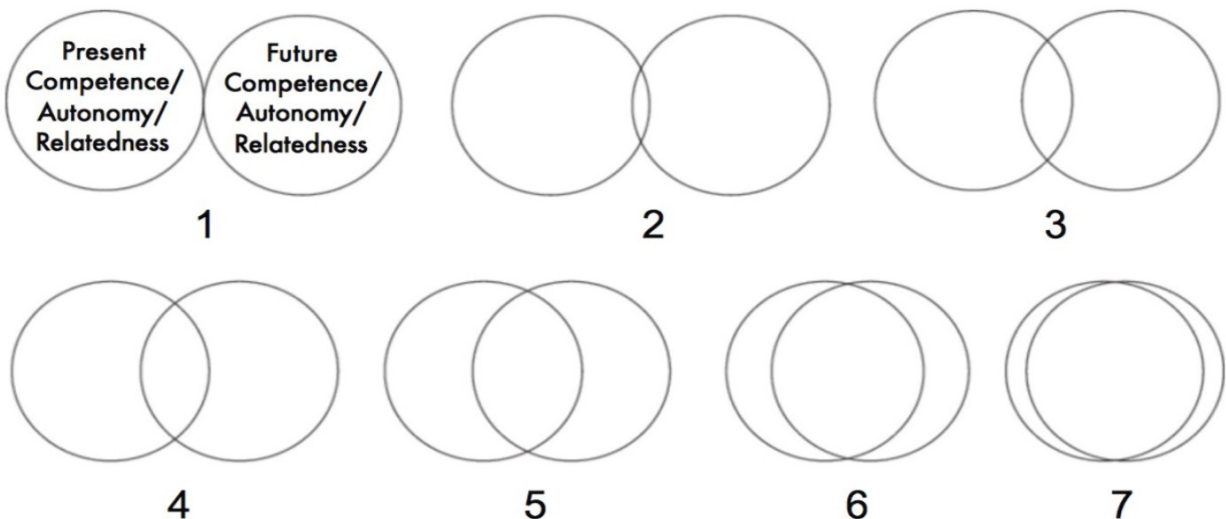
>Please rank the cards from most to least important. Please explain your thoughts behind your ranking.

>Is there a need that emerges from another need? That means that one need is not existing without the other. And why is that?

3.4. Asking questions about the differences between the sub-codes in the presence and in the future

>I would like to know about the relation between the present and the future need/s.

>On a scale from one to seven, where one means no overlap and seven means almost complete overlap, can you rate the overlap of the need/s in the present with the need/s in the future on the picture. That means, how strongly is each need existing in your life right now and in your imagined future. Here, the left circle demonstrates the need/s in the present and the right circle demonstrates the need/s in the future.



- >What do you need at the moment to increase the overlap of the present and future need/s?
- >How can you get what you need to increase the overlap of the need/s?
- >Why do you think you don't have what you need to increase the overlap of the need/s?

4. Thanking interviewee for participating and asking interviewee if there are any questions?