

**The importance of Contact with Natives for International students**

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**Abstract**

It is known that social contacts and subjective well-being are connected. One group that is known to have lower subjective well-being is international students. A group that has lower subjective well-being is international students. In this study, we looked into the relationship between different groups of social contacts of internationals and subjective well-being within the Netherlands. We suspected that different social contact groups (host-nationals, co-nationals, and other international students) would positively influence subjective well-being via different mechanisms. Additionally, we investigated whether depressive symptoms could mediate the relationship between general social capital and subjective well-being. We shared a cross-sectional online questionnaire with international students in the Netherlands ( $N = 134$ ) and ran a multiple regression analysis to test our hypotheses. By looking into the relationship between social contact between internationals with Dutch people, other international students, and co-nationals, this study established that especially perceived social support from Dutch people has a significant effect on subjective well-being in international students in the Netherlands. Our study did not find support for contact with other internationals and co-nationals to be significant predictors of subjective well-being in international students. Furthermore, depressive symptoms were not found to be a significant mediator in the relationship between general social capital and subjective well-being. The study suggests the importance of having contact with natives for international students for their subjective well-being. Future research into social capital and subjective well-being should focus on replicating our results in more countries and within different cultures (collectivistic, pluralistic).

*Keywords:* Social capital, subjective well-being, international students, depressive symptoms

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### **The Importance of Contact with Natives for International Students**

The Netherlands draws a large number of international students from throughout the world. Adapting to a new environment and culture is not simple. Previous years' COVID pandemic demonstrated the common difficulties among these international students; one-third of international students said they felt lonely and depressed during this time (Nuffic, 2022). According to Nuffic (2022), international students reported being dissatisfied to study in the Netherlands most likely due to stress and lack of support from other international students. Vice versa, international students who felt more connected to their peers and were content with their social lives were substantially happier. As international students are known for having lower well-being, but also fewer social contacts (Ba ĩt a řescu 2007; Diener et al., 1999, 277; Hendriks 2015; Hendriks et al., 2016; Smith & Khawaja, 2011; Tegegne & Glanville, 2019), it is crucial to further investigate. Especially since international students are not well-studied on this topic of social contacts and well-being.

Additionally, in the general population social contacts and support are considered key factors in one's overall well-being as well (Argyke, 2013; Myers, 2000; Richardson et al., 2022; Sun et al., 2020). Research indicates that receiving support from important others is positively correlated with happiness (Siedlecki et al., 2014; Wang, 2016). Thus having a social network is critical for well-being. As international students are a vulnerable group for lower well-being, we will be looking into the link between social capital and subjective well-being in international students. In this research, we aim to shed more light on this particular group and look into the contribution of different parts of social capital to subjective well-being. We will be doing this by looking at social capital regarding international students' contact within three different groups: Dutch people (natives), co-nationals, and other international students. Additionally, we will be looking into the role of depressive symptoms as a potential mediator in the relationship between social capital and subjective well-being.

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### **Subjective well-being**

Immigrants are known to have lower subjective well-being in comparison with natives (Bałt, a ȧtescu 2007; Hendriks 2015; Hendriks et al., 2016). This makes subjective well-being an important concept to look into (Bałt a ȧtescu 2007; Hendriks 2015; Hendriks et al., 2016). Subjective well-being is a broad term that encompasses people's emotional responses, domain satisfactions, and overall assessments of life satisfaction (Diener et al., 1999, 277). Subjective well-being impacts a wide range of behavioral traits and life outcomes (De Neve et al., 2013). Higher levels of subjective well-being, for example, impact future health, mortality, productivity, and earnings. In addition, predictions in the other direction, from health, productivity, and earning. to subjective well-being are also favorable, assisting in the creation of feedback loops that may increase happiness in the long term (De Neve et al., 2013).

International students face more challenges in developing a social network than natives do within their country (Smith & Khawaja, 2011). There are known barriers for international students in establishing new friendships, such as language barriers (Chen, 1999; Mori, 2000), personality variables, and cultural norms (Brisset et al., 2010; Wang & Mallinckrodt, 2006; Ying & Han, 2006). These barriers contribute to smaller social networks and lower levels of social contact in immigrants compared to natives (de Vroome & Hooghe, 2014; Vega et al., 1987).

### **Social capital**

Social capital is referred to as networks of personal relationships and contacts (Bourdieu, 1986; Coleman, 1988; Portes, 1998). It either empowers or constrains behaviors and goals. Social capital is a conceptually ambiguous term that researchers measure in various ways (Chu et al., 2018). Putnam (1995) distinguishes between bonding and bridging social capital. Previous research has highlighted the need of distinguishing between distinct

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forms of social capital (bonding and bridging) in understanding the underpinning processes by which social capital influences health (Kawachi et al., 2008).

Bonding social capital refers to social connections between socially similar individuals, such as homogeneous groups with common characteristics such as ethnicity, age, gender, and social class (Putnam and Goss, 2002). Bonding social capital forms cohesive networks (McPherson et al., 2001). In this way, bonding social capital provides emotional and instrumental support that would otherwise be unavailable outside a small network of friends and family (Ferrucci et al., 2020; Kim et al., 2017). In the light of our research, this would mean international students' contact with co-nationals: people from the international students' own country.

In contrast, the connections between people from different backgrounds are referred to as bridging social capital (Putnam, 2000; Szreter & Woolcock, 2004). According to Yang and Hanasono (2021), bridging social capital helps individuals to reach out for help instead of coping with difficulties alone and provides instrumental support. Bridging social capital tends to rely on weaker ties (Douceirain et al., 2021). This means that it relies on fewer close friends. In addition, when people engage more in bridging social capital, it might promote assertive coping (Yang & Hanasono, 2021). In this way, it can be expected that bonding and bridging social capital will impact subjective well-being differently. In our research, this entails international students' interactions with Dutch people or other international students.

### ***Quantity and quality of social capital***

Furthermore, social capital can be measured in terms of quantity and quality. The quantity of social capital refers to the number of social relationships a person has (Sun et al., 2020). Sun and colleagues (2020) discovered that people who engaged with more people more regularly felt happier and socially connected. However, some social interactions are associated with greater well-being than other interactions. When people have deeper

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dialogues, self-disclose more, and know their interaction counterparts better in social encounters, they tend to feel happier and more socially engaged (Sun et al., 2020). This demonstrates the importance to consider also the quality of social capital, rather than simply contact frequency.

The quality of social capital refers to a variety of factors, such as what happens during a social encounter and with whom it is shared. Social interactions are not equal, but they are flavored by conversational features, relational features, and the purpose of interaction (Sun et al., 2020). Social support, which is regarded as a signal that one is cared for, loved, valued, and a member of helpful networks, can be used to assess the quality of social contact. According to Cobb (1976), such an environment protects people by coping with health issues such as depression (Richardson, 2022). People have a universal basic need to sustain strong, secure interpersonal relationships (Baumeister & Leary, 1995). By this, it was found that people who report that their relationships are more satisfying and supportive tend to report greater subjective well-being (Lyubomirsky et al., 2005). Thus it is important to consider both the quality and quantity of social capital when assessing the contacts of international students and their effect on well-being.

### **Social capital and Subjective well-being in International students**

As noted previously, studies of the subjective well-being of immigrants revealed disadvantages for immigrants in Europe (Bałtă Țescu 2007; Hendriks 2015; Hendriks et al., 2016), meaning that immigrants tend to have lower subjective well-being than natives. These disparities in subjective well-being between immigrants and natives may be explained by examining the social capital discrepancies between these groups (de Vroome & Hooghe, 2014; Vega et al., 1987). Furthermore, Kashima and Loh (2006) discovered that the more social contacts international students made in their host country, as well as with other international students, the better psychologically they adjusted.

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From this follow the following hypotheses:

**Hypothesis 1.** The more contact international students have with Dutch people, the higher their subjective well-being will be (bridging).

**Hypothesis 2.** The more contact international students have with other international students, the higher the subjective well-being (bridging).

**Hypothesis 3.** The more contact international students have with members of their own country (co-nationals) the higher their subjective well-being (bonding).

### Depression as a mediator

Depression could be another important factor in the link between social capital and subjective well-being, as one of the most common complaints of international students who were seeking counseling was depressive symptoms (Smith & Khawaja, 2011). Furthermore, Pettit and colleagues (2011) discovered in their longitudinal study, where they followed the course of depressive symptoms and perceived social support in America, that emerging adults (ages 21-30), who experienced increases in perceived social support, were more likely to experience decreases in depressive symptoms. In support of this, it was found that international students in Hong Kong that had contact with local citizens could prevent depressed moods (Cheung & Yue, 2013). Thus, it is probable that higher social capital predicts fewer depressive symptoms.

Although depressive symptoms and subjective well-being overlap, the Two-Continua Model of Mental Health considers them to be separate concepts (Keyes, 2007). According to the Two-Continua Model, psychological discomfort (e.g. depressive symptoms) and psychological well-being contribute to our understanding of human health in related but distinct ways (Westerhoff & Keyes, 2010). This indicates that adolescents who experience fewer depressive symptoms are not always associated with greater mental health (Westerhof & Keyes, 2010). In support of this, Wilkinson and Walford (1998) discovered that measures



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of psychological distress (e.g., negative affect) and measures of psychological well-being (e.g., positive affect) in youth are empirically distinct, implying that the presence of one is not synonymous with the lack of the other, and the other way around. Even though the two are distinct concepts, depressive symptoms, and subjective well-being are negatively correlated (e.g. Gigantesco et al., 2019). Weijers and colleagues (2020) looked into depressive symptoms and well-being of major depressive disorder outpatients in the Netherlands before treatment and 6 months later. They found moderate negative correlations between depressive symptoms severity and well-being in their research at baseline and strong correlations at follow-up. Thus it is evident that depressive symptoms and subjective well-being are related.

In sum, social capital is related to depressive symptoms, depressive symptoms are related to subjective well-being and social capital is related to subjective well-being.

Therefore we predict the following:

**Hypothesis 4.** In international students, the relationship between social capital and subjective well-being is mediated by depressive symptoms.

### The present research

This research will be looking into the relationship between social capital and subjective well-being in international students as there are studies that showed a significant relationship between these two concepts. We will look into depressive symptoms as a mediator in the relationship between social capital and subjective well-being. The present study contributes to the existing literature in the following ways: Firstly, within the realm of published studies looking into social capital and subjective well-being, not many have investigated the individual impact of bonding and bridging capital on subjective well-being (Richardson et al., 2022). We will also look into multinational friendships, which is also a new addition to the current literature (Hendrickson et al., 2011; Kasima & Loh, 2006). There

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is also a scarcity of studies on this topic among international students. Another new element we will be exploring is the fact that English is a second language in the Netherlands which may make it more difficult to form bonds with locals for international students. The current study aims to fill these gaps.

### Methods

#### Participants and design

The sample of this study consisted of international students who study in the Netherlands. A total of 140 participants took part in this study. Two participants were excluded due to being Dutch and four were excluded for not being longer in the Netherlands than six months. In this way, 134 participants remained to be included in the data analysis (females 60.6%, males 35.8%, 2.2% other). Their mean age was 21.66 (ranging between 18 and 30,  $SD = 2.26$ ). The following cities in the Netherlands were home to the majority of international students: Groningen ( $N = 114$ ), Utrecht ( $N = 5$ ), and Leeuwarden ( $N = 3$ ). Most international students came from the following countries: Germany ( $N = 54$ ), Romania ( $N = 7$ ) and Italy ( $N = 7$ ).<sup>1</sup>

The participants were approached in two ways. Firstly, through an online platform that allows psychology students to earn credits by participating in psychology research. Moreover, participants were recruited people through social media by students that were collaborating on this bachelor thesis. Participants were asked to fill in an online questionnaire in Qualtrics. No monetary compensation was offered to participants.

#### Materials and procedure

This research was part of a bachelor thesis and the questionnaire was made in collaboration with another bachelor thesis group. In this way participants also filled in

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<sup>1</sup> Other international students in our sample came from the following countries: Albania, Austria, Brazil, Bulgaria, Canada, Croatia, England, Finland, France, Greece, Hong Kong, Hungary, India, Indonesia, Ireland, Jordan, Latvia, Lithuania, Moldova, New Zealand, Norway, Palestine, Poland, Russia, Singapore, Slovenia, South Africa, South Korea, Suriname, Sweden, Syria and the United States of America.

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questions that are irrelevant to our research topic, as also other variables were assessed<sup>2</sup>.

Before recruiting participants, ethics approval was obtained from the Ethics Committee of Psychology at the University of Groningen. To begin, participants were asked to fill in an online questionnaire in Qualtrics, which they could click on the link or scan a QR code.

Participants then read about the main focus of the study, namely looking into social capital and subjective well-being. After the participants provided informed consent, they gained access to the questionnaire. Firstly they provided demographics, such as age, gender, and origin country. The questionnaire took around 20 minutes to complete. They could terminate the survey at any time without any justification. The responses remained anonymous.

### ***Social capital: social support and contact frequency***

To measure social capital we looked at the social support (quality of social contact) and quantity of the participants' social contacts. We utilized a seven-point scale (Haslam et al., 2005) to operationalize social support. Participants rated social support they experienced from Dutch people active (Cronbach's  $\alpha = .876$ ), co-nationals active (Cronbach's  $\alpha = .953$ ), and other international students active (Cronbach's  $\alpha = .927$ ) on a seven-point Likert-scale, ranging from *strongly disagree* to *strongly agree*. An example of a used item: "Do you get the emotional support you need from Dutch people?". We combined the scores of each participant of every social support group by taking the mean to create the variable social capital.

To operationalize the quantity of social contacts, we looked into the reported frequency of contact with either co-nationals, other international students, and the host society. For example: "How often do you talk to several Dutch people in one day?".

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<sup>2</sup> While these variables will not be discussed in this paper, related papers can be found in the grey database of the RuG.

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Participants rated the contact frequency with each group on a five-point scale, ranging from *never* to *always*.

### ***Subjective well-being***

Subjective well-being was measured by using the Positive and Negative Affect Schedule (PANAS-SF, Thompson, 2007) and the Satisfaction with Life Scale (SWLS; Diener et al., 1985). We did this to both capture the cognitive and affective component of subjective well-being. In the PANAS scale participants were asked to indicate the extent to which they generally felt upset, hostile, ashamed, determined, attentive, and active. This was used to measure negative affect. Positive affect was measured by asking respondents to indicate the extent to which they felt alert, inspired, determined, attentive, and active. Participants could rate this on a five-point scale ranging from *never* to *always*. The Cronbach alpha value for PANAS was  $\alpha = .624$ .

In addition, subjective well-being was assessed using the Satisfaction with Life Scale (SWLS), where participants had to rate their life satisfaction on a seven-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). An example of an item that was used: “In most ways my life is close to ideal”. The Cronbach alpha value was  $\alpha = .847$ .

We took the mean of both scales and combined them to create our subjective well-being measure (Cronbach’s  $\alpha = .818$ ).

### ***Depressive symptoms***

To assess depressive symptoms, we used the 10-item version of the Center of Epidemiologic Studies Depression Scale (CES-D-10; Andresen et al., 1994). Participants were asked to rate the frequency of experiencing depressive symptoms in the past week, on a scale ranging from *rarely or none of the time* (less than 1 day) to *most of the time* (5-7 days). An example item: “I was bothered by things that usually don’t bother me”. To compensate for the questions about loneliness and depressive symptoms, we included an item asking them

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to name a positive experience they had recently. The Cronbach alpha value for depressive symptoms was  $\alpha = .848$ .

### *Length of stay, intention to stay in the Netherlands and location*

Length of stay and intention to stay has been shown to affect well-being differently (Landesmann & Mara, 2013; Shamsuddin & Katsaiti, 2020). Furthermore, we included the proportion of time spent in the Netherlands to account for possible Covid effects. For this reason, we decided to include these variables in our analyses as control variables. We assessed the length of stay by asking in which year the participants arrived in the Netherlands. “Do you intend to stay in the Netherlands after your studies?”, was the item we used to measure intention to stay. Participants were asked to answer with either: ‘yes’, ‘no’, or ‘do not know yet’.

## **Results**

All analyses were run by using SPSS 28.0. All assumptions for Multiple Regression analysis were met (see Appendix). There were no outliers in the dataset.

### **Correlational Analysis**

To begin, we investigated the correlations between our independent variables and subjective well-being. Social support from Dutch people was found to be positively correlated with subjective well-being,  $r(132) = .265, p = .002$  (Table 1). Also contact frequency with Dutch people was found to be positively related to subjective well-being,  $r(132) = .199, p = .023$  (Table 1). Correlations between social support from co-nationals,  $r(132) = .130, p > .05$  and from other international students with subjective well-being were not significant (Table 1). Furthermore, correlations between social support from co-nationals,  $r(132) = .007, p > .05$ , and other internationals,  $r(132) = -.010, p > .05$ , with subjective well-being were not significant. Therefore, the following two hypotheses could be rejected:

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**Hypothesis 2.** The more contact international students have with other international students, the higher the subjective well-being (bridging).

**Hypothesis 3.** The more contact international students have with members of their own country (co-nationals) the higher their subjective well-being (bonding).

Furthermore, no control variables correlated significantly with subjective well-being and were therefore left out of the analysis.

### Inferential analyses

Hypothesis 1 was tested using multiple regression analysis. The independent variables social support from Dutch people and contact frequency with Dutch people were regressed on subjective well-being. A significant regression equation was found ( $F(2,128) = 5.53, p = .005$ ), with an  $R^2$  of .08. Support from Dutch people was found to be a significant predictor of subjective well-being,  $\beta = 0.115, t(128) = 2.36, p = .02$ . This supports the first hypothesis that more contact from Dutch people, the higher international students' well-being will be. However, contact frequency with Dutch people was not found to be a significant predictor of subjective well-being,  $\beta = 0.079, t(128) = 1.125, p = .263$ . Thus the following hypothesis could be confirmed:

**Hypothesis 1.** The more contact international students have with Dutch people, the higher their subjective well-being will be (bridging).

### Depressive symptoms as a mediator

To test the fourth hypothesis, that for international students the relationship between social capital and subjective well-being is mediated by depressive symptoms, we used the mediation model of Baron and Kenny (1986). To begin, it needed to be confirmed that there is a basic relationship between social capital and subjective well-being. Secondly, social capital had to significantly predict depressive symptoms. Thirdly, depressive symptoms must predict subjective well-being. These requirements were checked by running three regression

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models. Lastly, to confirm that there is a mediation, the relationship between social capital and subjective well-being should be weaker when depressive symptoms are included in the model than when it is not included (basis relationship). To check if the proposed mediation model suffices, the effect size of the mediation model was calculated to know how much of the relationship between social capital and subjective well-being could be explained by depressive symptoms.

Social capital did not appear to be a significant predictor of depressive symptoms (pathway a, Figure 4),  $\beta = -0.115$ ,  $t(132) = -1.926$ ,  $p = .056$ . Therefore we could not assess an indirect effect. However, general social capital could predict subjective well-being (pathway c, Figure 4). Social capital could explain a significant part of the variance in subjective well-being,  $R^2 = .065$ ,  $F(1, 128) = 8.863$ ,  $p = .003$ . Social capital appeared to be a significant positive predictor of subjective well-being,  $\beta = 0.205$ ,  $t(128) = 2.977$ ,  $p = .003$ . Additionally, we determined that depressive symptoms could predict subjective well-being (pathway b, Figure 4). Depressive symptoms could predict a significant part of the variance in subjective well-being,  $R^2 = .494$ ,  $F(1, 125) = 121.841$ ,  $p < .001$ . Depressive symptoms was a significant positive predictor of subjective well-being,  $\beta = -.866$ ,  $t(125) = -11.038$ ,  $p < .001$ . In short, this contradicted Hypothesis 4 that depressive symptoms mediate the relationship between social capital and subjective well-being.

## Discussion

In this study, we looked into the relationship between social capital and subjective well-being in international students in the Netherlands. International students are known for having fewer social contacts and lower well-being (Bařtařescu 2007; Diener et al., 1999, 277; Hendriks, 2015; Hendriks et al., 2016; Smith & Khawaja, 2011; Tegegne & Glanville, 2019). That is why it is important to look into this relationship among international students, especially because they are not well studied on this topic. It is necessary to distinguish

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between different forms of social capital: bonding and bridging social capital (Kawachi et al., 2008). In this way, we can understand the underpinning processes by which social capital influences mental health. Therefore we expected that bonding and bridging social capital would impact subjective well-being by influencing subjective well-being via different mechanisms (Ferrucci et al., 2020; Kawachi et al., 2008; Kim et al., 2017; Yang and Hanasono, 2021).

We hypothesized that international students who have more contact with Dutch people have higher subjective well-being (Hypothesis 1). Our research findings were consistent with this hypothesis. However, our analysis did not find support for the hypothesis that the more contact international students have with other internationals (Hypothesis 2) or co-nationals (Hypothesis 3), the higher their subjective well-being will be. Furthermore, contact frequency was not a significant predictor of subjective well-being. Thus, we found that perceived support (quality) from rather than contact frequency (quantity) with Dutch people is more important.

Moreover, we examined whether depressive symptoms could mediate the relationship between social capital and subjective well-being. However, we did not find support for this mediation model, due to the non-significance of the relationship between social capital and depressive symptoms (see Figure 4).

To begin, the first hypothesis: social contact with Dutch people predicts higher subjective well-being in international students was confirmed. Especially perceived support from Dutch people seems to be important. Possible explanations for this finding are that Dutch people provide instrumental support and tools to adapt to the Dutch culture and therefore international students' well-being is higher (Szabó et al., 2020; Yang & Hanasono, 2021).



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In contrast, it was unexpected that social contact with co-nationals and other international students did not predict subjective well-being. Particularly, since bonding and bridging social capital have to be considered as differing in their effects on subjective well-being (Doucerain et al., 2021; Ferrucci et al., 2020; Kawachi et al., 2008; Kim et al., 2017; Yang & Hanasono, 2021). The non-significance of these two outcomes might be explained by the fact that the current study had a small sample size ( $N = 134$ ) and in this way, the statistical power was limited (Bender et al., 2019). Thus, bigger sample sizes should be used to replicate these findings.

Moreover, a possible explanation for the rejection of our second hypothesis could be because of the COVID pandemic. Due to the pandemic, education at universities was being taught online, instead of physically at the university. Therefore, international students might not have gotten enough opportunity to make contact with other internationals, as there was little to no face-to-face interaction (Elmer et al., 2020). Thus, internationals did not get to develop meaningful relationships with other international students and therefore it might have influenced the relationship with subjective well-being. A reason why we did find this to be the case with Dutch people, could be that most international students went back home during the Corona pandemic and were abroad. In contrast, Dutch people were at home in the Netherlands, and in this way international students had more chances to develop meaningful relationships with Dutch people.

Furthermore, a possible explanation for the rejection of Hypothesis 3 could be that the lack of close relations with host-nationals makes the adjustment process more difficult when someone has only contact with other internationals and co-nationals (Maudeni, 2001; Hendrickson et al., 2011). In this way, little support from Dutch people, but instead from co-nationals and other international students, might be detrimental to the adaptation to the Dutch culture and therefore it might lead to international students' lower subjective well-being.

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Furthermore, it is well-documented that when people interact with co-nationals more frequently, they suffer from more homesickness (Hendrickson et al., 2011). As a result, it is reasonable to assume that they will have lower subjective well-being (Maundeni, 2001). However, in our study, we saw a positive, yet nonsignificant, correlation, which could indicate that the more social support one gets from co-nationals the more subjective well-being. It might be that contact with co-nationals works differently for people, some get more homesick (a negative effect) and some do find it to be improving their well-being (a positive effect). This could potentially explain why there is a general null effect.

Lastly, the lack of a mediation effect of depressive symptoms on the relationship between social capital and subjective well-being was also striking. Although there is a lot of literature suggesting a link between social capital and depressive symptoms, this study revealed no such link (Cheung & Yue, 2013; Pettit et al., 2011). This conclusion might be explained by the fact that our sample contained people of many different nationalities and cultures. It has been demonstrated that the sense of loneliness, which is strongly related to depressive symptoms, differs across collectivistic and individualistic cultures (Lykes & Kemmelmeijer). For example, Heu and colleagues (2019) found that individuals that originate from a collectivistic society, experience lower loneliness than individuals from an individualistic culture. In this way, it may be expected that because our sample includes many cultures, but they experience loneliness differently, it would cancel the effects on subjective well-being out. Most other research that did find a significant correlation only looked into one culture (Cheung & Yue, 2013). As a result, it may be worthwhile to investigate the influence of other cultures on this connection in the future.

The finding that contact with Dutch people is a positive significant predictor of subjective well-being in international students is in line with existing research. In general, it has been proven that social contact has a substantial link to subjective well-being (Siedlecki et al.,

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2014; Wang, 2016). This conclusion was replicated in our study: those who receive more social support from significant others are happier than those who receive less social support. We contribute to the current research by suggesting that social relationships with natives may be more important for international students' well-being than interactions with other international students or co-nationals. This also emphasized the need of distinguishing between bridging and bonding social capital for international students, as well as the unique effect of these two notions (Kawachi et al., 2008; Putnam, 1995). Furthermore, it adds to the literature that the quality of social capital may have a greater impact on subjective well-being than the quantity of social capital for international students in the Netherlands (Sun et al., 2020). Lastly, we also add to the literature that we did not find a significant relationship between social capital and subjective well-being across groups: co-nationals and other international students. In sum, our findings highlight the necessity of having qualitative social interactions with natives for international students.

### **Limitations**

There are limitations to this study that need to be addressed. To begin with, a limitation was the use of a cross-sectional design, which reduced our explanatory power in terms of causality. It also implies that the timeframe in which the respondents completed the survey is not guaranteed to be representative. In the future, a longitudinal approach may be used to gain a better understanding of the changes in respondents' subjective well-being over time. Furthermore, it could insight into how different forms of social capital might play different roles at different stages of integration. Also, a longitudinal approach can be used to better investigate the specific direction of the potential causal path.

Secondly, another limitation was the use of a convenience sample, which limited our ability to apply the findings of our study to the whole international student population. It might also indicate that the results are biased as a result of self-selection. In the future,

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sampling bias can be minimized so that it may be used in conjunction with probability sampling.

Lastly, another limitation was that our research was confined to Dutch universities. It is probable that students from universities from different parts of the world, or those who attend other types of schools, face distinct social conditions (Kashima & Loh, 2007). This could in turn impact their subjective well-being differently. Therefore, the results of the present studies cannot be generalized to the international student population in general.

### **Suggestions for Future Research and Implications**

Future studies should be conducted in different countries and cultures. To begin, in our study there were a lot of people coming from an individualistic culture and there were few participants that came from a collectivistic culture. It is possible that when there are more people from a collectivistic culture are included, a different outcome might emerge, such as a significant and stronger relationship between support from co-nationals and subjective well-being.

Another option is to carry out the same research in a different country. Pluralistic cultural countries, for example, provide greater opportunities for students to develop local contacts. These countries provide an environment in which international students are more likely to keep their cultural behavioral patterns (Miller et al., 1987) and are less pressured to adapt to the expectations of the host culture (Kim, 2001). It is possible that when differences between international students and the host country are more tolerated, international students have an easier time forming friendships with host nationals. As a result, overseas students may feel more accepted by the majority culture, leading to increased subjective well-being.

Moreover, social skills are a big influence on one's ability to make social contacts or not. In the future, it would be interesting to see whether social skills are a moderator in the relationship between social capital and subjective well-being in international students.

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Especially, whether they then find more support from co-nationals rather than other internationals and host-nationals.

Finally, longitudinally applying the current research would allow us to make causal predictions and examine how social capital changes over time. The international students would then be asked which group they have the most interaction with, and we would track how this changes over time. For example, it is reasonable to assume that the longer they stay in the host country, the more interaction they will have with host nationals and other internationals as opposed to with co-nationals. Vice versa, when they first arrived in the host country, it would be expected that they have more co-national friends. Furthermore, it has been demonstrated that immigrants change when they reside in a new country (Kim, 2001). It would be interesting to look into this further and see if this shift from contact with the group is accompanied by an increase in subjective well-being.

The findings of our study encourage the development of initiatives to boost international students' social interactions with locals to improve their well-being. To begin, the study findings may be valuable to educators who work with international students. More specifically, international students might profit from intercultural training prior to arriving in the country they will be studying in. In this way their chances of developing friendships with locals might be improved, however, there needs to be more research to establish the effectiveness of intercultural training. Furthermore, universities may encourage housing where foreign students are matched with Dutch students, allowing natives and international students to interact much sooner and more frequently (Hendrickson, 2011). This is consistent with the contact hypothesis (Allport, 1952), which proposed that housing might facilitate increased contact between persons from various groups. This would then in turn increase the liking for one another. Lastly, another possible implication is that the government may enhance financial support for student associations that welcome both native and international

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students as members. This encourages interaction between the two groups as well. Thus, when the interaction is increased between natives and international students, you may improve the subjective well-being of international students.

### **Conclusion**

As the Netherlands draw a lot of international students, a group that is shown to have lower well-being, it is important to understand how contact with different social groups influences their subjective well-being. By looking into the relationship between social contact between internationals with Dutch people, other international students, and co-nationals, this study established that especially perceived social support from Dutch people does have a significant effect on subjective well-being in international students in the Netherlands. However, our study did not find support for contact with other internationals and co-nationals to be significant predictors of subjective well-being in international students. Thus, this suggests the importance of having contact with natives for international students for their subjective well-being. Furthermore, it was found that depressive symptoms could not mediate the relationship between general social capital and subjective well-being in international students. Future research into social capital and subjective well-being should focus on replicating our results in more countries and within different cultures (collectivistic, pluralistic).

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### Appendix

#### *Assumption Check for the Multiple Regression Predicting Subjective Well-being from Support from Dutch People, Frequency of Contact with Dutch people*

In this section we will elaborate on why the assumptions of multiple regression have been met.

Firstly, the assumption of normality is not violated (Figure 1), both the histogram (Figure 2) and the P-P plot of the residuals show that the residuals are approximately normally distributed. The results need to be interpreted with caution, but the analysis is still acceptable to perform since regression is fairly robust against small deviations of normality.

Secondly, the scatterplots show that the assumption of linearity is also not violated, which can be seen in figure 3; none of the points fall outside of -3 and 3 on either the x- and y-axis (see Table 2).

Thirdly, the assumption of homoscedasticity was checked. The dots are distributed randomly around the line, which means that the assumption of homoscedasticity is also not violated (see Figure 3).

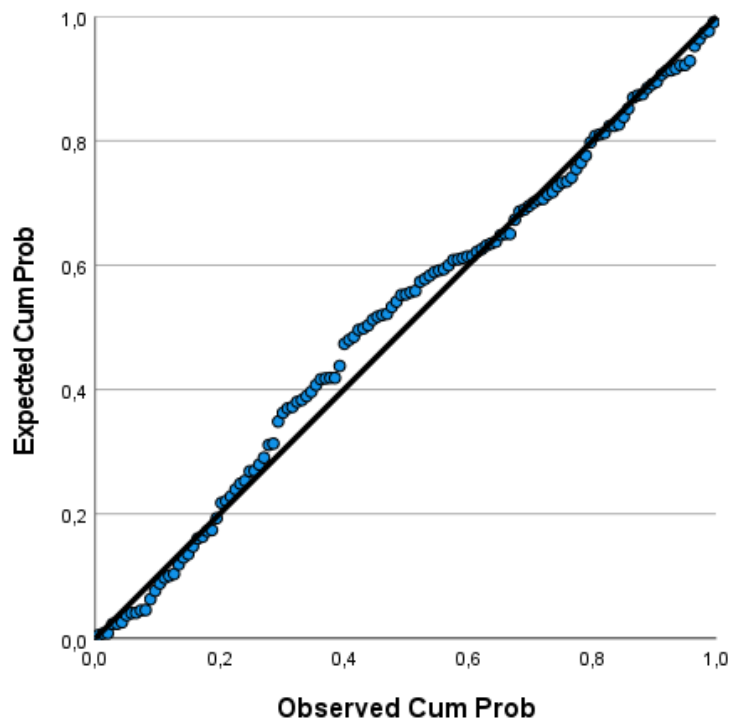
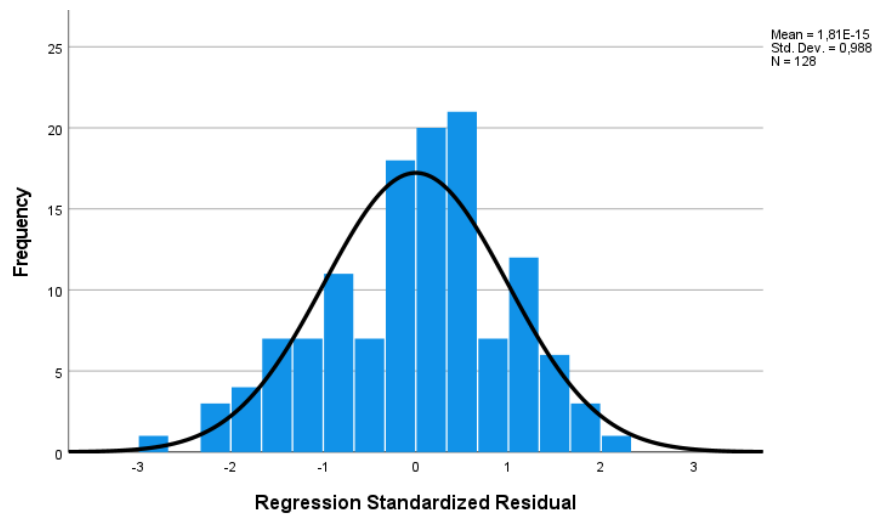
Fourthly, there should be no outliers. Since Cook's Distance value was below 1, there were no outliers or other influential points (see table 2).

Fifthly, the assumption of multicollinearity was checked. There was no multicollinearity as the independent variables (Social support from Dutch people and Contact frequency of Dutch people) do not have a correlation with each other that is more than .7 (Table 3). Moreover, the VIFs were all below 10, and the tolerance statistics were all above .1.

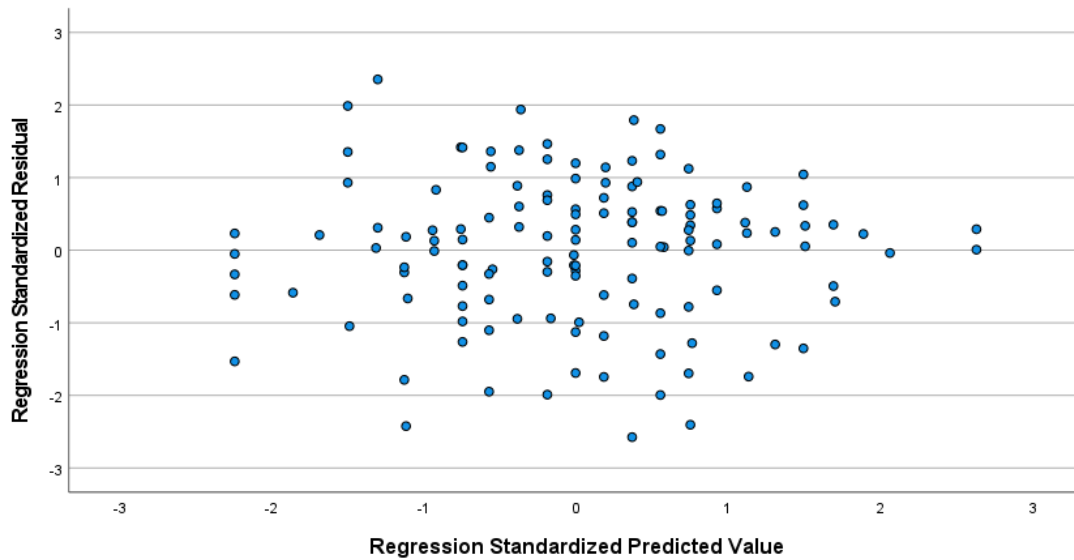
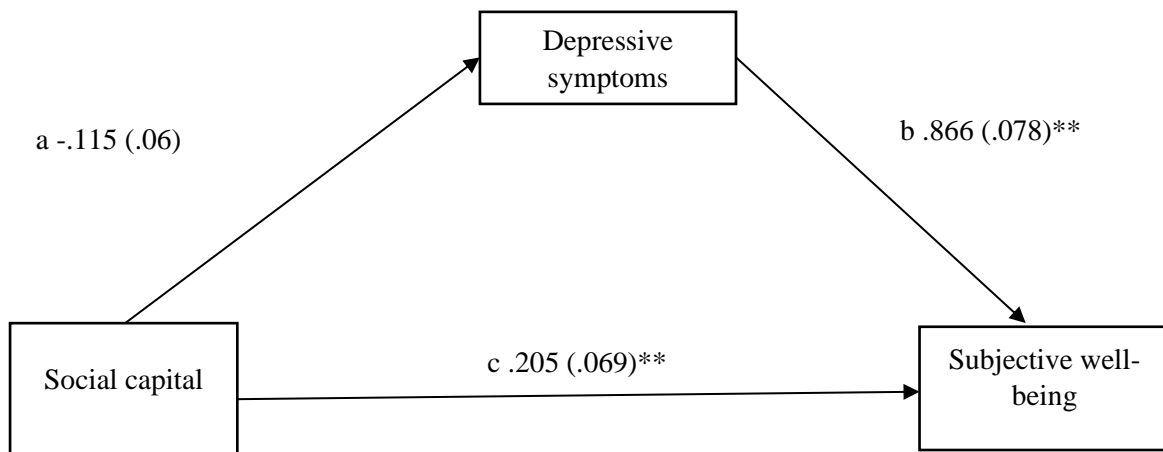
Lastly, the assumption of independence of residuals was not violated as the Durbin Watson statistic is near to the value of 2 (*Durbin-Watson* = 2.312; see Table 2).



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**Figure 1***Normal P-P Plot of Regression Standardized Residual of Subjective well-being***Figure 2***Histogram of the residuals of Subjective wellbeing*

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**Figure 3***Standardized Residual plot of Subjective well-being***Figure 4***Proposed mediation pathway*

*Note. The Unstandardized coefficients are presented outside of the brackets. The standard errors are presented within the brackets.*

**\*\***  $p < 0.01$

**Table 1.***Pearsons correlations, means, and standard deviations of the measured variables*

	1	2	3	4	5	6	7	8	9	10
1. Subjective well-being	-	.199*	.007	-.010	.265**	.130	.117	-.703**	.162	-.098
2. Contact frequency with Dutch people		-	-.050	.245**	.429**	-.158	-.102	-.058	.099	-.224**
3. Contact frequency with co-nationals			-	-.171*	-.048	.653**	-.155	-.032	-.031	.030
4. Contact frequency with other internationals				-	.118	-.244**	.370**	.101	.259**	-.203*
5. Support from Dutch people					-	.156	.304**	-.094	.070	-.125
6. Support from co-nationals						-	.067	-.145	.026	.056
7. Support from other internationals							-	-.099	.057	.101
8. Depressive symptoms								-	-.043	-.056
9. Length of stay in years									-	-.246**
10. Intention to stay										-
Mean	4.05	2.26	3.10	3.97	4.164	5.062	5.597	2.149	2.130	2.370
SD	.734	.996	1.408	.925	1.426	1.535	1.083	.596	1.297	.743

\*\* p &lt; 0.01

\* p &lt; 0.05

Table 2

Residuals Statistics

	Minimum	Maximum	Mean	Standard Deviation
Std. Residual	-2.574	2.354	.000	.992
Cook's Distance	.000	.054	.007	.010

Table 3

Correlations of the independent variables

	Frequency of contact with Dutch people	Support from Dutch people
Frequency of contact with Dutch people	-	.429**  <.001
Support from Dutch people	.429**  <.001	-

\*\*. Correlation is significant at the 0.01 level (2-tailed).