To What Extent Can Social Interactions Enhance the Subjective Well-being of

International Students?

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Abstract

This paper aims to study the effect of social capital and cultural competence on the subjective well-being of international students. Previous literature has proposed that social capital and cultural competence would positively impact subjective well-being. We hypothesized that contact between Dutch, internationals or co-nationals with other international students will increase their SWB and that high cultural competence will also increase the SWB of international students. The convenience sample consisted of 140 international students in the Netherlands. They were instructed to complete an online survey. Using multiple regression, we found that social support from Dutch people improved the SWB of international students and that high cultural competence was related to high SWB. In conclusion, more contracts should be encouraged between Dutch people and international students, especially though university. Limitations of the study included the low generalizability of the findings and its strengths were the comparison among multiple sources of contacts and their relation to international students' subjective well-being.

Keywords: international students, subjective well-being, cultural competence, social interactions.

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International Students?

Academic life can be a quite challenging life stage and it can even be overwhelming for students. They face multiple and serious issues that originate not only from the university environment, but also from other domains of their life. They might experience sleep deprivation (Zhang et al., 2015), loneliness (Qualter et al., 2009), burnout (Luckas et al., 2017), and addiction (Amiri et al., 2021). Given the fact that the world is progressing in many objective factors such as life expectancy, decreased poverty, and better health (Probst, 2019), it seems reasonable to assume that the standard of living of students will improve over time since the whole society is improving. However, the reality differs dramatically. Indeed, the mental health of young students has gotten worse through the decades instead of improving (American Psychological Association, 2019). Therefore, the process of pursuing an academic degree could negatively influence the mental health of students. As a consequence, the fragile mental health of international students can be a predictive factor in dropping out of university (Behr et al., 2020).

Issues such as loneliness are common among students, however, there are numerous subgroups that also face additional issues. One of them is international students, who can be defined as "'Students who have crossed a national or territorial border for the purpose of education and are now enrolled outside their country of origin" (UNESCO UIS, 2021). Moreover, the number of international students has risen dramatically over the last two decades and as a result, more students are studying abroad than ever (Migration data portal, 2020). International students are facing a variety of unique problems such as homesickness (Billedo et al., 2020), discrimination (Bonazzo & Wong, 2007), and language barriers (Elega & Özad, 2017). Taking into consideration that limited research is dedicated to them (King & Raghuram, 2013), and that international students are experiencing a distinct set of challenges, it is critical that these issues be addressed scientifically. Therefore, the aim of the present study is to explore the effect of social capital from multiple sources, namely Dutch, co-

national and international students, and cultural competence on the subjective well-being of international students.

Subjective Well-Being

A relevant concept is *Subjective Well-Being* (SWB). SWB is a subjective self-evaluation of an individual's life across three components. The first component is the amount of positive feelings a person is experiencing at a certain moment - the more positive emotions the higher the SWB, and the lower the positive emotions the lower the SWB. The second component is the number of negative feelings a person is experiencing at a certain moment. The higher the negative emotions the lower the SWB, the lower the negative emotions the higher the SWB. Finally, the third component is life satisfaction and it differs from the previous two by focusing on the overall quality of past experiences instead of the present emotional states (Diener, 1984).

Evidence suggests that higher SWB is associated with multiple positive effects on mental health. Individuals with high SWB live longer, engage in healthy behaviors, receive high salaries, and are more likely to positively affect other individuals with their actions (Helliwell et al., 2013). Additionally, high SWB can also act as a protective factor and prevent relapse from a healthy position to psychopathology (Chowdhuty, 2020).

Social Capital

Since increasing SWB has positive effects on the mental health of international students, it is critical that the predictors of SWB be investigated and applied in an academic setting. The longest longitudinal study, which lasted over 80 years at Harvard University, showed that the best predictor of SWB is social capital instead of income or fame (Mineo, 2017; Sun et al., 2019). Additionally, multiple sources of evidence are strengthening previous findings (Myers, 2000). Social capital seems to improve SWB not only in the form of family and friends (Nguyen et al., 2015), but also simple conversations with strangers can have a positive effect on people's SWB (Gunaydin et al., 2020). Thus, the aim of this research paper

is to examine the social interaction of international students and multiple groups, namely the host society, other international people, and finally co-nationals.

Social capital can be defined in two different ways, including the quality and the number of social interactions. First, the quality aspect of social capital is focused on the meaning, perceived emotional support, and intimate part of social interaction. In contrast, the quantity of social interaction does not refer to the depth of interaction but to the number of people students interact with during a given amount of time (Sun et al., 2019). Social capital can be differentiated in multiple ways, one of which is by the ethnicity. In the present study, we differentiated between three groups that are prevalent in the Netherlands, namely contact with the host society (natives), co-nationals, and other international students.

Host Society

Social interactions between international students and a host society are critical for improving their mental health (Hendrickson et al, 2011). International students who have come in contact with the host society reported numerous benefits, such as being more satisfied with their life, feeling less homesick, and perceiving less loneliness (Church, 1982). Additionally, evidence suggests that there are more benefits for international students. After interacting with a host society, they adapted better to life, had fewer social difficulties, and improved communication competence (Ward & Kennedy, 1993; Shu et al., 2020).

A few explanations have been suggested to explain these positive outcomes on the mental health of international students'. Firstly, the host society offers instrumental support to international students by providing them with valuable knowledge about the challenges and opportunities of the new environment. Another explanation is that interaction with the host society offers several opportunities to the international students to practice the regional language. Considering that the language barrier is a stressful trigger for students, improving their language skills can improve their self-esteem and life satisfaction. Despite the overall positive effect, some argue that interaction between the host society and international students may be negative in instances of discrimination (Lee, 2010).

Co-national Contact

Interaction between international students and other co-nationals can enhance the mental health of international students (Bart et al., 2015). Evidence suggests that international students who interact with other co-nationals are more resilient, less depressed, and have higher self-esteem than those who do not (Cheung & Yue, 2013). Moreover, co-nationals encourage other co-nationals to deal with the pressure of assimilation by highlighting their shared culture, which may improve their SWB as well (Cheung & Yue, 2013). Also, international students with many friends report high self-esteem and easy adjustment to the new enviroment (Al-Sharideh &Goe, 1998).

Similar to social capital, multiple mechanisms are suggested to explain the positive outcomes of co-national friendships. One explanation might be that co-nationals are sharing a same background, country of origin, and culture, and they deal with similar struggles and issues once they have immigrated. Therefore, communication between co-nationals can be beneficial in many ways. Since they share similar struggles, it is possible to empasize with each other and offer emotional support that other groups, such as the host society struggle to relate to and provide (Bart et al., 2015). Another way this can be beneficial is by sharing solutions. Since they struggle with similar issues and are searching for similar solutions, communicating them can solve the problems.

International Contact

In addition to contact with host-society members and other co-nationals, socialization among international students can be beneficial for their mental state (Westin, 2007). One reason that social interaction among international students is beneficial is the socioemotional and instrumental support from other foreign students. Because international students share the experience of immigrating to a new country, they better understand their challenges and difficulties compared to the Dutch population (Chavajay, 2013). So, international students share a common perception about the struggles of being an international student and they can

effectively support each other. Specifically, international students can provide instrumental support to each other on how to successfully navigate through the university system.

Cultural Competence

It is also worth considering the effect of the diverse cultural environment, in which different nationalities co-exist, on the social lives of international students. In an international university, students can have different assumptions and core values about life which can manifest themselves in cultural differences. For example, in individualistic societies such as England, the emphasis is more on individualistic values sincluding self-expression, and confidence (Fletcher, & Olekalns, 1999). In contrast, in collectivistic societies, the emphasis is placed on values like harmony, conformity, and strong social ties. Furthermore, arguing can be viewed by individualistic societies as an acceptable way to protect your right, but also arguing can be viewed by collective societies as a violation of harmony, and it is therefore prohibited (Fletcher, & Olekalns, 1999). Hence, for students to avoid misunderstandings in a highly diverse environment, it is critical to improve their cultural competence (Ford & Whiting, 2008).

Cultural competence (CC) is defined by three characteristics: awareness of other cultures, knowledge about them, and skills necessary to overcome cultural differences and promote cooperation (Wickline et al., 2021). International students with high CC are aware of the rich existence of other cultures. They are also educated about the climate, the recent history, or the values of numerous cultures, and they can use this knowledge as a tool to tackle cultural differences, making social interactions easier. In contrast, international students with low CC tend to act the opposite way; these students tend to ignore the existence of other cultures, they are ignorant about them and also they tend to cooperate poorly with their co-students (Wichline et al., 2021). Moreover, evidence suggests that the number of international friends and CC are positively correlated (Tran & Lee, 2011). In other words, individuals with high cultural skills may more easily have numerous international friends (Tran & Lee, 2011). However, given that individuals with a large social network tend to have high SWB (Mineo,

2017), one could argue that high CC should be related to higher SWB by providing diverse social support.

The Present Study

According to previous literature, social contact between international students and co-nationals, Dutch and other international students and CC appear to positively affect the SWB of international students. We will further explore these relationships by examining the differential impact of these contact sources. More specifically, we predict that:

H1: The more contact international students have with Dutch students, the higher their SWB will be.

H2: The more contact international students have with other international students, the higher their SWB will be.

H3: The more contact international students have with the conational, the higher their SWB will be.

H4: Higher CC leads to higher SWB will be.

This research paper will add to the literature on international student acculturation in a number of ways: Firstly, a limited amount of research focuses on international students (King & Raghuram, 2013) and this paper will expand the small literature dedicated to international students. Secondly, most research about international students is based on USA, UK, or Australia samples which compromises generalizability (Home, 2016). In contrast, the current sample will be from another country, specifically the Netherlands. One important distinction among these countries is that in the USA or the UK, international students use English to communicate directly with the native population. In contrast, in the Netherlands the official language is Dutch, and many international students only have mastered English, which may compromise communication with locals. Another distinction is that in UK universities the classes have mixed students from international and native backgrounds. In contrast, in the Netherlands, a lot of academic institutions offer English-speaking and Dutch-speaking

programs, which separate international students from Dutch students, giving them less opportunity to socialize.

Method

Participants & Design

A sample of participants ($N = 140$) between 18 and 30 years of age ($M = 21.63$ $SD = 2.26$), took part in the study. Participants were included if they were at least 18 years of age, spoke English, were studying at a Dutch university with a nationality other than Dutch and had stayed in the Netherlands for at least six months. Those who did not meet these criteria were excluded ($N = 6$), which left us with a final analytical dataset of $N = 134$. The demographic characteristics of the participants were as follows: male ($N = 49$), female ($N = 80$), and others ($N = 5$) were not identified either as male or female. Fifty-seven participants originated from Germany, and from other countries such as seven participants from Romania and seven from Italy[9]. Also, the majority of participants ($N = 117$) studied at the University of Groningen. Similarly, the majority of the participants ($N = 113$) lived in Groningen.

Data were collected in two ways. Firstly through convenience sampling, based on the network of researchers, for which no financial compensation was provided. Secondly, first-year psychology students at the University of Groningen could participate in exchange for course credits.

Materials & Procedure

Ethical approval was granted by the ethics committee of the faculty of Behavioral and Social Sciences at the University of Groningen. Later, the questionnaire was shared through social media, for example, Facebook, Discord, and WhatsApp. The participants could enter the survey by following a link or QR code. At the beginning of the questionnaire, participants read the information about the main focus of the study, namely the experiences of

[9]*countries with one participant were: Albania, Austria, Bulgaria, Croatia, Cyprus, Jordan, Latvia, Moldova, New Zeland, Norway, Palestine, Russia, Singapore, Slovenia, South Africa, South Korean, Syria.

international students, where no deception was used. After the participants provided their consent, they gained access to the questionnaire. Firstly, they provided information about their age, current location, the location of their university, country of origin, the year they arrived in the Netherlands, and their native language. Later, they were asked about information regarding their social interaction with Dutch people, international students, and other co-nationals, their subjective well-being, and lastly their cultural competence. The questionnaire on average took approximately 20 minutes. The participants could terminate the experiment at any time during the survey without any justifications and their responses remained anonymous.

Social Capital

Contact Frequency

Operationalization of contact quality was conducted by using a 3-item Short Form of the Likert Scale. Answers were indicated on a 4-point Likert scale ranging from 1 (*Never*) to 5 (*Frequently*). Participants were asked "How often does it happen that you talk to several people in one day?". Participants answered this question for three different groups, namely Dutch people, co-nationals, and other international students.

Contact Quality

Operationalization of contact quality was assessed by using a 3-item Short Form of the Likert Scale for each of the three groups of interest (Dutch, international and co-national students). So, three items were used in each group and by combining them, the scale consisted of 9 items (Haslam et al., 2005). Answers were indicated on a 7-point Likert scale ranging from 1 (*not at all*) to 5 (*Definitely*). An example of an item would be "Do you get the emotional support you need from other people?". Participants answered the questions for three different groups, namely Dutch people (Cronbach's $a = 0.876$), co-nationals (Cronbach's $a = 0.053$), and other international students (Cronbach's $a = 0.927$).

Subjective Well-Being

To operationalize SWB, two different scales were combined. The first is the 10-item Short Form of the Positive and Negative Affect Schedule (PANAS) Scale (Thompson, 2007) was used, and the second scale was the Satisfaction With Life Scale (Diener et al., 1985). SWB is measured through three components of SWB: the amount of negative emotions, the number of positive emotions, and life satisfaction. For the first two components, the PANAS scale was used. Specifically, he first component consisted of 5 Likert items, including examples such as upset, hostile, and ashamed. Answers were indicated on a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). The second component consisted of 5 items, with examples such as alert, inspired, and active. Answers were indicated on a 5-point Likert scale ranging from 1 (*never)* to 5 (*always*). Lastly, the life satisfaction scale was used for the third component. It consisted of 5 items, some examples are Answers were indicated on a 5-point scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). By combining the PANAS scale and the life satisfaction scale, a new scale was created to measure the SWB of international students (Cronbach's $a = 0.927$).

Cultural Competence

Operationalization of Cultural competence was assessed by using a 15-item Short Form of the cultural competence Scale (Cultural, n.d).CC costists of three components: awareness, knowledge, and skill. Each component is measured by 5 items. For awareness, an example of an item would be "I view human difference as positive and a cause for celebration". For knowledge, an example of an item would be "I recognize that my knowledge of certain cultural groups is limited. I make an ongoing commitment to learning more through the lens of cultural groups that differ from my own". For skill, an example of an item would be "I develop ways to interact respectfully and effectively with individuals and groups that may differ from me"(Cronbach's $a = 0.818$). Answers were indicated on a 4-point scale ranging from 1 (*never*) to 5 (*always*).

Control Variables

Control variables that participants self-reported were their current length of stay (in years) in the Netherlands since the longest their current length of stay in the host country, their higher SWB (Cetinkaya-Yildiz et al., 2011). Another control variable was the proportion of time spent in the Netherlands, which controls for the effect of COVID since people officially were enrolled in their program but physical attendance was not always mandatory and occasionally impossible due to the pandemic (Nove Infos, 2020). Consequently, it was not obligatory for them to live in the Netherlands. Our last control variable was their intention to stay in the Netherlands because the higher their intention to stay in the Netherlands, the higher their SWB will be (Sarangal et al., 2020).

Results

To test our hypotheses, we analyzed the data with SPSS. For the multiple regression, all assumptions were met.

Results of table 1(*see in Appendix A*)

The first hypothesis stated that the more contact international students have with Dutch students, the higher their SWB will be. According to the correlational analysis, frequent contact ($r = .199$, $p = 0.23$) and social support from Dutch people ($r =.265$, $p = .002$) significantly predict international students' SWB, which is in line with our first hypothesis.

`   The second hypothesis stated that the more contact international students have with other international students, the higher their SWB will be. According to the correlational analysis, frequent contact ($r = -.10$, $p = 0.913$) and social support from international students ($r = .117$, $p = .185$) does not significantly predict international students' SWB. Contact with other international students was not linearly related to SWB. We did not find support for our second hypothesis, therefore our second hypothesis is rejected.

The third hypothesis stated that the more contact international students have with co-national students, the higher their SWB will be. According to the correlational analysis, frequent contact ($r = .007, p = 0.936$) and social support from co-national students ($r = .130$, $p = .138$) does not significantly predict international students' SWB. We did not find support for our third hypothesis which was is rejected.

The fourth hypothesis stated that higher CC leads to higher SWB. According to the correlational analysis, CC ($r = .230, p = 0.12$) significantly predicts international students' SWB, which is in line with our first hypothesis

Lastly, the control variables, namely time spent in the Netherlands during COVID, length of stay and intention to stay to the Netherlands were not significant, with values $r = .063, p = 0.474, r = .162, p = 0.069$ and $r = -.98, p = .263$.

After the correlational analysis was completed, it was followed by an inferences analysis targeting the hypotheses, which were confirmed.

Inferential Analysis

Since our control variables and contact with other co-national and international students did not seem to be significantly related to SWB, these variables were not included in the first model. In contrast, contact frequency and quality of contact with Dutch people are significantly related to the SWB of international students. We wanted to further test how these two variables contribute to the SWB of international students. So, they are included in the first model.

The first model had $F(2,128) = 5.534 , p = 0.05, R^2 = 0.065$.

For frequency $b = .79, se = .70, r = .105, t = 1.125, p = 0.263$

. For quality Dutch, $b = .115, se = .049, r = .221, t = 2.359, p = .02,$

Therefore, while frequency of contact significantly correlated with SWB, it did not appear to be a significant contributor to SWB ($p = .23 > .05$). In contrast, support from Dutch people is a significant predictor of SWB ($p = .02 < .05$).

CC is significantly related to the SWB of international students. We wanted to further test how CC contributes to the SWB of international students. So, CC is included in the second model

The second model had $F(1,116) = 6.494$, $p = 0.012$, $R^2 = 0.45$.

For CC, $b = .383$, $se = .150$, $r = .230$, $t = 2.548$, $p = 0.012$,

Post Hoc Analysis

The aim of the post hoc analysis was to conduct a confirmatory analysis, in an attempt to further explore the data. Specifically, the sample was a significantly large number of German participants (57 out of 134). Therefore, the sample was divided into two subgroups: the first group consisted of non-German international students (see table 2) and the second consisted of German international students (see table 3). Both subgroups showed different outcomes compared to the combined original group. Lastly, a second aim of the post hoc analysis was to explore the relationship between SWB and the three components of CC.

The main difference between the first subgroup (only non-Germans) and the original group was that in the first subgroup frequency with Dutch people was not significantly related to SWB, $r = .220$, $p = .06$ In contrast, support from international students was significantly related to SWB, r = .380, p < 001 and support from Dutch people was also significantly related to SWB with r = .296 , p = .005

Social support from Dutch people and other international students were the only variables related to the SWB of international students. I wanted to further test how support

from Dutch people and international students contributes to the SWB of international

students. So, Dutch support and international support are included in the third model.

The third model had $F(2,70) = 7.407, p = .001, R^2 = .175$

 Values for the individual variables:

For Dutch support: $b = .103, se = .064, r = .188, t = 1.611, p = .112$

For international support: $b = .240, se = .089, r = .312, t = 2.682, p = .009$

The main difference between the second subgroup (only Germans) and original group

was that was that in the second subgroup, frequency with Dutch people was not a significant

predictor of SWB, $(r = .241 , p = .07)$. Also, CC was not significantly related to SWB $(r = .$

147, $p = .29)$. In contrast, support from co-national students was significant related to SWB $(r$

$= .287, p = .031)$ and support from Dutch people was also significantly related to SWB $(r = .$

265 , $p = .047)$.

Social support from Dutch people and co-national students were the only variables

significantly related to the SWB of German international students. So, I wanted to further test

how support from Dutch people and co-nationals contributes to the SWB of international

students. So, Dutch and co-national support is included in the fourth model.

The forth model had $F(2,54) = 3.352, p = .042 , R^2 = 0.110$.

 Values for the individual variables:

For Dutch support: $b = .091, se = .069, r = 0.182, t = 1.311, p = .196$.

For conational support: $b = .145, se = .092, r = 0.218, t = 1.568, p = .123$.

After the analysis of CC was done, the following analysis explores the correlational

relationship between international students' SWB and the three components of CC, namely

awareness, knowledge, and skills. In more detail, awareness $(r = .255 , p = .003)$ and skill $(r$

= .078 p = .027) were significantly related to SWB. In contrast, knowledge (r = .131, p = .078) was not significantly related to SWB.

Since only awareness and skills are significantly related to SWB, they were selected for inferential analysis, in order to explore their relationship with SWB. So, for the third model:

$F(2,117) = 4.619, p = .012 , R^2 = .073$

Values for the individual variables:

For awareness, b = .328 , se = .139 , r = .223 , t = 2.365, p = .02

For skill, b = .117, se = .114, r = .097, t = 1.027, p = .306

Discussion

The aim of this paper was to explore the effect of social capital and CC on international students' SWB. Four hypotheses were formulated based on previous literature, in order to test the relationship among social capital, CC, and SWB. Results indicated that there is a significant relationship between social support from Dutch students and SWB, confirming the first hypothesis, and also that CC is positive associative with SWB, confirming the fourth hypothesis. Moreover, results showed that there is an non-significant relationship between social support from international co-nationals and SWB, which led us to reject the second and third hypotheses.

In more detail, the result suggested that there is a significant relationship between receiving support from Dutch individuals and the SWB of international students. This result is in accordance with several other sources (Hendrickson et al, 2011; Hofhuis et al., 2019;). One potential mechanism is that international students who socialized with the host society report a better adjustment to the new environment (Ward & Kennedy, 1993). By interacting with the host society, they acquired knowledge about social rules and necessary skills from them to

integrate (Chapdelaine & Alexitch, 2004). Another way that contact with the host society might improve international students' SWB is by decreasing homesickness. Since one of the components of SWB is the number of negative experiences and feelings, socialization with international students and Dutch individuals might prevent negative feelings from arising or developing such as the level of homesickness, and as a result, international students experience higher SWB (Billedo et al., 2020).

Secondly, the result suggested that there is no significant relationship between receiving support from international individuals and the SWB of international students. This diverges from multiple sources (Bart et al., 2015; Cheung & Yue, 2013). It is plausible that the result is influenced by an external factor, namely the COVID pandemic, because the situation for international students changed dramatically during the last two years (Nove Infos, 2020). One of the reasons it changed was that the education system was transformed into a new digital system with online classes and exams (Corona updates, n.d.). As a result, the online setting presented fewer opportunities for physical and close contact and socialization among international students. So, even though our results suggested that there is no evidence that socialization among international has a positive effect on their SWB, online education creates a barrier to socialization among international students and their social contact did not have the necessary time to further develop. So, international students might still benefit from socialization with other international students. Future research should replicate our findings in the upcoming years once the effect of COVID on student life will be minimum or non-existent.

As a note, the first hypothesis regarding the host society was confirmed, while the second hypothesis regarding other international students was rejected. This might seem contradictory, that online education did not impact severely the relationship between Dutch society and international students compared to the relationship among international students. One explanation might be that the host society involved multiple groups of people, not limited

to students. In contrast, by definition, the international and co-national students consisted of only students and as a result, online education affected their lives more severely their lives than the average Dutch citizen.

An alternative explanation is based on our post hoc analysis. International students were divided based on their nationality into German students and non-German students. In both groups, social support from Dutch people was a significant predictor of international students' SWB. The effect was common to both groups, so it appeared in the first results as well. However, social support among international students was a significant predictor of international students' SWB, only in the sample which costisted of non-German students. So, it is possible that the third hypothesis was rejected due to the nationality of the international students.

Thirdly, the results suggest that spending time with co-nationals does not increase the SWB of international students. This constrasts the finding of (Westin, 2007). One explanation is those international students who are spending time with their co-nationals report feeling more homesickness and dissatisfaction (Hendrickson et al., 2011). Moreover, international students, who socialize with their co-nationals report greater difficulty in adjusting to a new environment (Pedersen et al., 2011). Considering that moving to a new country is stressful, over time international students develop valuable resources and skills. For example, international students experienced less homesickness from the first week to the sixth week of the semester (Bell & Bromnick, 1998). Socializing with other co-nationals is easier since they all speak the same language, and originate from the same culture (Volet & Ang, 2006). Therefore it might be convenient for them to socialize with other co-nationals, but in doing so they do not develop the necessary skills to flourish. For example, international students' homesickness was positively associated with visits from their families, which prevent them from developing new relationships (Tochkov et al., 2010).

On the other hand, evidence suggests that socialization among co-nationals can improve their SWB, through cultural maintenance (Rui & Wang, 2015). Since co-nationals originated from the same country, they share a number of traditions, languages, and common knowledge among others. In other words, they share the same culture. Once they immigrate to another country, a dilemma about their cultural identity arose, to what extent they will be alienated from their culture and assimilate into the culture of the host society. One approach to this dilemma is to maintain their cultural heritage, even though they immigrated. Maintaining your culture can be achieved by socializing with co-nationals. Therefore, socialization with other con-nationals influences cultural maintenance and is positively correlated with SWB (Rui & Wang, 2015). Previous research considered social support from internationals seems to have a positive and a negative effect and as a result, we were not able to find an overall effect.

Alternatively, according to the current post hoc analysis, the third hypothesis was supported only for the sample consisting only of international students of German ethnicity. In other words, there is evidence to suggest that socialization among German international students enhances their SWB. Therefore, it is probable that co-nationals indeed have a positive effect on the SWB of international students, but the nationality of international students functions as a moderator between oscillation among co-nationals and their SWB. Future research should explore potential mechanisms and explanations of this moderator effect.

The results provided evidence in favor of the fourth hypothesis, meaning that there is a significant effect of CC on the SWB of international students. This supports previous research (Mineo, 2017). International students, who are immigrating to a foreign country, are exposed to a different culture. By gaining knowledge about the social rules, customs, and daily life of that foreign country, international students can more easily connect and create a social network with the local community (Chen et al., 2021). Considering that socialization between the host society increased the SWB of international students (Hendrickson et al, 2011), it is

plausible that CC functions as a moderator regarding social interaction among the host society, international students, and their SWB.

Another possible explanation of the effect might be that international students with greater cultural distance have increased difficulty in navigating themselves in a new environment (Chapdelaine & Alexitch, 2004). For example, international students from Asia have greater difficulty adjusting to a Western country than international students from another Western country. (Ye, 2006). By improving CC, they counterbalance the barrier of cultural differences between them and other cultures, and as a result, they are socially adjusted more easily and boost their SWB. In other words, CC might enhance international students' SWB by helping them adjust more easily to the new environment.

Limitations

One limitation of the study is its external validity. The sample was mostly international students, studying at the University of Groningen, in the Netherlands. So, the results cannot be generalized to the entire country. Future research should replicate the study with a sample of other Dutch universities such as the University of Amsterdam or the University of Utrecht.

Lastly, the post hoc analysis suggested that the nationality of participants is a hidden moderator and as a result, it influences the current data set. In the subgroup of German international students, the support of co-nationals and Dutch individuals was significantly correlated with SWB. In contrast, in the subgroup of non-German international students, the support of other international students and Dutch individuals was significantly correlated with SWB. Considering the previous finding, it is possible that support from all three groups contributes to the SWB of international students under different conditions and situations. Therefore, the nationality of international students should be controlled for.

Future research and implications

The current study measures the SWB of international students at a single moment in time. Considering that two components of SWB, namely positive and negative effects, are moderately influenced by recent circumstances, they can differ between two time periods (Diener et al., 2006). It would be interesting for future research to conduct a longitudinal study in order to explore which social source positively impacts internationals' SWB in the short turn and long run respectively.

Other interesting results that could further be explored were CC's components and SWB. The current results indicated that only awareness and skills contribute to international students' SWB and knowledge was not a significant predictor of their SWB. One potential reason for this is that the current sample is mostly European, and the cultural cap among international students and Dutch society can be overcome by only spreading awareness and learning a few new skills to navigate themselves into different cultures. Therefore, future research could further explore how different elements of CC can have an impact on the SWB of international students depending on how similar or dissimilar an international student's culture is to the new host society.

Between multiple sources of emotional support, namely from internationals, co-nationals, or Dutch people, only the last source increased international students' SWB. Therefore, it is critical for their SWB to apply successful interventions that increase the contact between the host society and international students. However, local students struggle to interact with international students given their cultural differences in private and cultural norms (Pepanyan et al., 2019). More research should be dedicated to a training program offered to domestic students to decrease the gap between them and international students.

The university can promote contact between international and Dutch students. Even so, simply encouraging co-existence between international and Dutch students will not automatically improve their relationships (Leask, 2009). Evidence-based interventions can actively improve their interaction in the form of, for example, online peer-pairing programs

(Leask, 2009). This program matches international students with domestic students, who are attending the same university. During this program, the task of each pair is to study a particular course, through email or video call prior to arrival.

CC was also another significant predictor of SWB, so it is also critical that interventions will improve CC. One way to improve the CC of international students is through the university offering a training program (Dimitrov et al., 2014). At the beginning of this program, the awareness of internationals about their culture and how it impacts their life as well as the existence and significance of other cultures is followed up by expanding their knowledge about a variety of cultures in a non-judgmental way. For example, in Asian culture a holistic way of thinking is encouraged, in contrast to Western culture where a more deductive way of thinking is encouraged. This cultural difference will have an impact on the writing style of international students and since students often work in a group, different thinking styles might cause miscommunication among international students. Another part of the program improves the CC skills of international students by engaging in exercises. For example, an exercise would be that international students would examine an issue from their ethnic perspective, communicate their thoughts in class, and then since they came into contact with different approaches, they can apply a different perspective to the same issue. Another exercise would be that a student provides verbal feedback to several other students according to their communication style.

Conclusion

In conclusion, despite the limitations, the present study contributes to the literature on international students. As a vulnerable group, international students need attention to their unique issues. As a result, their mental health is declining, as well as their SWB. The results of the present study suggest that spending quality time, forming a meaningful relationship with Dutch people, and increasing the awareness of cultural differences can have a positive impact on the SWB of international students. Lastly, a strength of the study lies in the

comparison of sources of social support for international students. Contrary to the majority of studies, our study distinguishes the effect of social support among co-nationals, Dutch and international people. Our study tests them collectively, which allows for a direct comparison among them. This comparison could be utilized either by providing insight into how different groups of people provide social support or by identifying the most effective group for providing emotional support.

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Appendix A

Appendix A includes a table, which is used in the main analysis.

{Table 1.}

Pearsons correlations, means and standard deviations of the measured variables.

	1.	2	3.	4.	5.	6.	7.	8.	9	10	11
1.SWB.	X	.199*	.265*	.007	.130	-.10	.117	.230*	.63	-.98	.162
2.Frequency Dutch	.199*	X	.429*	-.050	-.158	.245*	-.102	.060	.380**	-.224**	.099
3.Support Dutch	.265*	.429*	X	-.048	.156	.118	.304**	.088	.135	-.125	.070
4.Frequency Con.	.007	-.050	-.048	X	.653**	-.171	-.155	.016	-.062	.03	-.031
5.Support Con.	.130	-.158	.156	.653**	X	-.244**	.067	.066	-.149	.056	.026
6.Frequency Inter.	-.010	.245**	.118	-.171*	-.244**	X	-.370**	-.289**	.198*	-.203*	.259**
7.Support Inter.	.117	-.102	.304**	.155	.67	.370**	X	.397**	.038	.101	.057
8.CC	.230*	.060	.088	.016	.066	-.289**	.397**	X	.203	.858	.522
9. Covid Netherlands	.063	.380**	.135	-.062	-.149	.198*	.038	.117	X	-.153	-.053
10.Intention to stay	-.98	-.224*	-.125	.030	.056	-.203*	.101	.017	-.153	X	-.246**
11.Length of staying	.162	.099	.070	-.031	.026	.259**	.057	.060	-.053	-.246**	X
N	131	134	134	134	133	134	134	120	134	134	131

	1.	2	3.	4.	5.	6.	7.	8	9	10	11
M	4.1	2.3	4.1	4	5.6	3.1	5.1	2.9	4	2.4	2.1
SD	.73	1	1.4	.93	1.1	1.4	1.5	.4	.75	.74	1.3

**p<0.1, *p<0.05

Appendix B

Appendix B includes two tables, which is used in the main analysis.

{Table 2.} Only non-german international.

Pearsons correlations, means and standard deviations of the measured variables.

	1.	2	3.	4.	5.	6.	7.	8	9	10	11
1.SWB	X	.220	.296*	-.087	-.022	.178	.380**	.305*	.128	-.163	.137
2.Frequency Dutch	.220	X	.435*	.035	-.148	.346*	.079	.107	.385**	-.236*	.121
3.Support Dutch	.296*	.435*	X	-.043	.109	.148	.296**	-.036	.118	-.180	.052
4.Frequency Con.	-.087	.035	-.043	X	.627**	-.197	-.105	.156	.066	.015	-.105
5.Support Con.	-0.22	-.148	.109	.627**	X	-.247**	.068	.094	-.059	.062	-.067
6.Frequency Inter.	.178	.346**	.148	-.197*	-.247	X	-.490**	-.373**	.176	-.132	.246*
7.Support Inter.	.380**	.079	.296**	-.105	.068	.490**	X	.347**	.125	.091	.023
8.CC	.305*	.107	-.036	-.373**	.347**	.156	.094	X	.150	-.072	.113
9. Covid Netherlands	.128	.385**	.118	.176	.125	.066	-.059	.150	X	-.150	-.217

10.Intention to stay	- .163	-.236*	-.180	-.132	.091	.015	.062	-.072	-.150	X	-.254*
11.Length of staying	.137	.121	.052	-.105	-.067	.246*	.023	.113	-.217	-254*	X
N	74	77	77	77	76	77	77	66	77	77	74
M	3.9	2.4	4.2	4.1	5.8	2.6	4.6	2.9	4.2	2.4	2.1
SD	.7	1	1.4	.92	1	1.4	1.7	.5	.7	.8	1.3

**p<0.1, *p<0.05*

{Table 3.} German International

Pearsons correlations, means and standard deviations of the measured variables.

	1.	2.	3.	4.	5.	6.	7.	8.	9	10	11
1.SWB.	X	.241	.265*	-.093	.287**	-.214	-.093	.147	.059	-.004	,119
2.Frequency Dutch	,241	X	,412**	-,004	-,043	,060	-,393**	-,030	,331*	-,199	,077
3.Support Dutch	,265*	,412**	X	,007	,380**	,057	,300*	,249	,137	-,025	,099
4.Frequency Con.	-,093	-,004	,007	X	,504**	,022	-,014	-,137	-,024	,016	,057
5.Support Con.	287*	-,043	,380**	,504**	X	-,130	,336*	,105	-,152	,009	,214
6.Frequency Inter.	-,214	,060	,057	,022	-,130	X	,194	,161	,171	-,317*	,292*
7.Support Inter.	-,093	-,393**	,300*	-,014	,336*	,194	X	,470**	-,134	,148	,105
8.CC	,147	-,030	,249	-,137	,105	,161	,470**	X	,057	,178	-,015

9.Covid Netherlands	,059	,331*	,137	-,024	-,152	,171	-,134	,057	X	-,151	,172
10.Intention to stay	-,004	-,199	-,025	,016	,009	-,317*	,148	,178	-,151	X	-,233
11.Length of staying	,119	,077	,099	,057	,214	,292*	,105	-,015	,172	-,233	X
N	57	57	57	57	57	57	57	54	57	57	57
M	4,20	2,09	4,07	3,84	5,69	3,81	5,33	2,88	3,88	2,44	2,1
SD	,7	1	1,4	1,01	1,05	,91	1,17	,38	,75	,65	1,3

**$p<0.1$, *$p<0.05$

Appendix C

Two scatterplots are used to check the linearity of independent variables (social support and

frequent contact from Dutch people and CC respectively) and the dependent variable (SWB).

Figure C1

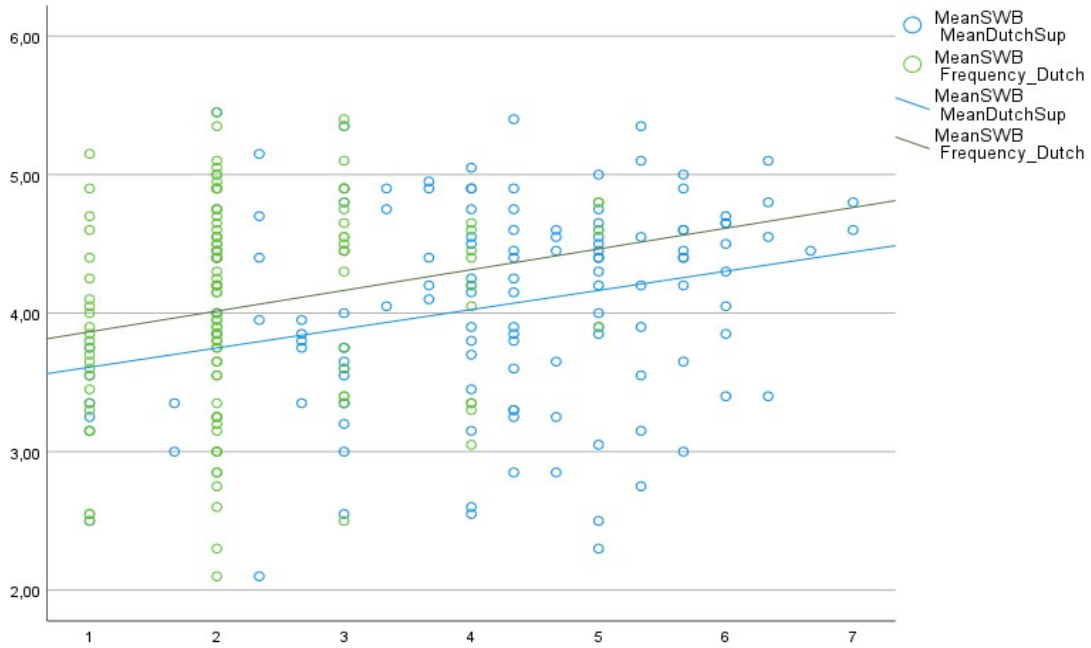*Scatterplot between social support and frequency contact from Dutch people and SWB.*
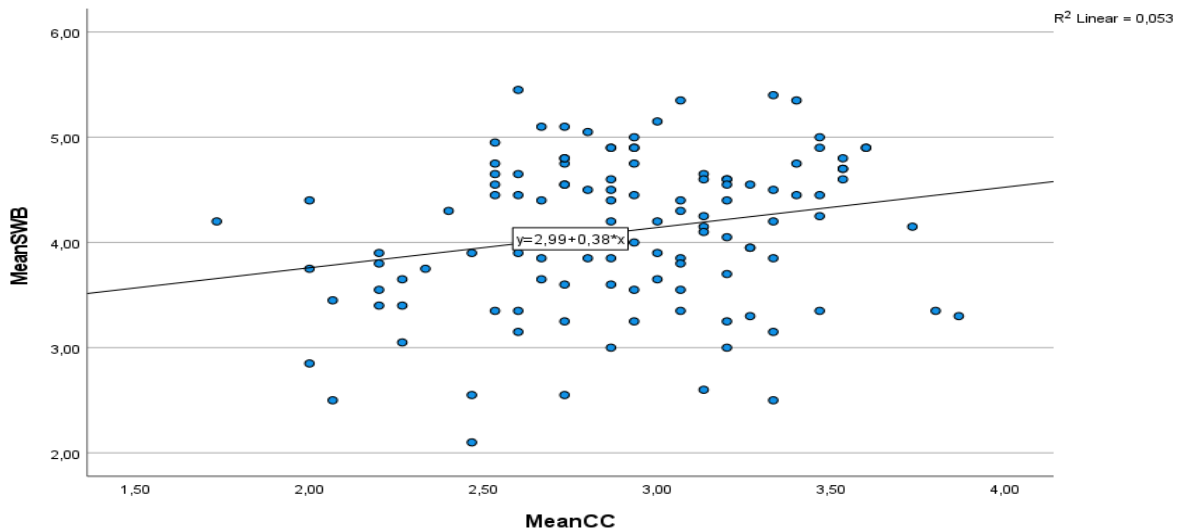

Figure C2

Scatterplot between CC and SWB

From graphs, C1, and C2. It can be concluded that support and frequency of contact from Dutch people and CC have a linear relationship with the SWB.
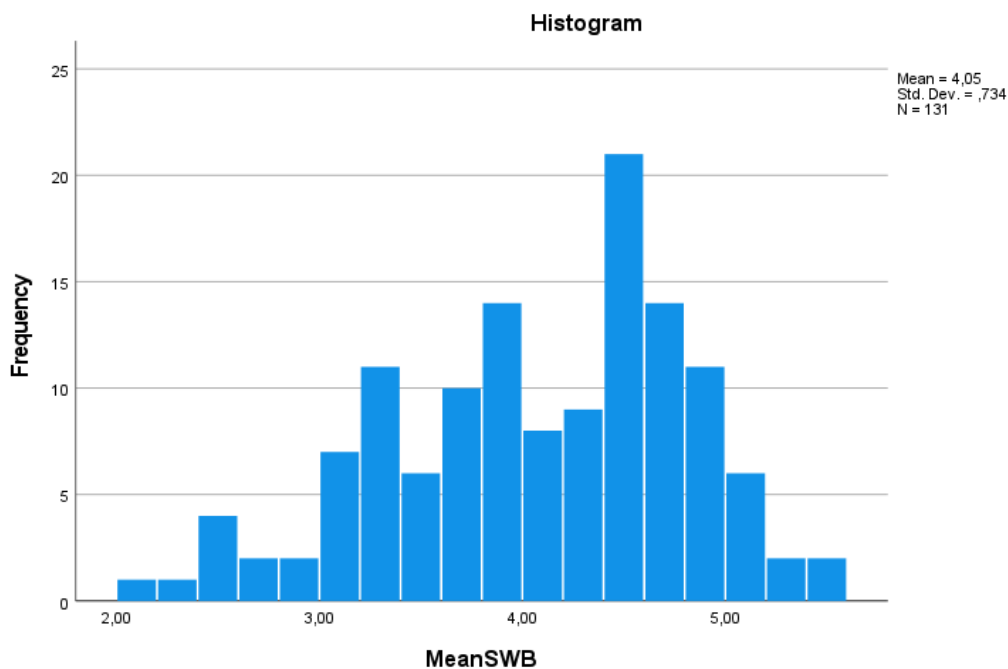
Appendix D

{Table 4.}

Tests of Normality

Kolmogorov-Smirnova Shapiro-Wilk	Statistic	df	Sig.	Statistic	df	Sig.
MeanSWB	.111	131	<,001	.976	131	.018

a Lilliefors Significance Correction

According to the previous table, p = .018 is smaller than 0.05. Consequently, the normality is violated. However, the residuals of the SWB deviate slightly from the normal distribution as it is visible in the following histogram. Given that they only differ slightly, we can continue with our analysis.

Figure D1

Histograph of SWB

Appendix E

In order to check Multicollinearity, table one is used. Every correlation in the table, among the independent variables, is smaller than 0.70. Therefore, the independent variable is not too highly correlated with each other and the assumption is met.

Appendix F

In order to check if residuals are independent of each other, the current analysis is used.

{Table 5.}

_____

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,375	,140	,086	,68535	1,991

a Predictors: (Constant), MeanCC, Frequency_Conationals, Frequency_Dutch, Frequency_Internationals, MeanDutchSup, MeanInteSup, MeanConSup

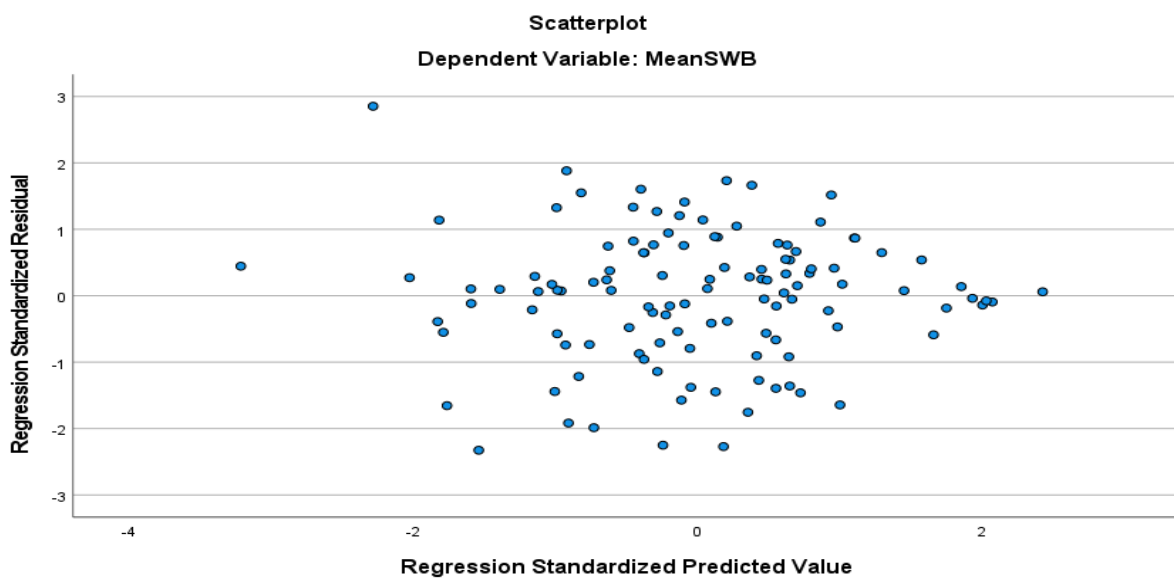b Dependent Variable: MeanSWB

The number Durbin-watson is 1.991. Therefore there is no autocorrelation between the data.

Appendix G

The last assumption was homoscedasticity, which checks if the residuals are equal across the regression line. As it appears in the G2 graph this assumption is met.

Figure G1

Standardized Residual Plot

Figure G2
Normal P-P Plot of Regression Standardized Residual

Normal P-P Plot of Regression Standardized Residual
Dependent Variable: MeanSWB